



Management of sustainability and well-being for individuals and society

Conference Proceedings

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Short Papers

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NICOLA VARRONE	<i>University Magna Graecia di Catanzaro</i>
ŠÁRKA VELČOVSKÁ	<i>VŠB-Technical University of Ostrava</i>
DONATA TANIA VERGURA	<i>University of Parma</i>
MASSIMILIANO VESCI	<i>University of Salerno</i>
MILENA VIASSONE	<i>University of Torino</i>
VANIA VIGOLO	<i>University of Verona</i>
FRANCESCO VITELLARO	<i>University of Genova</i>
FILIPPO VITOLLA	<i>University of LUM</i>
AGOSTINO VOLLERO	<i>University of Salerno</i>
ROBERTO VONA	<i>University of Napoli Federico II</i>
SIMONE VONA	<i>University of Chieti e Pescara</i>
CLODIA VURRO	<i>University of Milano</i>
ALESSANDRA ZAMPARINI	<i>University della Svizzera Italiana</i>
LORENZO ZANNI	<i>University of Siena</i>
CRISTINA ZERBINI	<i>University of Parma</i>
CRISTINA ZILIANI	<i>University of Parma</i>
ANTONELLA ZUCHELLA	<i>University of Pavia</i>

To the reader,

this volume contains the long papers of the Sinergie-SIMA 2024 Management Conference, hosted by the University of Parma on June 13th and 14th 2024.

Theory and practice in the field of management have been challenged by the emergence of sustainability and well-being as major global policy priorities. Both sustainability and well-being are complex, value-laden, and strongly interconnected; however, they tend to exist in separate realms.

Sustainability literature has recorded an evolution in the way the concept of sustainable development is understood, leading to the articulation of sustainable development as human “well-being” and “flourishing”, rather than “needs”. Nevertheless, some scholars have pointed out a lack of clarity in the conceptualization, which causes some ambiguity in terms of definition (Ronen & Kerret, 2020). Kjell (2011) observed that human needs and well-being are poorly understood, characterized, and developed by sustainability research. Along the same vein, Helne & Hirvilammi (2015) observed that the overarching goal of sustainable development (i.e., well-being) has often been narrowly interpreted, mainly in economic terms, while connections between the natural environment and human flourishing have been overlooked. More recently, O’Mahony (2022) remarked that the literature conceptualizing human well-being continues to exist largely outside sustainable development. Hence, placing well-being more clearly within the sustainability framework could be highly beneficial to sustainability.

Concurrently, the literature on well-being is almost entirely dissociated from the contributions of nature or the relationships with ecological and planetary systems (Roberts et al., 2015), and the importance of social dimensions is an emergent conclusion. Therefore, the rationale of contextual systems inherent to sustainability research (incorporating views of times, society, and biosphere) could significantly enrich well-being research, fostering a more holistic perspective on well-being and an increased awareness of the limits of individual well-being pursuits (Kjell, 2011).

In brief, though well-being has major implications for sustainable development and vice versa, the body of literature that effectively integrates sustainability and well-being remains in an embryonic stage.

The above considerations aim to act as catalysts for an interdisciplinary debate within the field of management. Enriching the conception of flourishing well-being in sustainability and the contribution of nature to well-being can produce impactful scientific research, as O’Mahony (2022) points out. Equally important is the analysis of the links between sustainability and well-being, encompassing synergies and trade-offs at the organizational level, in value chains, and in interactions with stakeholders across various industries.

The Sinergie-SIMA 2024 Management Conference welcomed contributions based on different theories, methodological approaches, and units of analysis with the potential to empower a transformation for flourishing individuals, society, and the natural world alike. More precisely, the Conference was a great occasion to discuss the research efforts of our research community within tracks related to the:

- Conference theme (Management of sustainability and well-being for individuals and society),
- SIMA thematic groups (Entrepreneurship, Innovation & Technology Management, Intelligenza manageriale nel management, International Business, Marketing, Purpose-driven Businesses, Retailing & Service Management, Small & Family Business, Strategic Communication, Strategy & Governance, Supply Chain Management, Logistics & Operations, Sustainability, and Tourism & Culture Management),
- special tracks (Examining the social and environmental relevance of sustainable digital business models: Impact on business practices and consumers, Growing resilient Italian SMEs, and Perspectives on grand challenges in international business and implications for companies),
- Management Case Studies.

The Conference call for papers gave the opportunity to submit either short and long papers. Overall, the editorial staff received 277 submissions of which 215 short papers and 62 long papers.

For the *short and long papers*, the evaluation followed the peer review process, with a double-blind review performed by, respectively, one or two referees - university lecturers and experts about the topic - selected among SIMA and the community of Sinergie members.

In detail, the referees applied the following criteria to evaluate the submissions:

- clarity of the research aims,
- accuracy of the methodological approach,
- contribution in terms of originality/innovativeness,
- theoretical and practical contribution,
- clarity of communication,
- significance of the bibliographical basis.

The *peer review* process resulted in full acceptance or rejection of the submissions. In the case of disagreement among reviewers' evaluations, the decision was taken by the Chairs of the SIMA thematic groups or conference track. Each work was then sent back to the Authors together with the referees' reports. The suggestions received by the referees were used by the Authors during the presentation of their research works at the Conference.

The evaluation process ended with the acceptance of 211 short papers and 58 long papers. This volume proposes the papers whose Authors have authorized their publication.

All the long papers published in this volume were presented and discussed during the Conference and published online on the web portal of Sinergie-SIMA Management Conference (<https://www.sijmsima.it/>).

While thanking all the Authors, Chairs, and participants, we hope that this volume will contribute to advance knowledge about the management of sustainability and well-being for individuals and society.

The Conference Chairs

Guido Cristini, Beatrice Luceri, Arabella Mocciaro Li Destri, and Marta Ugolini

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Track 1 - Entrepreneurship

Empowering Student Innovators: Framing Entrepreneurship Education in Europe

CHIARA BARTOLI¹ FEDERICA BRUNETTA² CHRISTIAN LECHNER³

Abstract. *The work aims to investigate the drivers of student entrepreneurship in the EU by taking the lens of academic programs, in order to frame the contents that should be thought and the environment that should be created to foster student entrepreneurship. Through a systematic literature review and the use of a software-assisted approach, the work allows for the construction of a framework of EU student entrepreneurship that takes into account the key components of the curricula and the education environmental factors that are relevant for the enhancement of entrepreneurial ideas among students. The work emphasizes the importance of the connection between curricula and the entrepreneurial world, the development of soft skills combined with technical competences and interpersonal skills. It also stresses the relevance of providing programs with technological and physical infrastructures and of ensuring continuous teacher training.*

Keywords: entrepreneurship education, student entrepreneur, European Union, skills

Background and objectives. *Student entrepreneurs is a valuable lever of economic development and have a strong potential to be a driver of entrepreneurship in Europe. The EU entrepreneurial ecosystem is increasingly dominated by a cohort of young individuals who are introducing digital-first strategies in various sectors, showing in their business project not only technological skills but also a strong focus on making a positive impact within society, prioritizing purpose and passion in their endeavors.*

These include student entrepreneurs, who are a distinctive group with a unique approach to acquiring and using resources compared to entrepreneurs who start businesses outside the university context (Politis et al., 2012). In fact, during their studies, they have a chance to develop entrepreneurial mindset through entrepreneurship education, and to acquire greater flexibility in choosing their career path (Passavanti et.al, 2023). While the magnitude of new ventures created by students or recent graduates is much higher than for professors and researchers, their performances are comparable (Astebro et al. 2012).

Entrepreneurial motivation is the driving force that prompts an individual to translate the intention to start a business venture into concrete actions. These are fueled by either external factors, such as family, friends, and important individuals who offer support, or by internal drive that are passion, personal challenge and the need to realize their dreams, make a difference, and create something significant (Le and Tran, 2021).

In that context entrepreneurship education finds its relevance. Entrepreneurship education is defined as “the process of equipping individuals with the concepts, skills, and abilities necessary for entrepreneurship to recognize opportunities that others have overlooked and to have the self-confidence to act where others have hesitated” (Zhang et al., 2014). Entrepreneurship education can have a positive impact on students' intrinsic motivation, encouraging them to turn their entrepreneurial intentions into concrete actions. Hence, motivated and well-prepared students who have undergone entrepreneurship training programs are more likely to initiate new ventures. Additionally, the key to entrepreneurial success lies not only in the idea itself but also in the passion, determination, and competence to implement entrepreneurial projects.

In Europe, entrepreneurship education is seen as a key factor for lifelong learning (Peric & Peterka, 2020) and to counteract youth unemployment⁴. In coherence with this, in 2016 the Commission launched the European entrepreneurship competence framework (EntreComp), with the aim to foster actions to improve the entrepreneurial ability across the European Union. After the breakout of the COVID Pandemic, there has been a global trend towards promoting entrepreneurship education to equip graduates with the skills and mindset needed to start their own businesses,

¹ LUISS University
e-mail: cbartoli@luiss.it

² LUISS University
e-mail: fbrunetta@luiss.it

³ LUISS University
e-mail: clechner@luiss.it

⁴ European Commission (2013). Reigniting the entrepreneurial spirit in Europe. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52012DC0795>

European Commission. (2014). Thematic Working Group on Entrepreneurship Education. Available at: https://ec.europa.eu/assets/eac/education/experts-groups/2011-2013/key/entrepreneurship-report-2014_en.pdf

as youth entrepreneurship has been recognized as an antidote to counteract graduate unemployment, especially in the EU.

Entrepreneurship education allows not only student to start their own business, but more importantly it trains their entrepreneurial mindset (Rippa et al., 2023) and increase their flexibility in their career choice (Passavanti et al., 2023). Hence, by means of entrepreneurship education students are equipped with the skills needed to face the job market though a flexible approach, that help them identify opportunities and take risks, work in teams and to be better equipped to solve problems⁵.

The educational context can significantly contribute to the development of essential knowledge and skills that young entrepreneurs need to succeed in their business ventures. Universities, in particular, offer a valuable opportunity to acquire specific knowledge that is crucial for entrepreneurial success (Leiva et al., 2023). In fact, they provide an environment apt to transfer to individuals with specific, valuable knowledge that can leverage entrepreneurship projects and can positively influence the project and ideas of students involved in nascent entrepreneurship in Europe (Leiva et al., 2023). Moreover, co-curricular events can provide a platform for young entrepreneurs to build relationships with successful entrepreneurs, investors, mentors, and other key players in the entrepreneurial ecosystem, thereby facilitating the development of valuable social capital (Honig and Davidsson, 2000).

Hence, though entrepreneurship education, European Universities can contribute to accelerating the transfer of research and development (R&D) knowledge and innovation to the broader business community, thereby stimulating economic growth (Sá and Pinho, 2019). The effectiveness of Entrepreneurial Education (EE) is the object of a debate at European and International level international, covering the multitude of factors that have to be taken into consideration for the entrepreneurship programs to be effective, but also about what activities should be included in programs and what are the most efficient teaching models.

Regarding the factors affecting student intentions to become entrepreneurs, the academic literature agrees that there are multiple determinants that must be taken into account and that intervene in student's willingness to become an entrepreneur, beyond motivations. According to a recent literature review carried out by Maheshwari et al. 2022, six factors should be taken into consideration within the evaluation of University students' willingness to become entrepreneurs that include cognitive factors that are related to attitude toward entrepreneurship, social norms, and perceived behavioral control; personality factors: individuals with a higher risk propensity felt more capable and confident in their entrepreneurial endeavors, positively impacting their intentions to engage in entrepreneurship and environmental factors. Moreover, regional context, formal and informal country-level structures, entrepreneurial purpose, and capital availability, all can also function as a bridge between personal characteristics and entrepreneurial aspirations. In particular, access to funding is crucial for initiating new businesses. However, equally significant are factors like foresight regarding future business sectors and the strength of one's social networks. Also, family support and exposure to entrepreneurial role models, were identified as crucial determinants of students' intentions. Social factors, including prior entrepreneurial experience, had varying impacts on intentions. It is also stated that, educational factors, especially entrepreneurship education, significantly influence students' attitudes and intentions towards entrepreneurship (Maheshwari et al., 2022). A meta-study show that entrepreneurial education increases entrepreneurial intent: this effect is significant and applies also to students that have not shown prior interest in entrepreneurship (Martinez-Gregorio et al., 2021).

Despite the acknowledged role of student entrepreneurship in Europe for the competitiveness of the European single market, and the existence studies analyzing the factors that drive students and individuals to become entrepreneurs are missing there is a lack of works that focus on the content of entrepreneurial education programs, to understand how they should be designed and led in order to be able to act as drivers of student entrepreneurship.

In coherence with these premises, the present work aims to identify the drivers of student entrepreneurship by taking the lens of programs at University level, in order to frame the skills that should thought to foster student entrepreneurship, and to identify the education environmental factors that could be key drivers for the enhancement of student entrepreneurship.

Methodology. In coherence with the aim of deepening the field of knowledge about student entrepreneurship from the point of view of education and training, a Systematic Literature Review has been carried out. Systematic Literature Review (SLR) is considered one of the most effective methods for comprehensively recognizing and analyzing a body of literature pertaining to a specific subject. It serves to showcase existing knowledge while also identifying areas for further research, thereby justifying ongoing contributions to current understanding. (Levy and J. Ellis, 2017). In coherence with Tranfield et al. (2003) prescriptions about the SLR, the reviewing process has been divided into the following four phases (Tranfield et al., 2003): Planning, Execution, Evaluation and Analysis.

⁵ European Commission. (2014). Thematic Working Group on Entrepreneurship Education. Available at: https://ec.europa.eu/assets/eac/education/experts-groups/2011-2013/key/entrepreneurship-report-2014_en.pdf

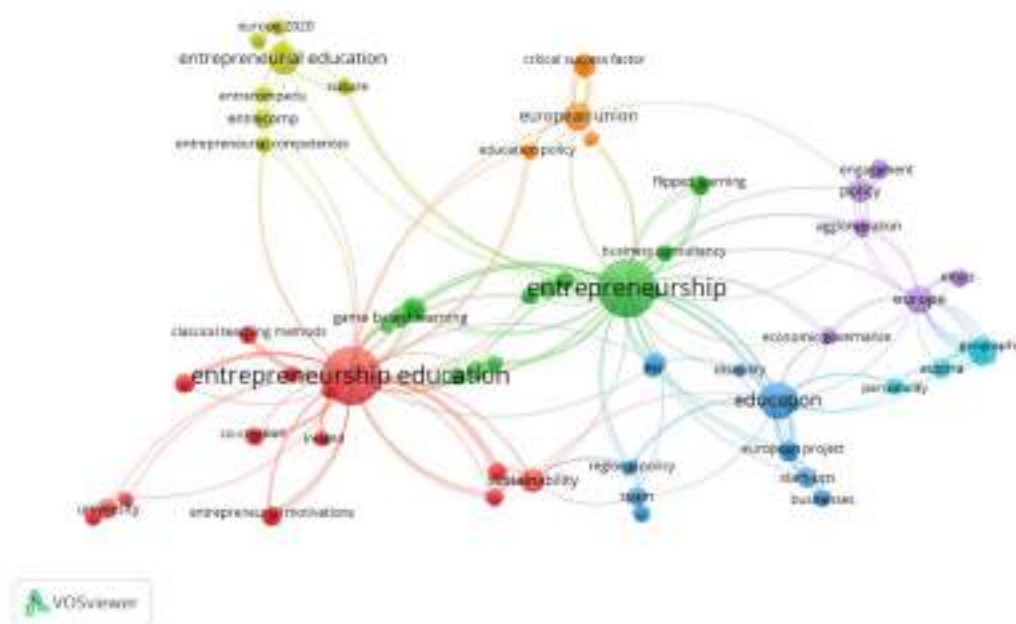
1. *Planning* - A preliminary study about the subject under analysis was carried out in order to deepen the topic and select the keyword for extraction phase, drawing on the grey literature on the subject and restricting the focus to the European Union area.
2. *Execution* - Record extraction was made through the following set of concatenated keywords using Boolean modifiers (Brereton et al., 2007): “entrepreneur*” AND “education” OR “university” AND “European Union” OR “EU”. Extraction was made on SCOPUS database. Extraction was applied to title, abstract and keywords. Data extraction was limited to peer-reviewed scholarly journals written in English, published without any year limit and any limit of discipline, in order to widen the scope of the research. The extraction was made in September 2023. A total number of 188 records were retrieved, duplicates were automatically eliminated. Records were saved for further analysis. Abstracts and article keywords, and main corpus of the article were read. Records not related to the research subject were excluded. The screening resulted in 65 articles selected, saved on .csv format for further software assisted analysis.
3. *Evaluation* - 39 of the 65 articles were deemed explanatory to the topic under analysis. These were complemented by 3 additional resources identified through snowballing, leading to select 42 resources belonging to 34 scientific journals for further qualitative and quantitative analysis.
4. *Analysis*. To discern the themes covered in the articles, a software-assisted coding process was employed, adhering to the Gioia (2012) methodology. This process unfolded across three phases: an initial phase of open coding, proceeded by axial coding where codes were scrutinized for their interpretative value and organized into pertinent dimensions of significance according to the driving factors, the skills and the challenges, in order to constructing an explanatory framework illustrating core curricula for entrepreneurship education. All the 65 resources were also subjected to bibliometric analysis to visualize co-occurrence networks of important terms from the keywords of the resources extracted in order to frame explaining clusters.

Results

Co-occurrence analysis

The co-occurrence analysis of the resources, which was conducted with VosViewer software on the basis of resource keywords. This allowed for 7 clusters to be identified (minimum cluster size of 12 keyword). Figure 1 visualize the network among the resources. Circles represent the number of co-occurrence while colors identify the clusters.

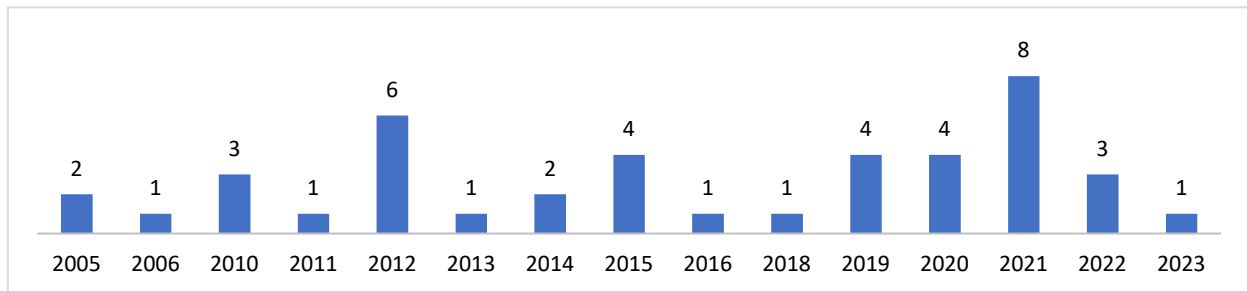
Fig. 1. Visualization of links among resources and main keywords



Cluster 1 (N= 43 items) contains keywords recalling the content of the programs ; Cluster 2 (N=34 items) suggest the role of technology and sustainability in the programs; Cluster 3 (N=23 items) recalls the role of partnerships with the business world; Cluster 4 (N=19 items) contains keyword that recall the regulatory framework at the EU level; Cluster 5 (N=17 items) comprises keyword that focus on the economic and contextual factors; Cluster 6 (N=14 items), recalls the core competences, finally Cluster 7 (N=13 items) suggests the critical success factors of entrepreneurship education.

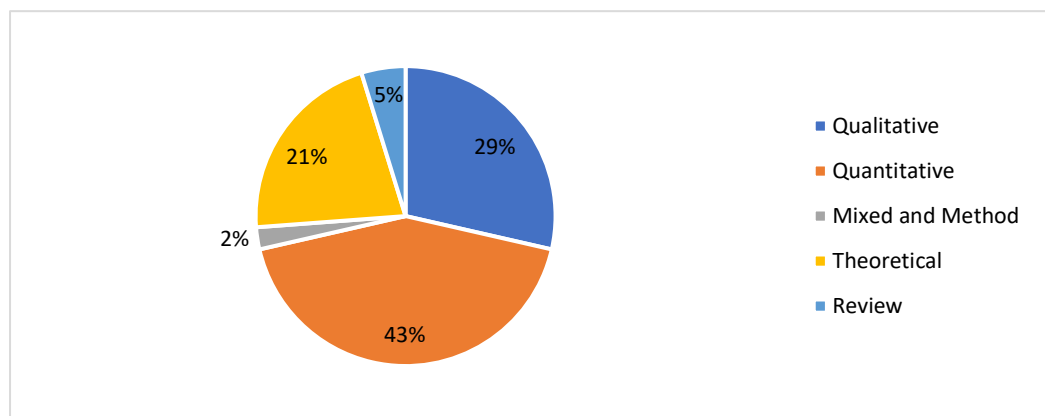
Quantitative analysis. The quantitative analysis of the resources shows that the topic began to be of interest to the academy from 2005, the year in which the first contributions were published in peer reviewed scientific journals, and reached its peak in 2021, which corresponds with the year following the COVID-19 pandemic. Of relevance in terms of the number of publications is 2016, which is the year preceding the elaboration of the DIGI COMP, and 2012, to which 6 resources belong and which is the year following the debt crisis in Europe.

Fig. 2. Number of articles published per year



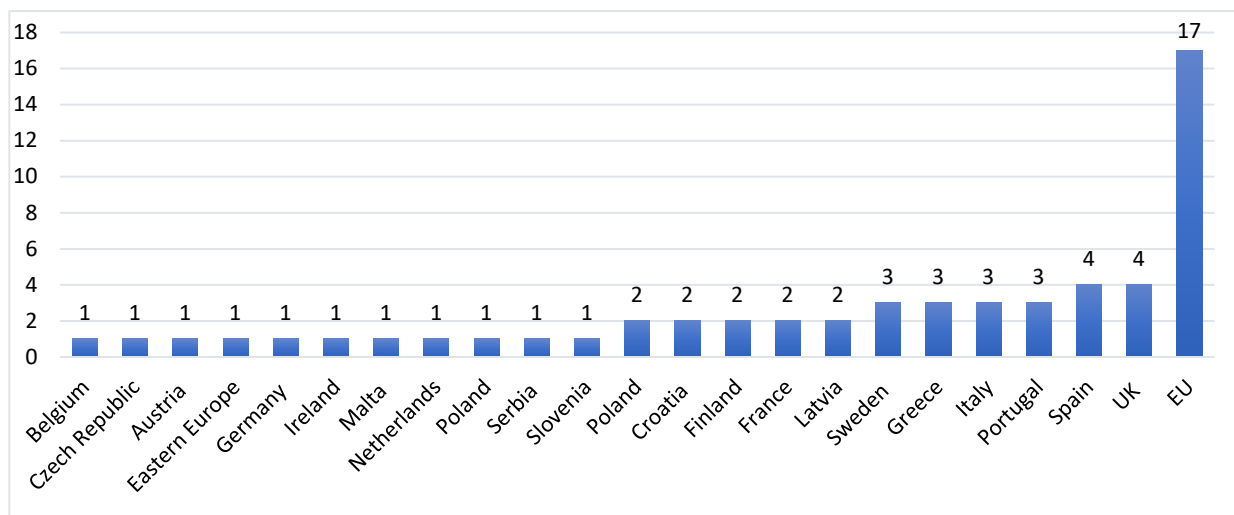
From the point of view of the methodological approach, it emerges that the majority of studies analyzed adopt a field approach to the topic. Quantitative approach characterizes more than 1/5 of the works analyzed, where the survey technique is prevailing. The studies that follow a qualitative approach account for 29% of the total resources, while the number of contributions in the form of reviews (5%) or mixed and method (2%) is limited.

Fig. 3. Methodological approach employed to investigate student entrepreneurship



From the point of view of the countries surveyed, most of the works (17) take into consideration the entire European area, 4 are the works that take into consideration more than one country. There is also considerable interest in the countries of Eastern Europe, and Southern Europe, with particular regard to Spain (4), Italy (3), Greece (3) and Portugal (3).

Fig. 4. Country focus of studies about student entrepreneurship



Qualitative Analysis

Skills to be taught in entrepreneurship programs

Concerning the skills to be thought of, from the coding of the results and discussions of the articles, it is 28 skills that should be taught within entrepreneurship education programmes emerges. These belong to four fundamental categories: cognitive, interpersonal, self-leadership and technical. Table 1 shows the categories and skills identified. Results emphasize that entrepreneurship education is going toward developing enterprising mindsets and reflexive action skills, rather than solely focusing on business building competencies. In fact, it is stressed the central role of experiential knowledge within the entrepreneurial learning process, that necessarily has to be completed with traditional industry-specific knowledge, such as knowledge of technologies, processes or product, management knowledge (business organization, either in administration or management) in order to allow students to acquire specific skills to conduct projects or to establish ventures (Soriano and Castrogiovanni, 2012).

Moreover, it emerges the relevance of adopting a distributed approach to the foundation knowledge and skills needed in entrepreneurship in order to make courses available all students apart from the academic major (Staniewski and Szopiński, 2015). The entrepreneurial approach (López-Núñez et al., 2021) means also developing social and networking competences and the management of teams, together with cognitive skills which relate to the ability to solve complex problems, along with critical thinking, creativity and idea generation (Leiva et al., 2023).

The literature shows that the academy is witnessing a paradigm shift in entrepreneurship education, from theoretical learning “about” to experiential learning (learning “for”), the “learning for” is intended to be the acquisition of knowledge that can be used in different contexts and that structure a precise entrepreneurial mindset, including the development of creativity, critical and analytical thinking (Wahid et al., 2017). This also means that teaching models are not suitable for every context and they should be adapted to the specific cultural context where entrepreneurship education occurs (Mets et al., 2021).

Tab. 1. Skills to be thought in academic literature

Skills	Dimension
Ability to generate innovation	Cognitive
Problem solving	
Analytical and critical thinking	
Business acumen	
Creativity and idea generation	
Curiosity	
Ethical and sustainable thinking	
Judgment	
Situation modeling	
Communication Skills	Interpersonal
Networking	
Team work	
Self-confidence and self-reflection	Self Leadership
coping with uncertainty	
Entrepreneurial mindset	
Independence	
Motivation	
Resilience	
Self-regulation	
Taking initiative	
Valuing ideas ambiguity and risk	Technical
Decision making	
Financial and economic literacy	
ICT Skills	
Intellectual property law	
Managerial skills	
Project management	
Industry specific knowledge	
Research and inquiry skills.	

Facilitators affecting the Program performance

The resource analysis identified 34 main facilitators of student entrepreneurship at the European level and categorized them into 8 key areas.

The literature on student entrepreneurship dwells on the factors that are identified as facilitators of nascent entrepreneurship from student education. These cover multiple areas, which are “business community interaction”, “experiential learning”, “incentives”, “tangible and intangible infrastructure”, “mobility”, “peer to peer interaction”, “self-reflection, and “support and motivation”.

What emerges is that Universities are called upon to project entrepreneurship education through activities that are aimed at creating communities of practices and foster greater student contact with the business world (Jones, 2022). This involves contamination between business and academia, by enhancing active involvement of students in business projects

to create an effective entrepreneurial learning experience for the participants (Karanassios et al., 2006). In addition, studies stress the relevance of entrepreneurial mentoring (Hadjichristodoulou et al., 2020) together role models that are key to enhance the motivation of students. In particular, mentoring appears to be critical for student entrepreneurs (Ahsan et al., 2018).

Another key area concerns the structure of the courses, which should promote experiential learning, through multiple activities such as roleplaying, business simulations (Lesinskis et al., 2021; Perić et al., 2020) and other extracurricular activities (Coleman et al., 2010). Student mobility is also key to develop entrepreneurial mindset, by means of foreign trips and exchange.

Studies also stress relevance of providing students with incentives by means of awards and hackaton that drive the development of ideas and startup projects (Slišane et al., 2021). Studies also recall added aspects that concern University infrastructures, which include the availability of spaces and systems that allow for the full implementation of experiential learning modes, such as digital systems for e-learning, product modeling tools, and laboratories, along with professional development mechanisms for instructors (Perić et al., 2020).

Tab. 2. Facilitators of entrepreneurship education in academic literature

Facilitator	Area
Networking events Communities of Practice Cooperation Business Sector Workshops Networking events Involvement of Universities in Business Communities	Business community Interaction
Extracurricular activities community work Simulations Guest lecturers Project Learning by doing	Experiential learning
Work with rewards Role model Lectures Awards and Hackatons	Incentives
Entrepreneurial structures in Universities Introduce entrepreneurship education at early stage Education of teacher Continuing education Education of instructors E-learning platforms Integrating digital tools	Tangible and intangible Infrastructures
Student Mobility	Mobility
Interactive Group Work Exchange knowledge Networking events peer-to-peer learning and feedback	Peer to peer Interaction
Individual assignment Role playing More inquiry-oriented approaches	Self -reflection
Business Mentorship Role models Giving feedback Practice	Support & Motivation

Main Challenges for student entrepreneurship

The analysis also reveals challenges that are linked to an effective management of student entrepreneurship in Europe carries out multiple challenges. These can be grouped into the following categories: 1) collaboration; 2) training of educators and 3) entrepreneurial culture.

Studies point out that in order to create a conducive environment for entrepreneurship education in Europe, priority should be given to closing the gap between industry and academia to create a better collaboration between the two worlds (Giancarlo and Squazzoni, 2007).

The need to strengthen entrepreneurial skills and to create an entrepreneurial mindset among students raises the challenge of continuous training of educators, for a constant update of their skills (Amiel et al., 2021). Another major challenge covers entrepreneurial culture. There is a need to foster acceptance of the concept of entrepreneurship at the societal level, and to overcome a perceived lack of added value of entrepreneurship in some cultural contexts (Seikkula-Leino et al., 2021). This means overcoming the barriers of negative attitudes toward becoming entrepreneur (Bilić et al., 2021) through ad hoc and international policies to introduce entrepreneurship education into the national curricula at all levels of education and to promote the use of programs based on "learning by doing" (Karanassios et al., 2010) and to cultivate an entrepreneurial mindset among young Europeans (Fonseca et al., 2012).

Conclusions

The main objective of this study is to unveil the factors that determine the success of entrepreneurship programs in terms of skills to be thought and the enhancer of entrepreneurial ideas among students. The work made it possible to highlight the main drivers and challenges in education programs at University level that govern the creation of student entrepreneurs and to frame a “skill canvas” and thus bridging a research gap. Facilitators of student entrepreneurship are mainly related to the creation of synergies between physical and technological infrastructures, the development of soft skills, the interaction with the entrepreneurial world and with peers, as well as with the development of personal abilities. The work also seems to suggest that key to student entrepreneurship is a balance between theoretical knowledge and practical activities, and this new perspective stems from the mingling of two existing pedagogical approaches. Furthermore, the work frames the contents of the course curricula that should be taken into consideration when planning an entrepreneurship program in order to equip it with the ability to train future entrepreneurs. This should include a mix of factors that concern the strengthening of both technical skills and personal, cognitive and relational competencies.

References

- AMIEL M., YEMINI M., KOLLECK N. (2021), “Questioning the rhetoric: A critical analysis of intergovernmental organisations’ entrepreneurship education policy”, *European Educational Research Journal*, SAGE Publications, vol. 21, n. 5, pp. 756-777.
- BILIĆ I., ŠKOKIĆ V., LOVRINČEVIĆ M. (2021), “Academic Entrepreneurship in Post-transition Country-Case Study of Croatia”, *Journal of the Knowledge Economy*, vol. 12, n. 1, pp. 41-55.
- COLEMAN M., HAMOUDA A., CORMICAN K. (2010), “The Accelerating Campus Entrepreneurship (ACE) Initiative: Creating Entrepreneurial Graduates for Ireland”, *Industry and Higher Education*, SAGE Publications Ltd, vol. 24, n. 6, pp. 443-454.
- FONSECA B., MORGADO L., PAREDES H., MARTINS P., GONÇALVES R., NEVES P., NUNES R.R., et al. (2012), “PLAYER-a European project and a game to foster entrepreneurship education for young people”, *Journal of Universal Computer Science*, vol. 18, n. 1, pp. 86-105.
- GIANCARLO P., SQUAZZONI F. (2007), “Academic entrepreneurship and scientific innovation: micro-foundations and institutions”. HADJICHRISTODOULOU V., VARNAVA MAROUCOU D., KONIS E., MIHAI YIANNAKI S. (2020), “The success of STEM graduates in entrepreneurship training: a European case study”, *Global Business and Economics Review*, vol. 22, n. 1/2, p. 198.
- HONIG B., DAVIDSSON P. (2000), “the Role of Social and Human Capital Among Nascent Entrepreneurs.”, *Academy of Management Proceedings*, vol. 2000, n. 1, pp. B1-B6.
- JONES O. (2022), “Academic engagement with small business and entrepreneurship: Towards a landscape of practice”, *Industry and Higher Education*, vol. 36, n. 3, pp. 279-293.
- KARANASSIOS N., PAZARSKIS M., MITSOPOULOS K., CHRISTODOULOU P. (2006), “EU Strategies to Encourage Youth Entrepreneurship: Evidence from Higher Education in Greece”, *Industry and Higher Education*, SAGE Publications Ltd, vol. 20, n. 1, pp. 43-50.
- KARANASSIOS N., PAZARSKIS M., MITSOPOULOS K., HASSIOTOU A. (2010), “Teaching youth entrepreneurship into a European framework of analysis: Evidence from higher education in Greece”, vol. 8, pp. 93-105.
- KHELIFI S. (2023), “Informal university entrepreneurship: The missing link in transition higher education systems”, *International Journal of Educational Development*, vol. 97, p. 102725.
- LE T.T.K., TRAN B.T. (2021), “Entrepreneurial Motivations and Intentions among Students: A Case Study at a Vocational Institution”, *ICETT 2021: 2021 7th International Conference on Education and Training Technologies*.
- LEIVA J.C., MORA-ESQUIVEL R., SOLÍS M. (2023), “Nascent entrepreneurship in university students: the role of the context”, *Venture Capital*, Routledge, vol. 25, n. 3, pp. 255-284.
- LESINSKIS K., MAVLUTOVA I., PEISENIECE L., HERMANIS J., PEISENIECE E., POKATAYEVA O. (2021), “Modern business teaching: The sable labor market provision for the emerging generations”, *Estudios de Economia Aplicada*, vol. 39, n. 5, available at: <https://doi.org/10.25115/eea.v39i5.5202>.
- LÓPEZ-NÚÑEZ M.I., RUBIO-VALDEHITA S., DÍAZ-RAMIRO E., MARTÍN-SEOANE G. (2021), “The entrepreneurial profile of university students: A predictive model”, *Revista de Educacion*, vol. 2021, n. 392, pp. 11-32.
- MAHESHWARI G., KHA K.L., AROKIASAMY A.R.A. (2022), “Factors affecting students’ entrepreneurial intentions: a systematic review (2005-2022) for future directions in theory and practice”, *Management Review Quarterly*, available at: <https://doi.org/10.1007/s11301-022-00289-2>.
- METS T., HOLBROOK J., LÄÄNELAID S. (2021), “Entrepreneurship education challenges for green transformation”, *Administrative Sciences*, vol. 11, n. 1, available at: <https://doi.org/10.3390/admsci11010015>.
- PASSAVANTI C., PONSIGLIONE C., PRIMARIO S., RIPPA P. (2023), “The evolution of student entrepreneurship: State of the art and emerging research direction”, *The International Journal of Management Education*, vol. 21, n. 2, p. 100820.
- PERIĆ J., OBERMAN PETERKA S., GETOŠ Ž. (2020), “The role of vocational education in developing entrepreneurial competences of students”, *Ekonomski Pregled*, vol. 71, n. 5, pp. 463-492.
- RIPPA P., FERRUZZI G., HOLIENKA M., CAPALDO G., CODURAS A. (2023), “What drives university engineering students to become entrepreneurs? Finding different recipes using a configuration approach”, *Journal of Small Business Management*, Routledge, vol. 61, n. 2, pp. 353-383.
- SÁ E.S., PINHO J.C.M.R. D. (2019), “Effect of entrepreneurial framework conditions on R&D transfer to new and growing firms: The case of European Union innovation-driven countries”, *Technological Forecasting and Social Change*, vol. 141, n. December 2018, pp. 47-58.

- SEIKKULA-LEINO J., SALOMAA M., JÓNSDÓTTIR S.R., MCCALLUM E., ISRAEL H. (2021), "Eu policies driving entrepreneurial competences-reflections from the case of entrecomp", *Sustainability (Switzerland)*, vol. 13, n. 15, available at:<https://doi.org/10.3390/su13158178>.
- SLIŠĀNE A., LĀMA G., RUBENE Z. (2021), "Self-assessment of the entrepreneurial competence of teacher education students in the remote study process", *Sustainability (Switzerland)*, vol. 13, n. 11, available at:<https://doi.org/10.3390/su13116424>.
- SORIANO D.R., CASTROGIOVANNI G.J. (2012), "The impact of education, experience and inner circle advisors on SME performance: insights from a study of public development centers", *Small Business Economics*, Springer, vol. 38, n. 3, pp. 333-349.
- STANIEWSKI M.W., SZOPIŃSKI T. (2015), "Student readiness to start their own business", *Economic Research-Ekonomska Istrazivanja*, Routledge, vol. 28, n. 1, pp. 608-619.
- WAHID N.A., ABD AZIZ N.N., HALIM R.A. (2017), "Networking and innovation performance of micro-enterprises in Malaysia: The moderating effects of geographical location", *Pertanika Journal of Social Sciences and Humanities*, vol. 25, n. S, pp. 277-287.
- ZHANG Y., DUYSTERS G., CLOODT M. (2014), "The role of entrepreneurship education as a predictor of university students' entrepreneurial intention", *International Entrepreneurship and Management Journal*, vol. 10, n. 3, pp. 623-641

Entrepreneurial Education as a transition driver from informal to formal entrepreneurship in complexity context: the AWE program

FABIO GRECO¹ FRANCESCO CARIGNANI² FRANCESCO BIFULCO³

Abstract

This working progress research investigates the role of entrepreneurial education in fostering the formalization of informal female entrepreneurship. The modalities of this type of transition are analyzed through a focus on the Academy for Women Entrepreneurs program (AWE). Addressing the complexity of women's informal business practices, especially in socio-economically challenging contexts, the research utilizes qualitative method to explore the transformative impact of the AWE program. Preliminary findings suggest that the AWE's comprehensive approach, emphasizing education, mentorship, and networking, may alleviate multifaceted barriers faced by women entrepreneurs. The paper offers implications into the dynamics of transitioning from informal to formal business, and how entrepreneurship education can be a catalyst for women businesses empowerment.

Key words: Informal Entrepreneurship; Women Entrepreneurship; Entrepreneurship; Complexity

Framing of the research. Informal entrepreneurship refers to the globally widespread economic activities, especially prevalent in underdeveloped and developing countries, operating outside official channels. While these activities are legal in every other aspect, they are not formally recognized by institutions, and their growing importance in complex contexts necessitates targeted strategies for understanding and managing them (Williams, 2014). Moreover, informal entrepreneurship also manifests in more developed geographical areas, taking the form of emerging entrepreneurial realities. Although these comply with the reference that frameworks, they often rely on precarious and provisional structures in the initial phases, which do not provide a solid foundation for sustainable growth and development of new entrepreneurial initiatives. Within the realm of female entrepreneurship, this phenomenon is particularly widespread, especially in complex and less developed socio-economic contexts (Welter et al., 2015; Rashid and Ratten, 2020). Female entrepreneurship represents a vital and multifaceted area of the global economy (Muhammad et al., 2020; Greco et al., 2023), with a presence in various sectors. Its analysis requires a critical examination of the socio-economic and cultural factors influencing its development, including market entry barriers, educational and professional restrictions, gender and ethnic discrimination, and other forms of complexity.

Entrepreneurial Education.

Education is a fundamental characteristic of entrepreneurial development (Honig and Martin, 2014). In a context where it is necessary to interface with a more dynamic and complex market, entrepreneurship education has become an extremely interesting subject of study as a fundamental element of doing modern business (Vanevenhoven, 2013). In entrepreneurship studies, there have therefore been numerous studies that have focused on the factors that influence entrepreneurship itself, highlighting a close relationship between what is defined as entrepreneurial creativity, with entrepreneurial education (Shahab et al., 2019), just as this last element is related to the development of human capital linked to entrepreneurship and entrepreneurship intention (Passaro et al., 2018), characteristic of subjects who already carry out studies with the precise intention of becoming entrepreneurs (Fayolle & Gailly, 2015). However, entrepreneurial intention can also be formed during studies, thus underlining once again the role of entrepreneurship education in the formation of entrepreneurial behavior (Rauch & Hulsink, 2015). Some studies have focused on the typology of entrepreneurial education concerning studies, differentiating between optional education and compulsory education concerning the training offer, showing how both these typologies contribute to the entrepreneurial skills of students during their training process; however, the impact of entrepreneurship education in compulsory courses is closely related to how students perceive their parents' entrepreneurial performance, thus also highlighting a family

¹ University of Napoli Federico II
e-mail: fabio.greco@unina.it

² University of Napoli Federico II
e-mail: francesco.carignani@unina.it

³ University of Napoli Federico II
e-mail: francesco.bifulco@unina.it

influence (Hahn et al, 2020). But a determining factor in entrepreneurship education linked to training courses is also given by the stakeholders on whom the subjects who propose these courses can count, through their involvement, coaching and mentoring, the sharing of experiences and good practices as well as networking (Bischoff et al, 2018). This therefore confirms how Education often makes a difference because it is linked to access to resources and networks (Cannon, 2008). Some studies show that it not only concerns the creation of a business but also affects managerial skills (Albornoz Pardo, 2013). It is also highlighted that entrepreneurship education is an extremely useful tool to reduce gender differences for women with entrepreneurial aspirations, given that, in the context of studies on career intentions, entrepreneurship is still declining as a field “ male” and that women, particularly young women, may limit their career aspirations because they mistakenly believe they do not possess the necessary skills and abilities (Wilson et al., 2007).

Informal Entrepreneurship

Informal entrepreneurship represents a type of business, common globally, which involves the creation and management of the business without it being registered with the competent legal authorities (Mallon & Fainshmidt, 2022). According to the OCED, “informal entrepreneurs are defined as those starting a business or are the owner/manager of a business who engage in monetary transactions not declared to the state for tax, benefit and/or labor law purposes when they should be declared but which are legal in all other respects” (Williams, 2014). The concept of informal entrepreneurship is therefore profoundly linked to that of the informal economy: in informal entrepreneurship, the monetary transactions are all, or largely, not traced, and therefore not declared to the competent authorities, even though they are legitimate goods or services. , given that the conditions described, in the case of illicit goods and services, we are talking about a criminal and non-informal economy, where some populations who do not seem to be predisposed to entrepreneurial dynamics, in reality, are regularizing these businesses would bring economic development to those countries (Williams & Nadin, 2010). If many studies recognize the cost or level of difficulty as the predominant factor in the choice to set up an informal business, other studies instead highlight how the choice is linked, in a more generic way, to the conditions of that market: certainly, the costs of registration and formalization have an impact, but the level of poverty and infrastructure also make the informal aspect more attractive (Siqueira et al., 2016). The level and type of education is also a factor that has a significant impact on the development of informal entrepreneurship, where the presence of secondary and tertiary education favors formal entrepreneurship (Jiménez et al., 2015). However, the university, if supported by correct government policies, can also have a decisive role in attracting economic support for the informal microeconomy (Madichie & Agu, 2023). It is therefore confirmed that the level of quality of political and economic institutions are also factors that influence the type of entrepreneurship, increasing formal entrepreneurship and decreasing informal entrepreneurship (Autio & Fu, 2015), just as the sociodemographic level is closely linked to the level of informal entrepreneurship present (Santos et al., 2021). It is therefore underlined how correct government policies have an impact on informal entrepreneurship, reducing this phenomenon (Omri, 2020). In emerging markets, where the presence of informal entrepreneurship is strong, the very presence of foreign companies and their interaction with local ones is a factor of change towards a greater presence of forms of formal entrepreneurship (Bu & Cuervo-Cazurra, 2020). The factors that influence the development of informal businesses are therefore varied, from access to the market and the role of the family to the sharing of capital and resources, with a view to a true ecosystem of informal entrepreneurship (Igwe et al., 2020). The literature therefore underlines the importance of analyzing this phenomenon. Knowledge of the dynamics linked to informal entrepreneurship can also help managers to better understand the market in which they operate and in particular the nature of a company’s supply chain, thus making it more effective to formulate strategies, but since the informal businesses operate outside the regulatory system, their dynamics and activities are difficult to trace compared to formal businesses (Thai & Turkina, 2014).

Complexity in Female Entrepreneurship

Women’s entrepreneurship (WE) represents a dynamic and multifaceted segment of the global economy. Similar to the broad scope of food delivery, women’s entrepreneurship encompasses a wide range of activities and sectors. This complexity and non-linearity render the topic of women’s entrepreneurship a highly intricate subject for academic study. Brush et al. (2009) define women’s entrepreneurship as the process where women organize all types of businesses, including micro, small, and medium enterprises. Hughes et al. (2012) further expand this definition by emphasizing the role of women entrepreneurs in both formal and informal economies, consequently, this necessitates the redirection of scholarly inquiry towards new directions.

The concept of women’s entrepreneurship is not monolithic but varies significantly across different cultural, economic, and social contexts. De Bruin et al. (2007) highlight the diversity in women’s entrepreneurship, noting that the motivations, challenges, and successes of women entrepreneurs can be vastly different depending on the geographic and socio-economic setting. Minniti and Naudé (2010) add that the complexity of women’s entrepreneurship is also influenced by the differing levels of support and barriers faced by women in various regions like limited market information, low levels of education and skills, and discrimination based on gender and ethnicity are the major barriers that IFE struggle with throughout their business lifecycle (Chiplunkar & Goldberg, 2021).

In recent years, there has been a discernible shift, and scholarly research is increasingly demonstrating the profound impact that innovation is exerting in this domain. Digital platforms have emerged as a critical tool for women entrepreneurs, facilitating market access and business management. Langowitz and Minniti (2007) discuss the impact of

technology on empowering women entrepreneurs, particularly in developing economies. Similarly, Coleman and Robb (2009) explore how online platforms have allowed women entrepreneurs to overcome traditional barriers and access new markets.

Despite the opportunities presented by technology, women entrepreneurs still face unique challenges. The work of Jamali (2009) reveals that women entrepreneurs often struggle with issues such as limited access to funding, societal stereotypes, and balancing work and family responsibilities. These challenges are echoed in the research of Carter et al. (2007), who argue that these barriers can significantly impact the growth and sustainability of women-owned businesses.

The complexity of women's entrepreneurship is further evidenced by its economic impact. Terjesen and Amorós (2010) examine the contribution of women entrepreneurs to economic development and job creation, highlighting the positive effects of supporting women in business. Brush et al. (2012) also emphasize the role of women entrepreneurs in innovating and driving economic growth in both developed and developing countries.

In conclusion, women's entrepreneurship, like food delivery, is a complex and evolving phenomenon. The diverse models and approaches within women's entrepreneurship contribute to its intricacy, making it a non-linear and dynamic field. From the existing literature, it is clear that women's entrepreneurship is not just about starting and running a business; it encompasses a broader spectrum of activities influenced by various socio-economic and cultural factors

Purpose of the paper. This study aims to highlight the importance of a holistic approach that considers the specificities of informal female entrepreneurship and the pivotal role of education in promoting a transition towards more formal and recognized entrepreneurial practices. The research hypothesis is predicated on the role of entrepreneurial education as crucial in providing women with the necessary tools to navigate and thrive in such complex contexts. The cornerstone of this research paper will be the detailed analysis of the case study based on the AWE program, aimed at outlining the dynamics of informal female entrepreneurship and the contribution of entrepreneurial education in facilitating the transition towards formalized and well-structured entrepreneurial activities. The research intends to offer a deeper understanding of how entrepreneurial training can act as a catalyst for the economic and entrepreneurial emancipation of women in contexts marked by complex challenges and opportunities. In summary, this study will contribute to the academic debate on female entrepreneurship and entrepreneurial education, offering practical insights for policies and programs aimed at supporting female entrepreneurs in contexts of high complexity.

RQ: How can entrepreneurial education influence the transition of informal female businesses towards their formalization in complex contexts?

Methodology. Through an exploratory qualitative analysis, this research seeks to analyze the case of the AWE (Academy for Women Entrepreneurs) program, particularly focusing on the edition held in Naples, an initiative dedicated to supporting female entrepreneurship through targeted educational pathways.

Through semi-structured interviews and narrative analysis, tools already employed in the literature on women's entrepreneurship (Garcia, 2013; Topimin et al., 2023), this study will explore the experiences of the participants and organizers of the course. The aim is to understand the type of support offered and the effect that this support has in addressing specific gaps previously dictated by complex starting situations and backgrounds.

The methodology section of this research paper will introduce a structured framework of questions designed to elicit detailed insights into the experiences of participants and organizers within the AWE program.

The interviews encompass a dual-layered approach. The first layer has already been conducted with the program's board in Naples. The second layer of interviews will take place subsequently and will be administered to the same students of the program in order to compare the initial outcomes with the subsequent feedback from the students of the Naples course. The inquiry will explore the diverse backgrounds of the participants and the envisioned development trajectories for their businesses, paying particular attention to the initial conditions and backgrounds that underscore the complexities of their originating contexts.

Identification of the questions of interviews are based on "complexity elements" based on the literature on complexity:

E.1 Social economic barriers (De Bruin, 2007) such as the need to carry out extra-entrepreneurial work to ensure the satisfaction of primary needs. This can limit the time and energy available to engage in entrepreneurial activity

E. 2 Cultural Barriers (Chiplunkar & Goldberg, 2021). Gender stereotypes, social expectations, and discrimination can negatively influence perceptions of women's entrepreneurial skills and limit access to business opportunities.

E. 3 Barriers to accessing support, mentoring, and advice (Minniti and Naudé, 2010). The lack of support networks, both formal and informal, and mentoring opportunities specifically geared toward women entrepreneurs can limit their access to advice, resources, and networking opportunities.

E. 4 Barriers to accessing credit (Jamali, 2009). Gender discrimination can lead to fewer opportunities to obtain loans, investments, or other forms of financial support.

E. 5 Level of knowledge and access to new technologies (Coleman and Robb, 2009). Lack of confidence in using Digital platforms and other technologies has emerged as a fundamental tool for women entrepreneurs that do not facilitate market access and business management.

This table encapsulates the primary questions that will be posed to the participants of the AWE course and the organizing body. The questions are linked to the respective five elements identified previously.

Tab. 1: Key Questions to pose to Learners and Members of the AWE Program in Naples

1. *Socio-economic Barriers: “How do your extra-entrepreneurial responsibilities, such as work to ensure basic needs, affect the time and energy you can dedicate to your entrepreneurial activities?”*
2. *Cultural Barriers: “In what ways have gender stereotypes, social expectations, or discrimination impacted your perception as an entrepreneur and access to business opportunities?”*
3. *Barriers to Accessing Support, Mentoring, and Advice: “Can you describe any challenges you’ve faced in finding support networks, formal or informal mentoring, and advice specifically geared towards women entrepreneurs?”*
4. *Barriers to Accessing Credit: “Have you experienced challenges in securing loans, investments, or other forms of financial support due to gender discrimination? Please share your experience.”*
5. *What challenges have you encountered using digital platforms and new technologies for market access and business management?*

Results. *In the preliminary results, we introduce the main contents of the case study under examination.*

The Academy for Women Entrepreneurs (AWE) gives enterprising women the knowledge, networks and access they need to launch and scale successful businesses.

This program aims to support women in creating and developing entrepreneurial ventures by providing online and onsite training, mentorship, pitch competitions, and networking opportunities. Targeting women between the ages of 18 and 40, AWE emphasizes the importance of innovation and women entrepreneurship on the social or environmental impact of businesses, in alignment with the United Nations Sustainable Development Goals. The program’s three primary objectives are: 1) To offer online educational resources and local support from U.S. exchange alumni, academics, and entrepreneurial leaders. 2) To foster partnerships and collaborations through mentoring, business contacts, and opportunities with Italian and U.S. enterprises. 3) To provide access to a network of Exchange Alumni and resources for women’s economic empowerment.

The selection process of the Academy for Women Entrepreneurs consists of two phases: initially, aspiring entrepreneurs submit a written description and, if they wish, a video of their business project. Subsequently, an oral interview assesses the applicant’s motivation, proficiency in English, digital skills, and the viability of the business idea. Candidates, who may apply individually or as a group, are selected based on the commitment and innovative and sustainable potential of their entrepreneurial proposals.

The primary and most significant aspects of the AWE program and its manifestation in the first Italian edition held in Naples, in collaboration with the University of Naples Federico II, are presented. These initial descriptive findings will be subsequently supported by the outcomes of interviews, which will be conducted as already described in the methodology section.

The Academy for Women Entrepreneurs (AWE) is an initiative of the U.S. Department of State managed in Italy by the University of Naples Federico II, where it also held its first edition.

Building upon the foundational description provided, the remainder of our results will be primarily derived from the responses obtained through interviews with AWE participants, complemented by insights from the program’s organizational members. This qualitative data will illuminate the study in two critical areas:

Firstly, we will delve into which specific dimensions of complexity are perceived to be alleviated through the participants’ engagement with the AWE educational pathway. This exploration aims to identify how the program’s components - spanning online and onsite training, mentorship, and networking opportunities -might reduce the multifaceted challenges women entrepreneurs face.

Secondly, the research will assess the extent to which participation in the AWE program is seen as a catalyst in transitioning toward the formalization of business endeavors. By examining the participants’ perceptions and experiences, this part of the study seeks to ascertain whether the AWE initiative effectively supports women in moving their entrepreneurial projects from the informal to the formal sector.

This structured inquiry is designed to offer a nuanced understanding of the impact of entrepreneurial education in fostering the growth and formalization of female-led enterprises, especially those emerging from complex and diverse backgrounds. Through this lens, we aim to contribute valuable insights into the effectiveness of initiatives like AWE in empowering women entrepreneurs and promoting sustainable economic development in line with the United Nations Sustainable Development Goals.

Research limitations. *In order to investigate how entrepreneurship education can influence the transition of informal women’s businesses towards their formalization in complex contexts, this work analyzed participants in the AWE programme. Although this program is specific to this topic, it takes on a specific aspect also linked to an equally specific territory, where the course is carried out. The work could then be extended by analyzing participants from other similar programmes, in different contexts.*

Managerial implications. *Based on the initial dialogue with the scientific board and the preliminary questions that we posed to them we expect this research to highlight a series of factors linked to informal female entrepreneurship within the analyzed program, attributable to a generic scope of the topic. First of all, to highlight how many participants have never had entrepreneurial experience before. We expect that a substantial number of subjects will have had informal entrepreneurial experiences, which in some cases later became formal. The need for participating subjects to benefit from preparation underlying their activities will be underlined, showing that this could lead to positive impacts on activities*

already underway. We will also highlight the main barriers linked to entrepreneurship, which often discourage the transition from informal to formal: the weight of taxation and bureaucracy should push young entrepreneurs to want to experiment with the dynamics linked to an informal market first, taking on fewer risks on invested capital. Given the complex scenario in which the program participants operate, i.e. that of the South, there should be a lack of skills and competencies capable of exploiting the resources made available by the institutions to face the difficulties of these complex environments: a paradox given that bureaucracy and administrative complexities often prove to be the first obstacles to overcoming the difficulties of these markets. In this sense, the usefulness of programs such as AWE is therefore underlined, capable of allowing formal and informal female entrepreneurs to access resources specifically dedicated to them. As regards informal entrepreneurial activities, the program should develop the will to formalize these activities, seize a greater number of entrepreneurial opportunities, respect the development of a network of stakeholders, and above all respecting being able to receive resources, including economic ones, which can have a strong impact on the growth of their entrepreneurial realities, abandoning a dimension of informality in favor of recognized entrepreneurship

Originality of the paper. Several works have analyzed informal education and entrepreneurship, especially through university-type training courses. This work instead offers a more specific vision, focused on the transition from informal to formal entrepreneurship, through such a training course.

References

- AFREH B., RODGERS P., VERSHININA N., WILLIAMS C.C. (2019), “Varieties of context and informal entrepreneurship: entrepreneurial activities of migrant youths in rural Ghana”, *International Journal of Entrepreneurial Behavior & Research*, vol. 25, n. 5, pp. 996-1013.
- ALBORNOZ PARDO C. (2013), “Is business creation the mean or the end of entrepreneurship education?: a multiple case study exploring teaching goals in entrepreneurship education”, *Journal of technology management & innovation*, vol. 8, n. 1, pp. 1-10.
- AUTIO E., FU K. (2015), “Economic and political institutions and entry into formal and informal entrepreneurship”, *Asia Pacific Journal of Management*, vol. 32, pp. 67-94.
- BISCHOFF K., VOLKMANN C.K., AUDRETSCH D.B. (2018), “Stakeholder collaboration in entrepreneurship education: an analysis of the entrepreneurial ecosystems of European higher educational institutions”, *The Journal of Technology Transfer*, vol. 43, pp. 20-46.
- BOAFO C., CATANZARO A., DORNBERGER U. (2022), “International entrepreneurship in Sub-Saharan Africa: interfirm coordination and local economy dynamics in the informal economy”, *Journal of Small Business and Enterprise Development*, (ahead-of-print).
- BRUSH C.G., DE BRUIN A., WELTER F. (2009), “A gender-aware framework for women’s entrepreneurship”, *International Journal of Gender and Entrepreneurship*, vol. 1, n. 1, pp. 8-24.
- BU J., CUERVO-CAZURRA A. (2020), “Informality costs: Informal entrepreneurship and innovation in emerging economies”, *Strategic Entrepreneurship Journal*, vol. 14, n. 3, pp. 329-368.
- BUREAU S., FENDT J. (2011), “Entrepreneurship in the informal economy: why it matters”, *The International Journal of Entrepreneurship and Innovation*, vol. 12, n. 2, pp. 85-94.
- CANNON T. (2008), “Silver entrepreneurship: new days, new ways”, *Working with Older People*, vol. 12, n. 2, pp. 30-33.
- CARTER S., MWAURA S., RAM M., TREHAN K., JONES T. (2007), “Gender and entrepreneurship: Advancing debate and challenging myths; exploring the mystery of the under-performing female entrepreneur”, *International Journal of Entrepreneurial Behavior & Research*, vol. 13, n. 1, pp. 21-35.
- CHIPLUNKAR G., GOLDBERG P. K. (2021), *Aggregate implications of barriers to women entrepreneurship* (No. w28486), National Bureau of Economic Research.
- COLEMAN S., ROBB A. (2009), “A comparison of new firm financing by gender: Evidence from the Kauffman Firm Survey data”, *Small Business Economics*, vol. 33, n. 4, pp. 397-411.
- DE BRUIN A., BRUSH C. G., WELTER F. (2007), “Advancing a framework for coherent research on women’s entrepreneurship”, *Entrepreneurship Theory and Practice*, vol. 31, n. 3, pp. 323-339.
- FAYOLLE A., GAILLY B. (2015), “The impact of entrepreneurship education on entrepreneurial attitudes and intention: Hysteresis and persistence”, *Journal of small business management*, vol. 53, n. 1, pp. 75-93.
- GARCÍA M. C. D., WELTER F. (2013), “Gender identities and practices: Interpreting women entrepreneurs’ narratives”, *International Small Business Journal*, vol. 31, n. 4, pp. 384-404.
- GRECO F., CARIGNANI F., IODICE G., BIFULCO F. (2023), “Women’s Entrepreneurship as a Driver of Diversity Management in Italian Businesses”, In *Female Entrepreneurship as a Driving Force of Economic Growth and Social Change* (pp. 73-89), IGI Global.
- HAHN D., MINOLA T., BOSIO G., CASSIA L. (2020), “The impact of entrepreneurship education on university students’ entrepreneurial skills: a family embeddedness perspective”, *Small Business Economics*, vol. 55, pp. 257-282.
- HONIG B., MARTIN B. (2014), “Entrepreneurship education”, In *Handbook of research on entrepreneurship* (pp. 127-146), “Edward Elgar Publishing.
- HORODNIC I.A., WILLIAMS C.C. (2018), “Evaluating policy approaches for tackling informal entrepreneurship”, *Journal of Small Business and Enterprise Development*, vol. 26, n. 4, pp. 595-611.
- HUGHES K.D., JENNINGS J.E., BRUSH C., CARTER S., WELTER F. (2012), “Extending women’s entrepreneurship research in new directions”, *Entrepreneurship Theory and Practice*, vol. 36, n. 3, pp. 429-442.

- IGWE P.A., ODUNUKAN K., RAHMAN M., RUGARA D.G., OCHINANWATA C. (2020), "How the entrepreneurship ecosystem influences the development of frugal innovation and informal entrepreneurship", *Thunderbird International Business Review*, vol. 62, n. 5, pp. 475-488.
- JAMALI D. (2009), "Constraints and opportunities facing women entrepreneurs in developing countries: A relational perspective", *Gender in Management: An International Journal*.
- JIMÉNEZ A., PALMERO-CÁMARA C., GONZÁLEZ-SANTOS M.J., GONZÁLEZ-BERNAL J., JIMÉNEZ-EGUIZÁBAL J.A. (2015), "The impact of educational levels on formal and informal entrepreneurship", *BRQ Business Research Quarterly*, vol. 18, n. 3, pp. 204-212.
- KLEIN K. (2017), "Entrepreneurship, identity, and the transformation of marketing systems: Medical cannabis in California", *Journal of Macromarketing*, vol. 37, n. 1, pp. 85-101.
- LAING E., VAN STEL A., STOREY D.J. (2021), "Formal and informal entrepreneurship: a cross-country policy perspective", *Small Business Economics*, vol. 10, pp. 8-8.
- LANGOWITZ N., MINNITI M. (2007), "The entrepreneurial propensity of women", *Entrepreneurship Theory and Practice*, vol. 31, n. 3, pp. 341-364.
- MADICHIE N.O., AGU A.G. (2023), "The role of universities in scaling up informal entrepreneurship", *Industry and Higher Education*, vol. 37, n. 1, pp. 94-109.
- MALLON M.R., FAINSHMIDT S. (2022), "Who's hiding in the shadows? Organized crime and informal entrepreneurship in 39 economies", *Journal of Management*, vol. 48, n. 1, pp. 211-237.
- MINNITI M., NAUDÉ W. (2010), "What do we know about the patterns and determinants of female entrepreneurship across countries?", *European Journal*
- MUHAMMAD S., KONG X., SAQIB S.E., BEUTELL N.J. (2021), "Entrepreneurial income and wellbeing: Women's informal entrepreneurship in a developing context", *Sustainability*, vol. 13, n. 18, 10262.
- NIEUWENHUIZEN C., GROENEWALD D., DAVIDS J., VAN RENSBURG L.J., SCHACHTEBECK C. (2016), "Best practice in entrepreneurship education", *Problems and Perspectives in Management*, vol. 14, n. 3, pp. 528-536
- OMRI A. (2020), "Formal versus informal entrepreneurship in emerging economies: The roles of governance and the financial sector", *Journal of Business Research*, vol. 108, pp. 277-290.
- PASSARO R., QUINTO I., THOMAS A. (2018), "The impact of higher education on entrepreneurial intention and human capital", *Journal of Intellectual Capital*, vol. 19, n. 1, pp. 135-156.
- RASHID S., RATTEN V. (2020), "A systematic literature review on women entrepreneurship in emerging economies while reflecting specifically on SAARC countries. Entrepreneurship and organizational change", *Managing innovation and creative capabilities*, pp. 37-88. of *Development Research*, vol. 22, n. 3, pp. 277-293.
- SALVI E., BELZ F.M., BACQ S. (2023), "Informal entrepreneurship: An integrative review and future research agenda", *Entrepreneurship Theory and Practice*, vol. 47, n. 2, pp. 265-303.
- SIQUEIRA A.C.O., WEBB J.W., BRUTON G.D. (2016), "Informal entrepreneurship and industry conditions", *Entrepreneurship Theory and Practice*, vol. 40, n. 1, pp. 177-200
- TERJESEN S., AMORÓS J.E. (2010), "Female Entrepreneurship in Latin America and the Caribbean: Characteristics, Drivers and Relationship to Economic Development", *European Journal of Development Research*, vol. 22, n. 3, pp. 313-330
- THAI M.T.T., TURKINA E. (2014), "Macro-level determinants of formal entrepreneurship versus informal entrepreneurship", *Journal of Business Venturing*, vol. 29, n. 4, pp. 490-510.
- THAPA KARKI S., XHENETI M., MADDEN A. (2021), "To formalize or not to formalize: women entrepreneurs' sensemaking of business registration in the context of Nepal", *Journal of Business Ethics*, vol. 173, pp. 687-708.
- TOPIMIN S., FABEL N.F., HASAN H., LIM B. (2023), "Entrepreneurship and Motherhood: A Narrative Analysis of a Woman Entrepreneur", In *Finance, Accounting and Law in the Digital Age: The Impact of Technology and Innovation in the Financial Services Sector* (pp. 407-417), "Cham: Springer International Publishing.
- VOINEA C.L., LOGGER M., RAUF F., ROIJAKKERS N. (2019), "Drivers for sustainable business models in start-ups: Multiple case studies", *Sustainability*, vol. 11, n. 24, pp. 6884.
- WEBB J. W., KHOURY T. A., HITT M. A. (2020), "The influence of formal and informal institutional voids on entrepreneurship", *Entrepreneurship Theory and Practice*, vol. 44, n. 3, pp. 504-526.
- WELTER F., SMALLBONE D., POBOL A. (2015), "Entrepreneurial activity in the informal economy: a missing piece of the entrepreneurship jigsaw puzzle", *Entrepreneurship & Regional Development*, vol. 27, n. 5-6, pp. 292-306.
- VANEVENHOVEN J. (2013), "Advances and challenges in entrepreneurship education", *Journal of small business management*, vol. 51, n. 3, pp. 466-470.
- WILLIAMS C. (2014), *Informal sector entrepreneurship*, OECD Centre for Entrepreneurship, SMEs and Local Development.
- WILLIAMS C. C. (2009), "Informal entrepreneurs and their motives: a gender perspective", *International journal of gender and entrepreneurship*.

Fostering Entrepreneurial Thinking: Analysing the Drivers and Impact of Entrepreneurship Education

DARIO PEIRONE¹ JUDY SONG²

Abstract

This working paper examines the drivers and impacts of entrepreneurship education on fostering entrepreneurial thinking, focusing on its implementation and outcomes at the University of Turin. As the global economy shifts towards knowledge-based innovation, universities play a pivotal role in promoting entrepreneurship as a key driver for economic growth and sustainable development. The University of Turin exemplifies this transformation by offering programs that engage students in practical, experiential learning scenarios, thereby enhancing their entrepreneurial skills and intentions.

Through a comprehensive literature review, this ongoing study highlights the evolving role of universities in the entrepreneurship ecosystem, emphasizing the significance of entrepreneurship education in facilitating knowledge transfer, innovation, and societal well-being. Employing a unique dataset from the University of Turin, coupled with detailed questionnaires, the study adopts empirical analysis to investigate the effects of various factors—including individual student characteristics and pedagogical approaches—on entrepreneurial intentions and skill acquisition.

The initial findings reveal that while demographic factors such as gender and age have nuanced effects, the educational background, field of study, and pedagogical methods significantly influence students' entrepreneurial outcomes. Practical, hands-on learning experiences are shown to be particularly effective in enhancing entrepreneurial intentions and facilitating the transition from academic knowledge to real-world entrepreneurial engagement. Additionally, the university's entrepreneurial reputation and students' motivations emerge as crucial factors in the successful acquisition of entrepreneurial skills and competencies.

The paper concludes by advocating for a multi-dimensional pedagogical strategy that combines practical insights, motivational clarity, and exposure to real entrepreneurial challenges. This approach is essential for equipping students with the necessary skills and competencies, instilling the confidence and drive to pursue entrepreneurial ventures. The study underscores the importance of inclusive and integrative educational practices in cultivating the next generation of entrepreneurial leaders, contributing to economic growth and innovation. Through its analysis of the University of Turin's entrepreneurship education offerings, this paper offers valuable insights for educators, policymakers, and institutions aiming to foster a more entrepreneurial society.

Key words: Entrepreneurship, entrepreneurship education

Framing of the research. *The framework for ongoing research explores the complex interplay between entrepreneurship education and its effects on students' entrepreneurial intentions, activities, and skill acquisition. It emphasizes the crucial role of experiential learning and the influence of individual characteristics, pedagogical approaches, and the entrepreneurial ecosystem in shaping entrepreneurial outcomes.*

The literature review of this area sets a robust foundation, highlighting the evolution of universities into entrepreneurial entities that not only impart knowledge but also act as catalysts for economic development and innovation. The nexus of technology transfer and entrepreneurship underscores the shift towards open innovation and the strategic role of universities in the knowledge economy. Selecting the University of Turin, one of Italy's largest universities, stands out for its comprehensive array of entrepreneurship courses, the diverse backgrounds of its student body, and numerous entrepreneurial initiatives.

The inclusion of comprehensive datasets and descriptive analysis further enriches the study, offering a detailed understanding of the demographic, socio-economic, and educational backgrounds of the participants. This empirical foundation enables a thorough investigation of the variables influencing entrepreneurship education outcomes, providing a solid basis for the econometric analysis.

The ongoing study's focus on the symbiosis between entrepreneurship education and entrepreneurial intention is particularly insightful. It highlights the significant role of education in shaping students' entrepreneurial mindsets and

¹ University of Turin
e-mail: dario.peirone@unito.it

² University of Turin
e-mail: judyyuehling.song@unito.it

intentions, emphasizing the importance of fostering an entrepreneurial culture within the educational ecosystem. The exploration of the distinctiveness of the study, through its focus on psychological, demographic, and educational factors, adds a unique dimension to the research, promising to contribute significantly to the field of entrepreneurship education.

The diverse program description and dataset elucidation provide a clear understanding of the research scope and the specific areas of focus, laying the groundwork for a comprehensive analysis of the impact of entrepreneurship education in the academic environment. This approach not only highlights the institution's role in nurturing future entrepreneurs, but it can also help to create a model for assessing the effectiveness of entrepreneurship education programs.

By integrating theoretical perspectives with empirical evidence, this study promises to contribute significantly to the understanding of how entrepreneurship education can be optimized to support economic growth and innovation, making it a valuable addition to the fields of entrepreneurship, education, and policy development.

The methodological approach, employing an empirical approach by using students' responses and regression analysis—multiple linear regression and logistic regression—allows to get insights on the factors influencing students' entrepreneurial intentions and future entrepreneurship pursuits, as well as to understand the effectiveness of different pedagogical methods.

Purpose of the paper. Moving beyond the conventional emphasis on personal traits, this study expands the analysis to incorporate psychological and demographic factors, thereby providing a richer understanding of the forces driving entrepreneurial aspirations. A novel aspect of our research is the focus on the role of educational programs in enhancing students' entrepreneurial skills, a critical area that has not been sufficiently explored in previous studies.

Adopting a holistic approach, the research evaluates not only the inclination of students towards entrepreneurship but also the interplay of subjective characteristics and personal factors in influencing their entrepreneurial ambitions. This includes examining the significance of educational experiences in equipping students with the skills essential for successful entrepreneurship and evaluating the impact of environmental factors, such as gender and family background, on the efficacy of entrepreneurship education.

The paper further aims to offer a long-term perspective on the outcomes of entrepreneurship education by analysing actual entrepreneurial endeavours undertaken by students' post-education. Through the examination of the entrepreneurship courses at the University of Turin, the study provides valuable insights into the local entrepreneurial ecosystem, underscoring the importance of this research within the context of Italy's academic and entrepreneurial sectors.

Key inquiries addressed in this paper include:

1. The impact of individual characteristics on students' entrepreneurial intentions.
2. The contribution of entrepreneurship education to students' engagement in entrepreneurial activities.
3. The effectiveness of various teaching methods employed in entrepreneurship courses in fostering an entrepreneurial culture.
4. The identification of skills acquired through these courses that prove beneficial for students in their future entrepreneurial pursuits.

Methodology. The ongoing research paper employed data collected based on the questionnaires sent to a total population of 1550 students of which a representative sample of 223 responses was successfully obtained for the empirical analysis of our dataset. The questionnaires employed in this analysis were designed to encompass a wide array of data, (including personal information, educational background, disciplinary specializations, career aspirations, entrepreneurial intentions, acquired skills, entrepreneurial experiences, training received, and university evaluations), following the existing literature addressing entrepreneurial intentions and skills (Hahn et al., 2020; Leung et al., 2012; Hahn et al., 2020).

Additionally, the questionnaire was customized to specifically target students who had completed entrepreneurship training several years prior, encompassing inquiries into whether specific educational backgrounds or individual characteristics correlate with a stronger inclination towards entrepreneurship pursuit.

In our effort to derive meaningful insights from the amassed questionnaire data, we have employed a robust analytical framework leveraging two distinct statistical methodologies: multiple linear regression and logistic regression. This is to delve deeper into the interplay of variables and enhance our capacity for data-driven predictions. We aim to use these statistical tools to shed light on the research questions highlighted in the section of purpose of the paper.

Results. The analysis of questionnaires from the entrepreneurship education programs at the University of Turin uncovers several key insights into student engagement, backgrounds, motivations, and perceptions regarding these courses.

The descriptive findings shows that the DI course, serving as a cornerstone of theoretical entrepreneurship education, has demonstrated its capacity to attract a substantial number of students, indicative of its foundational role and broad appeal. In contrast, the more hands-on SCL and Clab courses, despite their lower enrollment numbers, underscore a distinct student preference for practical, experiential learning, limited by their capacity and entry requirements.

Demographically, the entrepreneurship programs have drawn a diverse cohort of students, spanned a wide age range and included equal genders representation. This diversity reflects the university's capacity to appeal to a broad audience, from undergraduates to postgraduates and professionals, suggesting a widespread interest in entrepreneurship across various stages of educational and professional development.

The study also delves into the socio-economic and familial backgrounds of the students, offering insights into how entrepreneurship education might level the playing field for aspiring entrepreneurs from diverse backgrounds. Despite

the mixed evidence on the impact of family entrepreneurial backgrounds on students' intentions, the data suggests that such education can empower students from all walks of life to explore and engage in entrepreneurial endeavors.

Furthermore, the wide academic diversity among students enrolled in entrepreneurship courses highlights the University of Turin's success in fostering an entrepreneurial mindset across different fields of study. The inclusion of students with prior work experience underscores the proactive nature of these individuals towards entrepreneurship, reflecting the program's role in nurturing entrepreneurial ambitions.

Students' motivations for enrolling in entrepreneurship courses are primarily driven by the desire to acquire practical skills and knowledge, as well as aspirations towards self-employment and autonomy. This indicates that students view these courses as essential stepping stones towards achieving their entrepreneurial ambitions, rather than mere academic exercises.

The assessment of students' entrepreneurial behavior and career aspirations has revealed a strong inclination towards self-employment and entrepreneurial activities. Such findings suggest the effectiveness of the courses in instilling entrepreneurial aspirations and equipping students with the mindset and skills necessary for entrepreneurial success.

Student feedback on the courses has been overwhelmingly positive, particularly praising their interdisciplinary approach, practical insights, and exposure to real-world scenarios. However, the demand for more interactive and practical components within the curriculum points to areas for potential enhancement, ensuring that the programs continue to meet the evolving needs of aspiring entrepreneurs effectively.

Lastly, the findings of the questionnaires show the generally positive perceptions of the university's entrepreneurial ecosystem by the students highlight a supportive environment for entrepreneurship education in the university. Nonetheless, opportunities for further development, especially in external collaboration and international partnerships, could further solidify the University of Turin's reputation as a leader in the field of entrepreneurship education.

The preliminary results derived from our initial regression delve into the intricacies of how various factors influence students' journey through entrepreneurship education, from the initial formation of entrepreneurial intentions to post-training entrepreneurial activities, and ultimately, the acquisition of crucial skills and competencies. Each phase of the regression analysis uncovers preliminary insights into the dynamic interplay between a multitude of influencing variables, providing an early look at the potential pathways through which entrepreneurship education moulds student outcomes.

The first stage of our regression analysis lays the groundwork by examining an expansive set of variables and their influence on students' entrepreneurial intentions. This initial model integrates a wide range of factors, encompassing socio-demographic variables, academic and work experiences, and extends to explore students' motivations for enrolling in entrepreneurship programs. In the exploration into what shapes students' entrepreneurial intentions, our initial analysis reveals that while traditional demographic factors like gender, age, and family background have a role, their impact is subtle. We notice that the educational factors and experiential variables significantly elevate the model's explanatory power, underscoring the critical influence of academic preparation and personal motivations on fostering entrepreneurial mindsets.

Interestingly, parental entrepreneurship does not wield the expected influence, suggesting a departure from the assumed legacy effect in entrepreneurial inclination. Hence, the preliminary nature of these results highlights the complexity of entrepreneurial intention formation, suggesting that both inherent personal traits and the acquired experiences from education contribute significantly to shaping students' entrepreneurial aspirations.

Our second regression model provides early insights into the relatively underexplored area of post-training entrepreneurial activities. Post-training entrepreneurial activities are less about demographic specifics and more about the complex interplay of educational experiences, field of study, and practical exposure. The initial findings suggest that attributes such as the level of education and specific learning experiences within entrepreneurship programs play decisive roles. Practical, hands-on pedagogical methods notably outshine purely theoretical ones in fostering the transition from intention to actual entrepreneurial engagement. The comparison between theoretical and practical approaches reveals a definitive lean towards the efficacy of experiential learning. Practical courses significantly bolster students' likelihood to pursue entrepreneurship, offering tangible skills and real-world insights that theoretical courses cannot match in isolation. This emphasizes the necessity of integrating practical experiences into entrepreneurship education to bridge the gap between academic knowledge and entrepreneurial action.

Our third regression analysis addresses a notable gap in existing literature by focusing on the acquisition of skills and competencies through entrepreneurship education. This initial exploration is particularly important for its emphasis on a critical yet often overlooked aspect of entrepreneurship education—its effectiveness in equipping students with the necessary skills for entrepreneurial success. The determination of acquired skills and competencies underscores a complex interaction between individual characteristics and educational contexts. While gender and educational background exhibit some influence, the broader educational environment, and motivations for engaging in entrepreneurship education emerge as powerful drivers. The significance of the university's entrepreneurial reputation and the targeted motivations for learning new skills highlight the importance of an encouraging, resource-rich educational ecosystem in enhancing skill acquisition. These early insights underscore the importance of a supportive and resource-rich educational environment, as reflected in the perceived reputation of the university, in enhancing the educational outcomes of entrepreneurship programs.

Collectively, these initial regression analyses offer a valuable glimpse into the potential effects of entrepreneurship education on various student outcomes. By presenting these findings as preliminary, we acknowledge the exploratory

nature of our analysis and the need for further research to validate and deepen our understanding of these complex dynamics. These early results serve as a foundation for future investigations into the roles that individual characteristics, educational experiences, and motivational factors play in the broader landscape of entrepreneurship education.

Across all analyses, a common theme emerges entrepreneurship education's effectiveness hinges not solely on imparting knowledge but on creating an integrative learning experience that combines practical insights, motivational clarity, and exposure to real entrepreneurial challenges. This holistic approach not only equips students with the necessary skills and competencies but also instils the confidence and drive to translate entrepreneurial intentions into tangible ventures. The initial findings collectively advocate for detailed understanding of the entrepreneurship education landscape, urging educators, policymakers, and institutions to adopt a multi-dimensional pedagogical strategy that resonates with diverse student aspirations and learning styles.

Research limitations. The study acknowledges certain limitations, including the reliance on self-reported data, which may introduce biases. The specific focus on the University of Turin also limits the generalizability of the findings across different institutional and cultural contexts. Furthermore, the evolving nature of entrepreneurship education and the external economic and social factors influencing entrepreneurial intentions and activities necessitate continuous research in this field.

Managerial implications. The initial findings highlight the importance of integrating practical and experiential learning in entrepreneurship education at the University of Turin, underscoring the potential for such approaches to significantly improve entrepreneurial intentions and activities among students. The findings seem to also suggest that university administrators and educators should focus on tailoring entrepreneurship programs to the diverse needs of students, leveraging the institution's reputation to enhance the effectiveness of these programs. By emphasizing hands-on, real-world experiences and aligning educational offerings with the motivations and backgrounds of students, universities can foster a more robust and inclusive entrepreneurial ecosystem. This approach not only promises to elevate the quality and impact of entrepreneurship education but also serves as a strategic guide for enhancing entrepreneurship skills within the educational domain.

Originality of the paper. The originality of this paper is anchored in its comprehensive examination of the impact of entrepreneurship education, extending beyond entrepreneurial intentions to encompass actual entrepreneurial actions post-training. This exploration not only bridges a notable gap within existing literature but also enriches the dialogue around the practical outcomes of entrepreneurship education. A distinguishing aspect of this research is its investigation into the impact of different teaching approaches, highlighting how varied pedagogical strategies influence skill acquisition and entrepreneurial engagement. Additionally, the study innovatively identifies specific individual characteristics that amplify the effectiveness of entrepreneurial education, offering insights into personalized educational experiences. This dual focus on the tangible outcomes of entrepreneurship education and the interplay of personal attributes and pedagogical methods provides a robust framework for designing more impactful educational programs. Consequently, the paper offers a new perspective on optimizing entrepreneurship education to foster not only intention but also action within the entrepreneurial domain, presenting a complex exploration of the mechanisms through which education catalyses real-world entrepreneurial success.

References

- AJZEN I. (1991), "The theory of planned behavior", *Organizational Behavior and Human Decision Processes*, vol. 50, n. 2, pp. 179-211.
- ARMITAGE C.J., CONNER M. (2001), "Efficacy of the theory of planned behaviour: A meta-analytic review", *British Journal of Social Psychology*, vol. 40, n. 4, pp. 471-499.
- AUDRETSCH D.B. (2014), "From the entrepreneurial university to the university for the entrepreneurial society", *The Journal of Technology Transfer*, vol. 39, n. 3, pp. 313-321.
- AUDRETSCH D.B., LEHMANN E.E. (2005), "Do University policies make a difference?", *Research Policy*, vol. 34, n. 3, pp. 343-347.
- AUDRETSCH D.B., KEILBACH M. (2004), "Entrepreneurship and regional growth: an evolutionary interpretation", *Journal of Evolutionary Economics*, vol. 14, n. 5, pp. 605-616.
- BAE T.J., QIAN S, MIAO C., FIET J.O. (2014), "The relationship between entrepreneurship education and entrepreneurial intentions: A meta-analytic review", *Entrepreneurship Theory and Practice*, vol. 38, pp. 217- 54.
- BÉCHARD J.P., GRÉGOIRE D. (2005), "Understanding teaching models in entrepreneurship for higher education", In *The Dynamics of Learning Entrepreneurship in a Cross-Cultural University Context*. Edited by Paula Kyrö and Camille Carrier. Tampere: Faculty of Education, University of Tampere, pp. 104-34.
- BIRD B. (1988), "Implementing entrepreneurial ideas: The case for intention", *Academy of management Review*, vol. 13, n. 3, pp. 442-453.
- BRAUNERHJELM P. (2010), *Entrepreneurship, Innovation and Economic Growth-past experience, current knowledge and policy implications*
- CAVALLO A., GHEZZI A., BALOCCO R. (2018a), "Entrepreneurial ecosystem research: Present debates and future directions", *International Entrepreneurship and Management Journal*, pp. 1-31.
- CHESBROUGH H.W. (2006), "The era of open innovation", *Managing innovation and change*, vol. 127, n. 3
- COLOMBO M.G., GRILLI L. (2005), "Founders' human capital and the growth of new technology-based firms: A competence-based view", *Research Policy*, vol. 34, pp. 795-816.

- CURTH A., CHATZICHRISTOU S., DEVAUX A., ALLINSON R. (2015), *Entrepreneurship Education: A Road to Success. A Compilation of Evidence on the Impact of Entrepreneurship Education Strategies and Measures*. Belgium: European Commission.
- D'ESTE P., IAMMARINO S. (2010), "The spatial profile of university-business research partnerships", *Papers in regional science*, vol. 89, n. 2, pp. 335-350.
- DETENNE D.R., CHANDLER G.N. (2004), "Opportunity identification and its role in the entrepreneurial classroom: A pedagogical approach and empirical test", *Academy of management learning & education*, vol. 3, n. 3, pp. 242-257.
- DYER W.G., HANDLER W. (1994), "Entrepreneurship and family business: Exploring the connections", *Entrepreneurship: Theory and Practice*, vol. 19, pp. 71-71.
- EC EUROPEAN COMMISSION. (2006), "Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning", *Official Journal of the European Union*, vol. 30, pp. L394/310.
- ETZKOWITZ H., WEBSTER A., GEBHARDT C., TERRA B.R.C. (2000), "The future of the university and the university of the future: evolution of ivory tower to entrepreneurial paradigm", *Research policy*, vol. 29, n. 2, pp. 313-330.
- ETZKOWITZ H. (2004), "The evolution of the entrepreneurial university", *International Journal of Technology and Globalisation*, vol. 1, 1, pp. 64-77.
- FAYOLLE A., GAILLY B., LASSAS-CLERC N. (2006), "Assessing the impact of entrepreneurship education programmes: A new methodology", *Journal of European Industrial Training*, vol. 30, n. 9, pp. 701-720.
- FAYOLLE A., GAILLY B. (2015) The impact of entrepreneurship education on entrepreneurial attitudes and intention: Hysteresis and persistence", *Journal of Small Business Management*, vol. 53, pp. 75-93.
- FAYOLLE A., LIÑÁN F. (2014), "The future of research on entrepreneurial intentions", *Journal of business research*, vol. 67, n. 5, pp. 663-666.
- GUERRERO M., CUNNINGHAM J.A., URBANO D. (2015), "Economic impact of entrepreneurial universities' activities: An exploratory study of the United Kingdom", *Research Policy*, vol. 44, n. 3, pp. 748-764.
- HAHN D., ET AL. (2017), "Entrepreneurial education and learning at universities: exploring multilevel contingencies", *Entrepreneurship & Regional Development*, vol. 29, n. 9-10, pp. 945-974.
- HONIG B. (2004), "Entrepreneurship education: Toward a model of contingency-based business planning", *Academy of Management Learning & Education*, vol. 3, pp. 258-73.
- KASSEAN H., VANEVENHOVEN J., LIGUORI E., WINKEL D.E. (2015), "Entrepreneurship education: A need for reflection, real-world experience and action", *International Journal of Entrepreneurial Behavior & Research*, vol. 21, pp. 690-708.
- KRUEGER N.F., CARSRUD A.L. (1993), "Entrepreneurial intentions: Applying the theory of planned behaviour", *Entrepreneurship & Regional Development*, vol. 5, n. 4, pp. 315-330.
- KURATKO D.F. (2005), "The emergence of entrepreneurship education: Development, trends, and challenges", *Entrepreneurship theory and practice*, vol. 29, n. 5, pp. 577-597.
- LEYDESDORFF L., ZAWDIE G. (2010), "The Triple Helix Perspective of Innovation System", *Technology Analysis & Strategic Management*, vol. 22, n. 7, pp. 789-804.
- LIÑÁN F., RODRÍGUEZ-COHARD J.C., RUEDA-CANTUCHE J.M. (2011), "Factors affecting entrepreneurial intention levels: a role for education", *International entrepreneurship and management Journal*, vol. 7, n. 2, pp. 195- 218.
- MARESCH D., HARMS R., KAILER N., WIMMER-WURM B. (2016), "The impact of entrepreneurship education on the entrepreneurial intention of students in science and engineering versus business studies university programs", *Technological Forecasting and Social Change*, vol. 104, pp. 172-79.
- MINOLA T., BRUMANA M., CAMPOPIANO G., GARRETT R.P., CASSIA L. (2016a), "Corporate venturing in family business: a developmental approach of the enterprising family", *Strateg Entrep J.*, vol. 10, n. 4, pp. 395-412.
- NABI G., LIÑÁN F., FAYOLLE A., KRUEGER N., WALMSLEY A. (2017), "The impact of entrepreneurship education in higher education: A systematic review and research agenda", *Academy of Management Learning & Education*, vol. 16, pp. 277-99.
- NECK H.M., GREENE P. (2011), "Entrepreneurship Education: Know Worlds and New Frontiers", *J. Small Bus. Manag.*, vol. 49, pp. 55-70.
- PHILPOTT K., ET AL. (2011), "The entrepreneurial university: Examining the underlying academic tensions", *Technovation*, vol. 31, n. 4, pp. 161-170.
- POWERS J.B., MCDUGALL P.P. (2005), "University start-up formation and technology licensing with firms that go public: A resource-based view of academic entrepreneurship", *Journal of Business Venturing*, vol. 20, pp. 291- 311.
- RAUCH A., HULSINK W. (2015), "Putting entrepreneurship education where the intention to act lies: An investigation into the impact of entrepreneurship education on entrepreneurial behaviour", *Academy of Management Learning & Education*, vol. 14, pp. 187-204.
- ROBINSON P.B., STIMPSON D.V., HUEFNER J.C., HUNT K.H. (1991), "An attitude approach to the prediction of entrepreneurship", *Entrepreneurship: Theory and Practice*, vol. 15, n. 4, pp. 13-31.
- SHAPERO A., SOKOL L. (1982), "The social dimensions of entrepreneurship", *Encyclopaedia of Entrepreneurship*, pp. 72-90.
- SIEGEL D.S., WRIGHT M. (2015), "Academic entrepreneurship: Time for a rethink?", *British Journal of Management*, vol. 26, pp. 582-95.
- SUTTON S. (1998), "Predicting and explaining intentions and behavior: How well are we doing?", *Journal of Applied Social Psychology*, vol. 28, n. 15, pp. 1317-1338.
- THOMPSON E.R. (2009), "Individual entrepreneurial intent: Construct clarification and development of an internationally reliable metric", *Entrepreneurship: Theory and Practice*, vol. 33, n. 3, pp. 669-694.
- VAN PRAAG C.M., VERSLOOT P.H. (2007), "What is the value of entrepreneurship? A review of recent research", *Small business economics*, vol. 29, n. 4, pp. 351-382.
- VAN STEL A., CARREE M., THURIK R. (2005), "The effect of entrepreneurial activity on national economic growth", *Small business economics*, vol. 24, n. 3, pp. 311-321.
- VICARI S., CILLO P. (2006), *Developing a brokering capacity within the firm: the enactment of market knowledge. The Future of Knowledge Management*. Palgrave Macmillan, London, pp. 184-204.

- WENNEKERS S., THURIK R. (1999), "Linking entrepreneurship and economic growth", *Small business economics*, vol. 13, n. 1, pp. 27-56.
- WILSON F., KICKUL J., MARLINO D. (2007), "Gender entrepreneurial self-efficacy, and entrepreneurial career intentions: Implications for entrepreneurship education", *Entrepreneurship Theory and Practice*, vol. 31, pp. 387- 406.
- ZHAO H., SEIBERT S.E., HILLS G.E. (2005), "The mediating role of self-efficacy in the development of entrepreneurial intentions", *Journal of Applied Psychology*, vol. 90, n. 6, pp. 1265-1272.

Students' entrepreneurial intentions among personal and contextual factors: a pilot study exploring the role of emotions.

ROSSELLA BARATTA¹ PIERMATTEO ARDOLINO² DIEGO BELLINI³ SERENA CUBICO⁴
FRANCESCA SIMEONI⁵

Abstract

This study explores the relationship between students' entrepreneurial intentions, well-being, future career anxiety, entrepreneurial education, and entrepreneurial networks.

The literature addressing the antecedents of students' entrepreneurial intentions has already demonstrated the importance of combining both personal and contextual factor. However, among personal factors, emotions have received less attention compared to cognitive factors. Emotions affect how individuals process information and therefore positive and negative emotions have a different effect on decision-making. Well-being, as a positive state of mind, has long been considered as an outcome of entrepreneurship, and the few studies addressing the role of well-being as antecedent of entrepreneurial intentions have led to conflicting results. The literature dealing with the role of negative emotions, such as anxiety, is more limited, and has also provided mixed results. In sum, there is a need to better investigate the role of positive and negative emotions on students' entrepreneurial intentions.

This pilot study aims to address these gaps by investigating the relations between well-being, future career anxiety, educational and social factors, and students' entrepreneurial intentions.

The research involved an online survey administered to a sample of 174 Italian university students. Results reveal the following: future career anxiety predicts entrepreneurial intentions, while well-being does not. Educational and social factors are both strong antecedents of students' entrepreneurial intentions.

These findings shed light on the complex interplay between entrepreneurial intentions, emotions, educational and social factors among university students, providing valuable insights for further research and practical implications for entrepreneurship education and promotion.

Key words: Entrepreneurial intentions; emotions; well-being; future career anxiety; entrepreneurial networks; entrepreneurial education.

Framing of the research. Entrepreneurial intentions (EI) are probably the most significant predictor of entrepreneurial activities and behaviors (Krueger et al., 2000). Given the pivotal role of entrepreneurship for economy and innovation (Barba-Sánchez et al., 2022), scholars have long since begun to study the factors that lead individuals to become entrepreneurs and how their intentions to start or own a business are formed (Krueger et al., 2000). Within this stream of research, consistent attention has been paid to students (Lüthje and Franke, 2003; Zhao et al., 2005; Souitaris et al., 2007; Kuckertz and Wagner, 2010; Wagner, 2012; Krueger et al., 2000; Barba-Sánchez et al., 2022; Maheshwari et al., 2023).

A recent review of the literature (Maheshwari et al., 2023) has categorized seven main determinants of students' EI, namely cognitive, personality, environmental, social, educational, contextual, and demographic factors. The review also highlighted the dominant role of cognitive factors within this stream of research.

Entrepreneurship, however, is a “highly emotional journey where the heart as well as the mind plays a central role” (Nikolaev et al., 2019, p. 451). Although the role of emotions in enhancing EI has long been neglected by entrepreneurship research (Foo, 2011), more recently scholars have started paying more attention to affect, moods, emotions, and dispositions (Nikolaev et al., 2019). This stream of literature argues that emotions must be incorporated into the factors

¹ University of Bergamo
e-mail: rossella.baratta@unibg.it

² University of Verona
e-mail: piermatteo.ardolino@univr.it

³ University of Verona
e-mail: diego.bellini@univr.it

⁴ University of Verona
e-mail: serena.cubico@univr.it

⁵ University of Verona
e-mail: francesca.simeoni@univr.it

affecting EI, because affects and cognition are interrelated (Delgado García et al., 2015). Emotions, both positive and negative, influence decision-making because they influence how individuals process information (Foo, 2011; Chen et al., 2021; Podoyunitsyna et al., 2012). For example, in entrepreneurship context, emotions are often associated to risk perceptions. Individuals with positive emotions are more optimistic, and positive emotions can lead individuals to make more positive evaluations of a situation and to take more risks (Foo, 2011), while individuals with negative emotions are more likely to favor pessimistic evaluations and judgments, thereby avoiding risks (Chen et al., 2021; Foo, 2011).

Previous research has demonstrated the usefulness of integrating both contextual and personal factors to investigate the broad range of antecedents that influence entrepreneurial intentions, (Lüthje and Franke, 2003; Nabi et al., 2010; Sesen, 2013; Mustafa et al., 2016). The Lüthje and Franke model (LFM) developed by Lüthje and Franke in 2003 (Maheshwari et al., 2023) argues that both personality traits, such as risk propensity and internal locus of control, and contextual factors, such as perceived barriers and support to entrepreneurship, impact students' entrepreneurial intentions. Similarly, the studies by Sesen (2013) and Mustafa et al. (2016) provide evidence that both personality and environment impact students' entrepreneurial intentions. However, these studies have not considered the role of positive and negative moods and emotions within personality factors. Therefore, this study explores the relationship between students' entrepreneurial intentions, well-being, anxiety, entrepreneurial networks, and entrepreneurial education.

The first factor analyzed in this research is well-being. Psychological well-being describes individuals' positive emotions about their overall human functioning (Aldwin and Revenson 1987). In other words, well-being is defined as a positive state which includes emotions such as happiness, optimism, and vitality (Longo et al., 2017; 2018).

Researchers in entrepreneurial studies are increasingly interested in the psychological well-being of entrepreneurs (Ryff, 2019), however, entrepreneurship literature has often considered well-being as a dependent variable (Ryff, 2019; Margaça et al., 2021), and Wiklund et al. (2019, p. 582) defined entrepreneurial well-being as "the experiences of satisfaction, positive affect, infrequent negative affect, and psychological function in relation to the development, start-up, growth, and management of an entrepreneurial venture". In other words, happiness and well-being are a consequence of entrepreneurial activity.

Well-being is an important entrepreneurial outcome, but at the same time, scholars (Margaça et al., 2021; Wiklund et al., 2019) argue that it may also influence the decision to become entrepreneur. Positive emotions significantly impact individual creativity (Baas et al., 2008), problem solving, and innovation (Rhee, 2006; Yuan and Wu, 2020). Moreover, positive emotions can affect the interpretation of ambiguous situation in a positive direction and lead individuals to overestimate the probabilities of positive outcome and to take more risks (Pérez-Fernández et al., 2020; Foo, 2011). Indeed, research has found that positive moods and emotions, such as optimism, are positively related to students' entrepreneurial intentions (Hernández-Sánchez et al., 2020).

Previous research dealing with entrepreneurship and well-being has noted that well-being can be the antecedent of several important work-related outcomes, such as: productivity (Donald et al., 2005), creativity (Baron and Tang, 2011) and cooperation in the workplace (De Neve et al., 2013).

However, the limited research investigating well-being as a driver of EI has found conflicting results. Some studies have found that students' well-being positively influences their entrepreneurial intentions (Routledge et al., 2021; Sahrah et al., 2023). However, other research has revealed that subjective well-being only indirectly affects entrepreneurial intentions (Contreras-Barraza et al., 2022) or that psychological well-being mediates the relation for female but not for male (Margaça et al., 2021). In addition, other studies found insignificant (Chen et al., 2021) or even negative (Zhang et al., 2015) relations between well-being and entrepreneurial intentions. In this regard, the work by Foo and colleagues has showed that sometimes it is the lack of well-being to enhance the decision to start a business (Foo, 2011; Foo et al., 2009). Similarly, Nikolaev et al. (2019) found that individuals with positive moods and emotions generally do not want to change their life and to enter risky situations.

The second factor analyzed in this research is future career anxiety. Anxiety is defined as a state of mental feeling of tension and worries about the future (Banerjee, 2020). Anxiety is identified as a negative emotion, which lessen intentions to carry out a specific action in several types of behavior, because general fear and anxiety can determine self-efficacy reduction (Arora et al., 2021) and insecure and anxious individuals are generally more uncertain of their ability to address threats (Zelekha et al., 2018).

Previous research has indicated that anxiety influences career development and plays a crucial role in career decision making (Chang, 2011; Tsai et al., 2017). For example, Meredith et al. (2007) found that anxious individuals choose careers mainly on salary criteria, even though this may cause them to experience lower career satisfaction.

As Baron (2008) highlighted, entrepreneurs often navigate environments marked by complexity and uncertainty, which can predispose individuals to negative emotions that tend to promote pessimistic evaluations and risk avoidance (Foo, 2011). Furthermore, these negative emotions can impede the identification and exploitation of business opportunities (Shepherd et al., 2015; Doanh et al., 2021). Consequently, it is possible to argue that future career anxiety may also influence students' entrepreneurial intentions. In the literature, few studies have focused on perceptions derived from an unsafe, dangerous, and risky environment, and the impact these perceptions can have on the intention of starting a business (Hernández-Sánchez et al., 2020).

Pérez-Fernández et al., (2020) found that negative affective traits negatively influence attitudes towards entrepreneurship, however they do not include intentions in their analysis. Zelekha et al. (2018) found that the less anxious an individual is, the more entrepreneurial tendencies he will express. More recently, anxiety and fear have been studied in relation to the Covid -19 pandemic. Mahmud et al. (2020) found that due to the outbreak of pandemic people are

becoming depressed and anxious about their future career. Doanh et al., (2021) found that the fear and anxiety of Covid-19 can reduce entrepreneurial self-efficacy, entrepreneurial intention, and entrepreneurial behavior.

However, other research has found insignificant relations between future career anxiety and students' entrepreneurial intentions (Baratta et al., 2021), and some studies have found that anxiety can even enhance the intention to start a business. In this sense, anxiety can be associated with heightened perception and alertness that can activate people to engage in reward-seeking behavior (Kashdan and Biswas-Diener, 2014). Nikolaev et al. (2019) found that individuals who are high on negative dispositional affect are more likely to engage in entrepreneurial action. In this sense, entrepreneurship can be potentially appealing for people who want to change their life for the better, even entering risky situations. More recently, Bhardwaj (2024) found that both positive emotions and fear of failure determine entrepreneurial intentions.

In sum, research investigating the role of emotions as a driver of EI is still limited. Scholars (e.g., Wiklund et al., 2019; Margaça et al., 2021; Chen et al., 2021) call for more study on the antecedents and consequences of entrepreneurship related to positive emotions, such as well-being. Moreover, most of entrepreneurship literature to date has focused on positive emotions, largely ignoring the negative ones (Nikolaev et al., 2019). The limited research on fear and anxiety have also provided mixed results, and scholars (e.g., Chen et al., 2021; Nikolaev et al., 2019) argue that combining positive and negative feelings will better reflect the influence of emotional factors on EI.

Given the usefulness of combining both personal and contextual factors (Lüthje and Franke, 2003), the current research also investigates the role of educational and social factors. Contextual factors, such as perceived social and institutional support, family characteristics and expectations, network ties, perceived barriers to entrepreneurship (Steele, 2004; Lüthje and Franke, 2003; Liñán and Fayolle, 2015), as well as the level and quality of education and training on business, job placement and entrepreneurship (Zhao et al., 2005; Baum et al., 2007; Soiutaris et al., 2007; Kuckertz and Wagner, 2010) have long been studied as antecedents of students' EI.

The third factor analyzed in this research is entrepreneurial education. Although some studies found weak or insignificant relations (Sesen, 2013; Mustafa et al., 2016) between university environment and entrepreneurial intentions, previous research has nevertheless emphasized the role of entrepreneurial education and training because entrepreneurial education can enhance both entrepreneurial knowledge and skills (Brüne and Lutz, 2020). Moreover, individuals that received formal learning on entrepreneurship in their academic activities are generally given the opportunity to observe successful business models, they are exposed entrepreneurs' lectures and case studies, and therefore are expected to display higher levels of entrepreneurial self-efficacy (Zhao et al., 2005).

The fourth factor analyzed in this research is entrepreneurial networks. Social factors play a significant role in fostering students' entrepreneurial intentions. Although some research indicated that social networks are less significant than personality factors in affecting entrepreneurial intentions (Sesen, 2013), nevertheless involvement in and exposure to entrepreneurial networks, whether through familial connections or acquaintances, are recognized as crucial antecedents to entrepreneurship (Maheshwari et al., 2023). In this context, the family's influence has been underscored in various studies. Notably, students hailing from entrepreneurial backgrounds and with prior family exposure to entrepreneurship generally exhibit heightened intentions towards entrepreneurship (Carr and Sequeira 2007; Liñán and Fayolle, 2015).

Purpose of the paper. Given the aforementioned literature, this pilot study explores the relationship between students' entrepreneurial intentions, well-being, future career anxiety, entrepreneurial networks, and entrepreneurial education. By doing so, the study aims to add to current literature on entrepreneurial intentions by combining both personal and contextual antecedents of entrepreneurial intentions (Lüthje and Franke, 2003). Moreover, this study aims to fill a gap in the literature by incorporating the role of both positive and negative emotions as personal factors (Nikolaev et al., 2019). Specifically, the aim of the study is to test the following hypotheses:

- H1: Students' positive emotions, such as well-being, are related to entrepreneurial intentions.
- H2: Students' negative emotions, such as future career anxiety, are related to entrepreneurial intentions.
- H3: Students' education on entrepreneurship is positively related to entrepreneurial intentions.
- H4: Students' entrepreneurial networks are positively related to entrepreneurial intentions.

Methodology. To test the research hypotheses, an online survey was developed.

Entrepreneurial intentions were measured using a 6 items scale (My professional goal is to become an entrepreneur), similar to the operationalization of Lüthje and Franke (2003) and Kuckertz and Wagner (2010). The scale possesses excellent internal reliability and Cronbach's $\alpha = .96$.

Well-being was assessed using the short version of the Scale of General Well-being (Longo et al., 2017; 2018). The scale comprises 14 items, namely: happiness, vitality, calmness, optimism, involvement, self-awareness, self-acceptance, self-worth, competence, development, purpose, significance, congruence, and connection. The scale display excellent internal reliability as Cronbach's $\alpha = .90$.

Future career anxiety was measured using a 5 items scale originally developed by Tsai et al., (2017) in order to assess students' future career anxiety (I worry about future employment because of a potential economic recession). Internal reliability is excellent and Cronbach's $\alpha = .94$.

Entrepreneurial education was measured with 2 items, dealing with the level of training and education received during the study path. Cronbach's $\alpha = .72$, which is lower but still acceptable (Nunnally, 1978).

Entrepreneurial networks were assessed as a dummy variable, with 1 indicating the presence of entrepreneurs in students' social network (family and friends), and 0 indicating the absence of entrepreneurs in students' social network (family and friends).

All questions, except for entrepreneurial networks, were assessed using a 5-point Likert scale ranging from 1 – strongly disagree to 5 – strongly agree.

The pilot sample includes 174 Italian students. The majority of respondents are female (94%), the average age is 23; 58% are undergraduate students, while 42% are graduate students; 48% are working students.

Results. Descriptive statistics are reported in Table 1. Students' EI are quite low on average, as well as EDU. However, it is important to mention that the majority of surveyed students do not attend Business and Economics courses. Students' WB is quite high, and higher than FCA. Half of the sample belongs to an entrepreneurial network (family or friends).

Table 1. Descriptive statistics

	Mean	SD
EI	2.07	1.02
WB	3.39	.63
FCA	2.76	1.14
EDU	1.96	.89
	N	Frequency
Net	87	50%

The correlation matrix (Table 2) shows that EI are positively correlated with FCA, EDU and Net. Notably, WB and EI are not correlated.

Table 2. Correlation matrix

	EI	WB	FCA	EDU	Net
EI	1				
WB	0.051	1			
FCA	0.183*	-0.134	1		
EDU	0.566**	0.038	0.14*	1	
Net	0.258**	0.107	-0.084	0.165*	1

Note: * $p > 0.01$; ** $p > 0.001$

To better assess the role of entrepreneurial ties, an independent samples t test was conducted (Table 3). The sample was divided into two subsamples based on the presence of entrepreneurs in students' social networks (= 1, 50%). Results show that students belonging to entrepreneurial networks display higher EI and more EDU.

Table 3. T test on entrepreneurial networks

	Group	Mean	Std. Deviation	S.E. Mean	Sig. (2-tailed)
EI	1	2.33	1.11	0.12	0.001
	0	1.81	0.86	0.09	
WB	1	3.46	0.62	0.07	0.161
	0	3.32	0.65	0.07	
FCA	1	2.66	1.13	0.12	0.270
	0	2.85	1.14	0.12	
EDU	1	2.1	0.95	0.1	0.030
	0	1.81	0.81	0.09	

Then an independent samples t test on students' EI was conducted (Table 4). The sample was divided into two subsamples based on EI. As the mean value of EI = 2.07 and the median value = 1.82, the cutoff was set = 2. Results show that students with higher EI (≥ 2 , 46%) display more EDU, more FCA and more Net. WB does not show significant differences in means.

Table 4. T test on entrepreneurial intentions

	Group	Mean	Std. Deviation	S.E. Mean	Sig. (2-tailed)
WB	≥ 2.00	3.35	0.62	0.07	0.394
	< 2.00	3.43	0.65	0.07	
FCA	≥ 2.00	3.01	1.11	0.12	0.006
	< 2.00	2.54	1.12	0.12	
EDU	≥ 2.00	2.42	0.91	0.1	0
	< 2.00	1.56	0.66	0.07	
Net	≥ 2.00	0.59	0.5	0.06	0.033
	< 2.00	0.43	0.5	0.05	

In order to test the research hypothesis, a multiple regression was conducted. This method allows to analyze the simultaneous influence of independent variables, considered predictors, on a dependent variable (Hair, 2011). As reported in Table 5, results show that FCA, EDU and Net significantly affects students' EI. WB displays an insignificant relation. These results confirm H2, H3 and H4, while H1 is not supported.

Table 5. Multiple regression on entrepreneurial intentions

Variable	t	Sig.
(Constant)	0.59	0.557
WB	0.48	0.632
FCA	2.07	0.004
EDU	8.20	0.000
Net	2.88	0.005

Note: R = .60, R² = 0.36, adj. R² = 0.35

Research limitations. This pilot study constitutes only a part of a broader and continuously evolving research project. The main limitations of the current study pertain to its sample size and composition. For instance, the sample predominantly comprises female students, with an absence of representation from business and economics disciplines, among other factors. Additionally, this research solely delves into the examination of specific factors' influence on EI, yet the literature indicates the existence of numerous other variables that have an impact on the decision to start a business.

Managerial implications. Given the pivotal role of entrepreneurship in fostering economic growth, driving innovation, and enriching society (Barba-Sánchez et al., 2022), it is imperative to cultivate entrepreneurial activities and enhance students' EI. The findings of this research provide practical implications for entrepreneurship education and promotion.

- Enhance formal learning and education on entrepreneurship. Incorporating entrepreneurship education into the curriculum could be beneficial, as it can equip students with the necessary knowledge and skills to pursue entrepreneurial ventures. This could involve offering courses, workshops, or mentorship programs aimed at fostering entrepreneurial mindsets and abilities.
- Facilitating networking opportunities for students within entrepreneurial communities or among successful entrepreneurs could help cultivate supportive social networks conducive to entrepreneurial endeavors. This could involve organizing networking events, guest speaker sessions, or alumni mentorship programs.
- Recognizing the positive relationship between anxiety and entrepreneurial intentions suggests that anxiety itself may not necessarily be a barrier to entrepreneurship but rather a potential catalyst for motivation and action. By addressing anxiety and providing appropriate support mechanisms, educators and support organizations can help students harness this energy and leverage it to pursue their entrepreneurial goals more effectively.

Originality of the paper. This research shed light on the complex interplay between entrepreneurial intentions, positive and negative emotions such as well-being and anxiety, and contextual factor, such as education and social networks. In doing so, this study contributes to existing research on entrepreneurial intentions in two ways:

- First, it supports the relevance of combining both personal and contextual factors (Lüthje and Franke, 2003). Contrary to previous research (Sesen, 2013; Mustafa et al., 2016) however, our findings demonstrate that contextual factors have a stronger impact than personal ones in enhancing students' intentions to start a business.
- Second, this study incorporates the role of emotions within personal factors. While previous studies have primarily concentrated on positive emotions (Chen et al., 2021; Nikolaev et al., 2019), this research broadens the scope by analyzing the concurrent impact of both positive and negative emotions on students' entrepreneurial intention. By including negative emotions such as future career anxiety, this study aims to provide a more nuanced understanding of the emotional landscape influencing entrepreneurial aspirations.

References

- ALDWIN C.M., REVENSON T.A. (1987), "Does coping help? A reexamination of the relation between coping and mental health", *Journal of personality and social psychology*, vol. 53, n. 2, pp 337.
- ARORA S., CHAUDHARY P., SINGH R.K. (2021), "Impact of coronavirus and online exam anxiety on self-efficacy: the moderating role of coping strategy", *Interactive Technology and Smart Education*, pp. 1741-5659.
- BARATTA R., ARDOLINO P., BELLINI D., CUBICO S., SIMEONI F. (2021), "Students 'entrepreneurial intentions in the Covid era: balancing leadership and innovation aptitudes for sustainable entrepreneurship", *Proceedings of the Sinergie-SIMA 2021 Conference*, pp. 151-164.
- BAAS M., DE DREU C.K., NIJSTAD B.A. (2008), "A meta-analysis of 25 years of mood-creativity research: Hedonic tone, activation, or regulatory focus?", *Psychological bulletin*, vol. 134, n. 6, pp. 779.
- BARBA-SÁNCHEZ V., MITRE-ARANDA M., DEL BRÍO-GONZÁLEZ J. (2022), "The entrepreneurial intention of university students: An environmental perspective", *European Research on Management and Business Economics*, vol. 28, n. 2, pp. 100184.
- BARON R.A. (1998), "Cognitive mechanisms in entrepreneurship: why and when entrepreneurs think differently than other people", *Journal of Business Venturing*, vol. 13, pp. 275-294.
- BARON R.A., TANG J. (2011), "The role of entrepreneurs in firm-level innovation: Joint effects of positive affect, creativity, and environmental dynamism", *Journal of business venturing*, vol. 26, n. 1, pp. 49-60.
- BAUM J.R., FRESE M., BARON R. (2007), *The Psychology of Entrepreneurship*, Lawrence Erlbaum Associates, Mahawah, NJ.
- BHARDWAJ S. (2024), "A conceptual approach: relationship between crisis, resilience, and entrepreneurial actions", *Global Business and Economics Review*, vol. 30, n. 1, pp. 93-106.
- BRÜNE N., LUTZ E. (2020), "The effect of entrepreneurship education in schools on entrepreneurial outcomes: a systematic review", *Management Review Quarterly*, vol. 70, n. 2, pp. 275-305.
- CHANG F.C. (2011), "Development difficulties and coping strategies of teacher education university", *Journal of Education Research*, vol. 211, pp. 40-51.
- CHEN B.S., YUAN C.H., YIN B., WU X.Z. (2021), "Positive emotions and entrepreneurial intention: the mediating role of entrepreneurial cognition", *Frontiers in Psychology*, vol. 12, pp. 760328.
- CONTRERAS-BARRAZA N., ESPINOSA-CRISTIA JF., SALAZAR-SEPULVEDA G., VEGA-MUNOZ A. (2021), "Entrepreneurial intention: a gender study in business and economics students from Chile", *Sustainability*
- DELGADO GARCÍA J.B., DE QUEVEDO PUENTE E., BLANCO MAZAGATOS V. (2015), "How affect relates to entrepreneurship: A systematic review of the literature and research agenda", *International Journal of Management Reviews*, vol. 17, n. 2, pp. 191-211.
- DE NEVE J.E., DIENER E., TA L., XUEREB C. (2013), "The Objective Benefits of Subjective Well-being".
- DOANH D.C., THANG H.N., NGÀ N.T.V., VAN P.T., HOA P.T. (2021), "Entrepreneurial behaviour: the effects of the fear and anxiety of Covid-19 and business opportunity recognition", *Entrepreneurial Business and Economics Review*, vol. 9, n. 3, pp. 7-23.
- DONALD I., TAYLOR P., JOHNSON S., COOPER C., CARTWRIGHT S., ROBERTSON S. (2005), "Work environments, stress, and productivity: An examination using ASSET", *International Journal of Stress Management*, vol. 12, n. 4, pp. 409.
- FOO M.D. (2011), "Emotions and entrepreneurial opportunity evaluation", *Entrepreneurship theory and practice*, vol. 35, n. 2, pp. 375-393.
- FOO M.D., UY M.A., BARON R.A., (2009), "How do feelings influence effort? An empirical study of entrepreneurs' affect and venture effort", *Journal of Applied Psychology*, vol. 94, n. 4, pp. 1086-1094.
- HAIR J.F. (2011), "Multivariate data analysis: An overview", *International encyclopedia of statistical science*, pp. 904-907.
- HERNÁNDEZ-SÁNCHEZ B.R., CARDELLA G.M., SÁNCHEZ-GARCÍA J.C. (2020), "Psychological factors that lessen the impact of covid-19 on the self-employment intention of business administration and economics' students from Latin America", *International Journal of Environmental Research and Public Health*, vol. 17, n. 15, pp. 5293.
- KASHDAN T., BISWAS-DIENER R. (2014), *The upside of your dark side: Why being your whole self-not just your "good" self-drives success and fulfillment*. New York, NY: Penguin.
- KRUEGER N.F., REILLY M.D., CARSRUD A.I. (2000), "Competing Models of Entrepreneurial Intentions", *Journal of Business Venturing*, vol. 15, n. 5/6, pp. 411-432.
- KUCKERTZ A., WAGNER M. (2010), "The influence of sustainability orientation on entrepreneurial intentions - investigating the role of business experience", *Journal of Business Venturing*, vol. 25, n. 5, pp. 524-539.
- LIÑÁN F., FAYOLLE A. (2015), "A systematic literature review on entrepreneurial intentions: citations, thematic analyses and research agenda", *International Entrepreneurship and Management Journal*, vol. 11, pp. 907-933.
- LONGO Y., COYNE I., JOSEPH S. (2017), "The scales of general well-being (SGWB)", *Personality and Individual Differences*, vol. 109, pp. 148-159.
- LONGO Y., COYNE I., JOSEPH S. (2018), "Development of the short version of the scales of general well-being: The 14-item SGWB", *Personality and Individual Differences*, vol. 124, pp. 31-34.
- LÜTHJE C., FRANKE N., (2003), "The 'making' of an entrepreneur: testing a model of entrepreneurial intent among engineering students at MIT", *R&D Management*, vol. 33, n. 2, pp. 135-147.
- MAHESHWARI G., KHA K.L., AROKIASAMY A.R.A. (2023), "Factors affecting students' entrepreneurial intentions: a systematic review (2005-2022) for future directions in theory and practice", *Management Review Quarterly*, vol. 73, n. 4, pp. 1903-1970.
- MAHMUD S., TALUKDER M.U., RAHMAN M. (2020), "Does 'Fear of COVID-19' trigger future career anxiety? An empirical investigation considering depression from COVID-19 as a mediator", *International Journal of Social Psychiatry*, pp 1-11.
- MARGAÇA C., HERNÁNDEZ-SÁNCHEZ B., SÁNCHEZ-GARCÍA J.C., CARDELLA G.M. (2021), "The roles of psychological capital and gender in university students' entrepreneurial intentions", *Frontiers in psychology*, vol. 11, pp. 615910.
- MEREDITH P., MERSON K., STRONG J. (2007), "Differences in adult attachment style, career choice and career satisfaction for occupational therapy and commerce students", *British journal of occupational therapy*, vol. 70, n. 6, pp. 235-242.

- MUSTAFA M.J., HERNANDEZ E., MAHON C., CHEE L.K. (2016), “Entrepreneurial intentions of university students in an emerging economy: The influence of university support and proactive personality on students’ entrepreneurial intention”, *Journal of Entrepreneurship in Emerging Economies*, vol. 8, n. 2, pp. 162-179.
- NABI G., HOLDE R., WALMSLEY A. (2010), “Entrepreneurial intentions among students: towards a re-focused research agenda”, *Journal of small business and enterprise development*, vol. 17, n. 4, pp. 537-551.
- NIKOLAEV B., SHIR N., WIKLUND J. (2020), “Dispositional positive and negative affect and self-employment transitions: The mediating role of job satisfaction”, *Entrepreneurship Theory and Practice*, vol. 44, n. 3, pp. 451-474.
- NUNNALLY J.C. (1978), *Psychometric Theory* (2nd ed.), McGraw-Hill, New York.
- PÉREZ-FERNÁNDEZ H., DELGADO-GARCÍA J.B., MARTÍN-CRUZ N., RODRÍGUEZ-ESCUADERO A.I. (2020), “The role of affect in the development of entrepreneurial intentions”, *Entrepreneurship Research Journal*, vol. 12, n. 2, pp. 20190124.
- PODOYNITSYNA K., VAN DER BIJ H., SONG M. (2012), “The role of mixed emotions in the risk perception of novice and serial entrepreneurs”, *Entrepreneurship Theory and Practice*, vol. 36, n. 1, pp. 115–140.
- RHEE S.Y. (2006), “Shared positive emotions and group effectiveness: the role of broadening-and-building interaction”, in *AOM 2006 Annual Meeting*, B4-B6.
- ROUTLEDGE C., FIOTITO T.A., BITZAN J.D., ABEYTA A.A. (2021), “Does Existential Wellbeing Promote Positive Attitudes about Entrepreneurs?”, *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, vol. 34, pp. 1-15.
- RYFF C.D. (2019), “Entrepreneurship and eudaimonic well-being: Five venues for new science”, *Journal of business venturing*, vol. 34, n. 4, pp. 646-663.
- SAHRAH A., GURITNO P.D., RENGGANIS D.R.P., DEWI R.P. (2023), “Subjective Well-Being and Psychological Resilience as the Antecedents of Digital Entrepreneurship Intention”, *Journal of Educational and Social Research*, vol. 13, n. 4, pp. 54-65.
- SESEN H. (2013), “Personality or environment? A comprehensive study on the entrepreneurial intentions of university students”, *Education+ training*, vol. 55, n. 7, pp.624-640.
- SHEPHERD D.A., WILLIAMS T.A., PATZELT H. (2015), “Thinking About Entrepreneurial Decision Making: Review and Research Agenda”, *Journal of Management*, vol. 41, n. 1, pp. 11-46.
- SILZER R., CHURCH A.H. (2009), “The pearls and perils of identifying potential”, *Industrial and Organizational Psychology*, vol. 2, pp. 377-412.
- SOUTARIS V., ZERBINATI S., AL-LAHAM A. (2007), “Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources”, *Journal of Business Venturing*, vol. 22, pp. 566-591.
- STEELE G.R. (2004), “Understanding economic man. Psychology, rationality, and values”, *The American Journal of Economics and Sociology*, vol. 63, n. 5, pp. 1021-1055
- TSAI C.T., HSU H., HSU Y.C. (2017), “Tourism and hospitality college students’ career anxiety: Scale development and validation”, *Journal of Hospitality & Tourism Education*, vol. 29, n. 4, pp. 158-165.
- WAGNER M. (2012), “Ventures for the Public Good and Entrepreneurial Intentions: An Empirical Analysis of Sustainability Orientation as a Determining Factor”, *Journal of Small Business & Entrepreneurship*, vol. 25, n. 4, pp. 519-531
- WIKLUND J., NIKOLAEV B., SHIR N., FOO M.D., BRADLEY S. (2019), “Entrepreneurship and well-being: Past, present, and future”, *Journal of business venturing*, vol. 34, n. 4, pp. 579-588.
- YUAN C.H., WU Y.J. (2020), “Mobile instant messaging or face-to-face? Group interactions in cooperative simulations”, *Computer Human Behavior*, pp. 113:
- ZELEKHA Y., YAAKOBI E., AVNIMELECH G. (2018), “Attachment orientations and entrepreneurship”, *Journal of Evolutionary Economics*, vol. 28, pp. 495-522.
- ZHANG P., WANG D.D., OWEN C.L. (2015), “A study of entrepreneurial intention of university students”, *Entrepreneurship Research Journal*, vol. 5, n. 1, pp. 61-82.
- ZHAO H., SEIBERT S.E., HILLS G.E. (2005), “The mediating role of self-efficacy in the development of entrepreneurial intentions”, *Journal of Applied Psychology*, vol. 90, n. 6, pp. 1265-1272.

Social Entrepreneurship and Sustainability. How can challenge-based learning impact students' entrepreneurial skills and challenge providers' problems?

ALESSANDRA SCROCCARO¹

Abstract

The Department of Economics and Management of the University of Trento offers a master's Course, Sustainability and Social Entrepreneurship, which focuses on hybrid and sustainable companies and aims to transfer the ability to examine opportunities and challenges for promoting corporate and nonprofit/hybrid corporate responsibility and sustainability. The 48-hour Course (8 ECTS) aims to impart knowledge, skills, competencies, approaches, and techniques specific to social impact business design. It also seeks to understand current challenges, trends, and future scenarios in sustainability, innovation, and social entrepreneurship, as well as the main business models available for creating social impact. It is a challenge-based and hands-on course that includes developing a project idea and a social business model to be presented at the end of the Course, starting from challenges launched by the so-called challenge providers in the Trentino territory (such as organizations, cooperatives, and associations). By immersing themselves in the challenges, the students respond to concrete problems, presenting innovative and sustainable solutions at the end of the Course. The purpose of the paper is to understand how an educational initiative such as this Course impacts in two ways: one way is the educational learning, by increasing students' entrepreneurial and innovation skills, and on the other way, how it can have an impact on challenge providers. To evaluate the impact of the challenge from the perspective of students, the research collects data through EntreComp, the European Framework survey concerning entrepreneurial skills. The survey is submitted to students at the beginning and end of the Course. The research also collects data from the reflective tools. To evaluate the impact of the challenges from the perspective of the challenge providers, the research collects data from semi-structured interviews. Preliminary results gathered from the EntreComp and the reflective tools show that students increase their entrepreneurial skills such as, among others, the identification of opportunities, creativity, the capacity to mobilize teammates, problem-solving, and communication skills. From the challenge providers' perspective, this Course represents an opportunity to acquire new ideas and solutions, recruit young talents, and gain knowledge and competencies.

Key words: social entrepreneurship; sustainability; challenge-based learning; social innovation; social economy; higher education

Framing of the research. *The Department of Economics and Management of the University of Trento offers a master's Course, Sustainability and Social Entrepreneurship, which focuses on hybrid and sustainable companies and aims to transfer the ability to examine opportunities and challenges for promoting corporate and nonprofit/hybrid corporate responsibility and sustainability. The 48-hour Course (8 ECTS) aims to impart knowledge, skills, competencies, approaches, and techniques specific to social impact business design. It also seeks to understand current challenges, trends, and future scenarios in sustainability, innovation, and social entrepreneurship, as well as the main business models available for creating social impact. Through developing knowledge related to social entrepreneurship and third-sector management, the Course aims to analyze the spaces, tools, and opportunities for the strategic development of Third Sector organizations, the cooperative world, nonprofit companies, and B-Corp, focusing on new forms of social innovation.*

It is a challenge-based and hands-on course that includes developing a project idea and a social business model to be presented at the end of the Course, starting from challenges launched by entities, the so-called challenge providers in the Trentino territory (such as organizations, cooperatives, and associations). By immersing themselves in the challenges, the students respond to concrete problems, presenting innovative and sustainable solutions at the end of the Course.

The Course aims to stimulate transversal skills, which are also the 15 entrepreneurial skills outlined by EntreComp, the European framework, divided into three macro areas: the ability to identify ideas and opportunities, knowing how to mobilize helpful resources to solve problems and generate solutions, and finally knowing how to manage a project.

At the end of the Course, students should be able to:

¹ University of Trento
e-mail: alessandra.scroccaro@unitn.it

- Understand the general concepts related to sustainability, innovation, and social entrepreneurship;
- Identify and describe the main models of social entrepreneurship and social innovation;
- Recognize the main managerial approaches to transform social entrepreneurial opportunities into business models and to develop socially innovative ideas and solutions;
- Analyze and evaluate how social entrepreneurship and social innovation enable sustainability and how social entrepreneurs can act as change agents;
- Analyze the needs and funding sources for social entrepreneurship and social innovation;
- Analyze a problem, putting it in context, identifying key stakeholders, and understanding customer/user needs;
- Generate innovative and sustainable social impact solutions;
- Understand social impact design, measurement, and evaluation;
- Present a pitch in front of an audience consisting of faculty, investors, and Third Sector organizations.

Purpose of the paper. The purpose of the paper is to understand how an educational initiative such as this Course impacts in two ways: one way is the educational learning, by increasing students' entrepreneurial and innovation skills, and on the other way, how it can have an impact on challenge providers. The challenge-based approach applied to real problems can lead to change by substantially impacting companies and organizations that offer challenges to be solved. Also, this innovative learning method leads to capacity building, soft skills or 21st-century skills acquisition, and experiential and active learning that connects students with companies, cooperatives, and Third Sector organizations.

Methodology To evaluate the impact of the challenge from the perspective of students, the research collects data through EntreComp, the European Framework survey assessing entrepreneurial skills. The survey was submitted to students at the beginning and end of the Course. The research also collects data from the reflective tools used during the Course, such as individual learning agreements and individual reflection reports based on Kolb's approach and Gibb's reflective cycle. To evaluate the impact of the challenge from the perspective of the challenge provider, the research collects data from semi-structured interviews.

Results. Preliminary results gathered from the EntreComp and the reflective tools show that students increase their entrepreneurial skills such as, among others, the identification of opportunities, creativity, the capacity to mobilize teammates, problem-solving, and communication skills. From the challenge provider perspective, this Course represents an opportunity to acquire new ideas and solutions, recruit young talents, and gain knowledge and competencies.

Research limitations. The students' sample is limited in number. A longitudinal study is not currently possible since this is the first edition of the course.

Managerial implications. The paper gives extensive details on designing and managing a challenge-based course to have a coherent and efficient entrepreneurship education initiative.

Originality of the paper. The paper contributes to applying challenge-based learning into entrepreneurship education literature, giving two perspectives and studying the impact on the students' learning, specifically on their entrepreneurial skills and the challenge providers' outcomes.

References

- BACIGALUPO M., WEIKERT GARCIA L., MANSOORI Y., O'KEEFFE W. (2020), *EntreComp Playbook. Entrepreneurial learning beyond the classroom* (No. JRC120487), Joint Research Centre (Seville site),
- GIBBS G. (1988), *Learning by Doing: A guide to teaching and learning methods*. Further Education Unit. Oxford Polytechnic, Oxford.
- KOLB D A. (1984), *Experiential learning: Experience as the source of learning and development* (Vol. 1), Englewood Cliffs, NJ: Prentice-Hall.
- PÉREZ-SÁNCHEZ E.O., CHAVARRO-MIRANDA F., RIANO-CRUZ J.D. (2020), *Challenge-based learning: A 'entrepreneurship-oriented' teaching experience*. Management in Education, 0892020620969868.
- PIAGET J. (1950), *The psychology of intelligence*. Routledge, New York.
- VYGOTSKY L.S., COLE M. (1978), *Mind in society: Development of higher psychological processes*. Harvard University Press, Boston, MA.

Humane entrepreneurship and the circular economy: an empirical investigation

MASSIMILIANO VESCI¹ ROBERTA DE ANGELIS²

Abstract

This study examines the Humane Entrepreneurial Orientation (HEO) key characteristics in the field of Circular Economy (CE) investigating Entrepreneurial Orientation (EO), Sustainability Orientation (SO), and Humane Resource Orientation (HRO) in two Italian SMEs presenting circular business models (CBMs). The study contributes to the nascent literature of CE offering evidence of the and Humane Entrepreneurship (HumEnt) approach. Results expands the body of knowledge of EO, SO, and HRO features boosting the discussion among scholars and building blocks toward the betterment of the HEO measurement.

Key words: Humane Entrepreneurial Orientation; Circular Business Models; Case Studies; Italy.

Framing of the research. Humane Entrepreneurship (HumEnt) has been conceived as a behavioral and attitudinal theory of entrepreneurship that extend the entrepreneurial strategic behavior outlined by Covin and Slevin (1989). In particular, drawing on entrepreneurial orientation theory (Covin and Lumpkin, 2011), two different HumEnt models can be detected in literature. Model 1, proposed by Kim et al. (2018), emphasizes the role of human resources and sustains the need to integrate the entrepreneurial within a specific human-centered logic (Kim et al., 2021). Model 2, proposed by Parente et al. (2018, Parente et al., 2021), defines the pivotal entrepreneurial strategic posture of Humane Entrepreneurial Orientation (HEO) as “the extent to which entrepreneurs and top managers are inclined to take care of a firm’s competitiveness, to take care of their human resources and to take care of relevant social values and concerns, including those regarding environmental sustainability” (Parente et al., 2021, p. 512). Given the fact that how to move towards a more environmentally and socially sustainable economy is a long-debated issue, HumEnt seems to represent an essential framework to understand current times and analyze the emerging business models. In fact, HumEnt has been supposed to be strictly related with entrepreneur’s inner values and culture, regulatory rules, operated business, etc., thus having also the potential to boost the transition toward an enlargement of corporation’s main purposes suggested from the Business roundtable (2019). In this paper, HumEnt is examined within the context of businesses implementing circular economy principles in their business models. The circular economy (CE) has catalyzed interest across different quarters recently including policy, business and academic circles for its potential to address multiple sustainability challenges and build a more resource efficient and resilient economy (Kirchherr et al., 2023). Academically, the research on the CE has been proliferating. Authors in this field have conducted extensive literature reviews (e.g., Ghisellini et al., 2016; Ludeke-Freund et al., 2018); they also examined circular business models (e.g., Hopkinson et al., 2018) as well as the relationship between the CE and the United Nation’s Sustainable Development Goals (e.g., Schroeder et al., 2018). Others have explored drivers and barriers to CE implementation (e.g., Govindan & Hasanagic, 2018), application across different contexts (Katz-Gerro & Sintas, 2019), its conceptualization (e.g., Kirchherr et al., 2017) and circularity indicators (Kristensen & Mosgaard, 2020) among other themes. Yet, there are only few studies at the intersection between the entrepreneurship and the CE literature (Re & Magnani, 2022; Zucchella & Urban, 2019).

Purpose of the paper. Whilst contributions to these emerging research areas (HumEnt and CE) have been growing rapidly, the literature exploring HumEnt within the CE context is just nascent (Ghisellini et al., 2021; Le, 2022), and in the case of HumEnt contributions have remained at theoretical level in most cases (Kim et al., 2018; Parente et al., 2018; 2021). Thus, more empirical evidence in the realm of business is strongly needed trying to understand how HumEnt values are implemented in business context in particular in the CE. By applying the HumEnt framework, this study attempts to shed light on the CE phenomenon having as its goal the framing of HEO’s characteristics by showing how firms operating in the CE have implemented the HumEnt approach. Using a qualitative methodology and drawing on insights from two case studies (namely, two Italian SMEs), this study attempts to investigate how the HEO’s dimensions have been interpreted, answering the following research question:

RQ1. How are the characteristics of HEO strategic posture framed in circular small and medium enterprises?

¹ University of Salerno
e-mail: mvesci@unisa.it

² e-mail: DeAngelisR@cardiff.ac.uk

HEO is described by three dimensions: EO, SO and HRO that are supposed to be part of the firm's business model, strategy and possibly values (Parente et al., 2018, Parente et al., 2021).

Methodology. This research is based on qualitative case studies (Yin, 2014). Qualitative case studies are a common research approach in the empirical literature on circular business models (e.g., De Angelis & Feola, 2020) and HEO (e.g., Vesci et al., 2023; Buratti et al., 2022). Therefore, our research approach is appropriate in the context of this study because both CE and HumEnt are in their early stage, and thereby, could benefit from the insights generated through qualitative research. Purposive logic (Miles and Huberman, 1994) has been used to select our case studies, which means that cases are included because they are relevant from the perspective of this study. The selection of the cases was guided by the circularity measures highlighted in the ReSOLVE framework (EMF et al., 2015), which includes: Regenerate, Share, Optimise, Loop, Virtualise and Exchange (ibid.). These measures mirror CE principles and particularly: 'Eliminate' waste and pollution by design, 'Circulate' materials and components that sit within products and 'Regenerate' natural systems (ibid.). The findings we illustrate are anonymized to comply with the ethical procedure followed in this research.

Alpha and Beta are two Italian companies operating respectively in refurbished electronic devices and packaging sector. Alpha is a SME operating in both B2B and B2C context. Alpha buys directly electronic devices (in particular, iPhones, iPads, and Macs), putting them back on sale at the end of a careful process of regeneration that is divided into three phases: testing (ascertain the actual status of the electronic device), laboratory (repairing), and grading (electronic device grading based on its new status). To date, Alpha has refurbished more than 30.000 electronic devices promoting a smarter and more intelligent approach to consumption. Alpha is an example of a company operating in the 'technical cycle' of the CE espousing the 'Share' and 'Loop' measures in the ReSOLVE framework (EMF et al., 2015). Beta is an SME operating in the eco-design and architecture sector by designing sustainable corrugated cardboard products. In particular, Beta realizes displays, furnishings, communication supports and special packaging that are mainly made with interlocking techniques and without the use of glues. Water-based inks, sophisticated cutting and printing techniques guarantee minimal environmental impact. To date, Beta has realized furnishings entirely in cardboard for restaurants and museums, trade fair stands entirely made of recycled and recyclable cardboard, etc. Beta is an example of a company operating in the 'technical cycle' espousing the 'Optimise' and 'Loop' measures in the ReSOLVE framework (EMF et al., 2015).

Both secondary data and primary data (semi-structured interviews) have been collected. Interviews were conducted between October 2022 and March 2023 by one of these authors. The interviews lasted approximately 120 minutes in total, were conducted on-line, digitally recorded and professionally transcribed. Italian interviews were then translated in English by one of these authors. The interviews were conducted with key informants, i.e., those with substantial and exclusive information (Aguinis and Solarino, 2019,) and particularly with the marketing officer for company Alpha and the president and founder for company Beta, so that the questions could be addressed to gain rich data (Creswell, 2012). The interviews were based on questions informed by the CE and circular business models literature as well as HumEnt framework. Data collection was deemed complete at the point of saturation, i.e., when there were no new insights emerging from the process of data collection (Bowen, 2008).

The findings here illustrated emerge from our own data analysis and interpretation and thereby, they fall exclusively under our responsibility.

Results. To ascertain the characteristics of the HEO strategic posture in circular firms, this study employs the HEO framework (Parente et al., 2021; Vesci et al., 2023) which has been chosen for its comprehensiveness in describing HumEnt approach identifying all the elements whose presence is necessary to recognize the high level of strategic posture aligned with HumEnt prescriptions. Particularly, the elements that make up this framework are: Entrepreneurial Orientation, Sustainability Orientation, and Humane Resource Orientation (Parente et al., 2021; Vesci et al., 2023). Next, we briefly illustrate the characteristics of these components for the organizations involved with this study.

Entrepreneurial Orientation

Entrepreneurial Orientation, expressing to which extent firm's strategic posture could be considered entrepreneurial or, in contrast, conservative, includes predominantly three subdimensions (Wales et al., 2013; Rauch et al., 2009): risk-taking, innovativeness and proactiveness as traditionally described by Covin and Slevin (1989).

Risk Taking

For Alpha: "[This is] such a [risk-oriented enterprise]. We believe a lot in this [business] for a simple reason: because in distribution, credibility and the fact of having created it over the years are very important. It is the thing that currently moves operations the most. [...] A new player who wants to enter the distribution sector will have to face many barriers which are certainly linked to the availability of cash flow but also to the willingness to take [other types of] risks. Since we have a very strong network, we can trust our suppliers, just as we are reliable suppliers for third parties. This means that we eliminate the risk or in any case we greatly reduce the risk of accidents, [running the business]". [Alpha's Marketing Director, Interview 1 extract].

For Beta: "there are many types of risks beyond financial risk: outside, there are many things. There are many black swans that come: once Covid came; [...] now this madman has come along and has started the war that has blocked everything. We must also be quite resilient". [Beta's President and Founder, Interview 1 extract].

Innovativeness

For Alpha: “[This company is] very [innovative] in the sense that, as I was saying, we are investing in technology and I’m pleased, in short, [...] to talk about it, because the difference between a new product and a refurbished one is the workmanship and therefore the credibility. [...]. We are investing a lot in technology and therefore innovation is one of the cornerstones. [Innovation] can also take the form of training [...] I don’t know if you were more specific about technological innovation, though! In general, [training and technological education] is an asset [...]. Having technicians that no one else has [...]. Clearly, therefore, also investing in training [means] investing in innovation in a broader sense”. [Alpha’s Marketing Director, Interview 1 extract].

For Beta: “Lightness and performance of the paper. This was the innovation we put in. [...] Our main role is to provide customers with innovative solutions for different packaging, which must also be attractive, must be pleasant and the innovation has been made. [...] Everyone makes products but few communicate how the product is made and this is innovation, because obviously the material that you purchase as raw material, even if perhaps recycled, must have specific characteristics, [...] it must be existing, it must be beautiful, it must be clean, it must be everything, but it must also be made with sustainability standards, [...]. Innovation can be product innovation, it can [mean] bringing workers together or [valorising]. those who have said they are doing something new; innovation means looking ahead and seeing what product our customer needs”. [Beta’s President and Founder, Interview 1 extract].

Proactiveness

For Alpha: “[Alpha is a] very [proactive company] in the sense that the attention is always there. [...]. Yes, [we made some choices anticipating what then happened in economic scenario], if we are talking about the choice of having the objective of being the company that is the leader in Italy in the field of distribution for this specific refurbished product. [...] This in itself is already a courageous choice. Even before the e-commerce boom there was this definite interest. [...] Abroad there was already much more confidence with online purchases and with the refurbished products. In Italy, refurbished goods were very rarely requested: if in fact, for example, you do a search on Google [about refurbished products and] the keywords searched by users, in the last 2-3 years, [you can see] a huge growth in the last 2-3 years”. [Alpha’s Marketing Director, Interview 1 extract].

For Beta: “Moments [of difficulty] may occur because, for example, our customers have less money available to make purchases. Packaging that has a certain cost, display packaging I mean, becomes a superfluous purchase. And this could be a dangerous [for my firm]. [...] There are many of us working in the same direction to develop this business. [...] And therefore we must understand, see the market and give it [what the customer asks for, what] it needs. Calmly, with serenity, without panicking, [...] privileges sooner or later finish; [Let’s stick] to normal things, not to privileges”. [Beta’s President and Founder, Interview 1 extract].

Interviews’ results show that differently from Miller (1983, 2011) and Covin and Slevin (1989) that measured: (1) innovativeness predominantly in term of the new products created by the firm; (2) risk-taking as, “the degree to which managers are willing to make large and risky resource commitments - i.e., those which have a reasonable chance of costly failures” (Miller and Friesen, 1978, p. 923); and (3) proactiveness as a forward-looking perspective associated with grasping new opportunities and introducing innovative activities, in the two investigated cases Innovativeness has been associated with training and technological education (Alpha), technology innovation to boost product’s performance (Alpha and Beta) and only finally new products (Beta). Similarly, in the case of risk-taking, both firms, recognizing that risk is strictly associated with cash (and thus is a financial issue), seem to conceptualize the broader concept of entrepreneurial risk identifying ways to face it mentioning entrepreneurial credibility (Alpha), or resilience to manage the business environment (Beta). Only the proactiveness subdimension is completely in line with Covin and Slevin’s (1989) conceptualization as a forward-looking perspective anticipating bad things (Beta) or having the courage to make choices not necessarily in line with the common competitors’ acts, i.e. doing in advance what will occur in the near future (Alpha).

Sustainable Orientation

SO in HumEnt approach is interpreted as the exhibition of high level of commitment to the preservation of the environment but also in terms of acts to improve the quality of life in the local community (Parente et al., 2021. In this sense, it can be measured by referring to the degree to which the firm “strategically realizes projects (1) to improve the quality of life and the well-being of the local community, and (2) to protect or restore the environment (Vesci et al., 2023, p. 570).

For Alpha: “The direction is to have a strategy that allows us to quantify what our impact is on the environment in the future. At the moment we do it (...) in the sense that we know that [...] we have allies who are equally aware. I’m talking about shipping for example: X is a partner that pays a lot of attention among all couriers, for example to these issues. [...] I would add that [the strategy and] the value proposition [...] is to have strong control of the supply chain. So, we can [...] have access to large stocks at favorable prices. [...] “At the moment we are doing projects with “XXX” (which is a local

company) and with which we are actively trying to create, for example, events for information purposes. (...) For example, the potential customer (...) will have to bring a used phone to participate in the event. This ensures that there is more awareness, and that the rhythm of circularity is also established. (...) because circularity is essentially this: no longer creating a transactional approach (I buy, you sell, etc., etc.) but the same phone passes from hand to hand. So, what do we want to do? We want, let's say, to break down this type of transactional market, to put phones into circulation, to expand the offer, that is, at a certain point we no longer work on phones, but also on services, in such a way that it becomes a habit, that is, the refurbished must become part of the habit of purchasing and using behavior" *[Alpha's Marketing Director, Interview 1 extract]*.

For Beta: "We believe in the fundamental principles of sustainability, that in addition to making our profit we must distribute what we do throughout the territory, always respecting the environment. [...] if we collect waste [paper], it means that the value of the territory increases because employment increases and development increases. [For example,] 100,000 tons of papers that we collect means almost 300 more jobs, 80 million euros in value. [...] What does this mean? That the more paper we collect, the more money we save from municipalities and users, and the more we bring to them in the area. But this product must be processed in the area, and in turn it must bring employment. [...] What do we do for the territory? we, in our small way, if we earn enough, we can also give a lot to the territory; if we earn less we give less to the territory. I mean, we can give a little charity, we can help family homes, we can help the municipalities to separate waste collection, we can [develop projects together with the municipalities for the territory]". *[Beta's President and Founder, Interview 1 extract]*.

Interviews results show that SO has been excellently interiorized in terms of environmental and social stewardship. In particular, Alpha pays great attention to the environmental side but considers having a direct responsibility in "breaking-down the transactional market" making the refurbished purchase an habit in the society. Beta is even more focused on the social dimension whilst caring for the environmental dimension at the same time. In fact, Beta argues that is fundamental to distribute part of the financial profit to the territory.

Humane Resource Orientation

HRO is qualified by four components: empathy, equity, enablement, and empowerment: (1) empathy is "the extent to which a company shares emotions and information with its employees"; (2) equity is "the extent to which a company treats individuals in a fair and equal manner"; (3) enablement is "the extent to which a company provides the environment where each individual employee is able to develop skills and knowledge, consisting of both skill and infrastructure"; and (4) empowerment is "the delegation of power and responsibility from higher levels of the organizational hierarchy to lower levels, especially in regard to an employee's ability to make decisions" (Kim et al., 2018, p. 21).

Empathy

For Alpha: "In the last three months we have started to make [...] a form of communication exploited on three levels. The first is team building. We actually have sessions within the various teams with me super partes and another person. And then we let the team members talk. So [everyone can] bring out all the gut perceptions so that we can discuss it. A free area in such a way as to have, let's say, a direct comparison with people who perhaps do not normally have the possibility of expressing themselves or in any case do not have an authoritative level. Then there is a level of communication between team leaders. Therefore, team leaders communicate and this ensures that there is more cohesion between the different functions. And finally there is company's communication to all its employees. So at the moment we are structuring ourselves and it is certainly an empathetic way of doing things, in the sense that we try to listen, we have yes, we have implemented this attitude". *[Alpha's Marketing Director, Interview 1 extract]*.

For Beta: [In our company we took] guys [who] did an internship; they did two years of training. Today they are all permanent employees. Seeing these kids who you took from them at 20 years old who at 27-28 years old were able to buy a car, were able to get married, were able to start a family and have children... it becomes a very [satisfying] thing". *[Beta's President and Founder, Interview 1 extract]*.

Equity

For Alpha: "Let's say, at the moment, when we are putting open positions online, we do it first and foremost, both in English and in Italian, precisely to give access to people who perhaps have difficulty with the Italian language but who still manage to get by. In this way we overcome the problem of language and at the same time also of ethnicity. [We specify] very clearly that we are open to all types of applications, so I also talk about the issue, let's say disability, the issue of the gender gap, [...] that is, [diversity gaps] are issues that we care about but clearly there is a background, I'm talking about the culture from which we come, which does not favor the entry of diversity within the company. [...] [In sum,] current state - future state: there is a difference [in term of equity that] [...] has not been addressed before, unfortunately, but for many reasons [...] but we are working on it". *[Alpha's Marketing Director, Interview 1 extract]*.

Enablement

For Alpha: “The point is that on many tasks in which we are finding that there is perhaps a possible frustration - I am talking about years of work in the same sector and in the same job -, what is the only way to create perspective for the worker? That of differentiating the task. So, in 5 years from now the tester will not only be responsible for carrying out tests, but possibly we will have different figures always in the same sphere of action who will take care of, I don't know, coaching the new entrants, therefore carrying out boarding, etc.” [Alpha's Marketing Director, Interview 1 extract].

Empowerment

For Alpha: “Then, let's say, [the employee or worker is not authorized to] make decisions. But the idea that the employee can in his, in his [job routine] find the solutions to bring to management or to the executive, is something that has always been clear, always been, not only accepted, but welcome. So, let's say: on this I think there is clarity within the company. We are all in the same boat: so, obviously, finding a solution doesn't just mean bringing good to your own mill, bringing water to your own mill, but bringing water to everyone's mill. I think that there is no doubt about this: there is, there is a lot of openness on the part of the executives”. [Alpha's Marketing Director, Interview 1 extract].

For beta: “there is continuous participation of human resources. If someone makes an improvement, they do it and move on. [Executives do not block him]”. [Beta's President and Founder, Interview 1 extract].

Interviews data show that HEO has different levels of interiorization and also different understanding at least for some subdimensions. In fact, the four dimensions of empathy, equity, enablement and empowerment are clearly evident in Alpha only whilst for Beta there is evidence of empathy and empowerment only. Beta perfectly interpreted the concept of empathy, with its President so proud to share emotions, feelings, concerns, and goals of employees. On the other hand, Alpha shows a different level of empathy that seems to be just at initial stage, that is that of listening. Alpha has very clear the concept of equity in terms of equal treatment of all employees, recognizing that executives are still working on this aspect because for several reasons in the industry is still difficult to tackle the gender gap, diversity gap, etc. In addition, Alpha demonstrates not to fully grasp the theoretical conceptualization of enablement that is prevalently seen only as matter of job enlargement, remaining not well focused the issue of education and training in a global perspective. Related to empowerment for both the interviewed firms, executives are very open to leave some degree of freedom to their employees in taking autonomous decisions, but Alpha seems to be more restrictive than Beta.

Research limitations. Whilst we make relevant contributions to the CE and HumEnt literature, we are aware that this study has also some limitations, mostly notably, the limited geographical scope and the number of organizations investigated.

Theoretical and Managerial implications. There are several theoretical and managerial implications deriving from this study. Firstly, this study finds that there are circular businesses presenting the HEO theoretical characteristics, thus adding empirical evidence to HumEnt literature and bridging circular business models studies to entrepreneurship investigations. Secondly, this study expands HumEnt theory recognizing that in humane entrepreneurial oriented firms the strategic posture is developed along the three lines of EO, SO, and HRO and demonstrating that is possible to find different levels of EO or SO or HRO. In sum, this study confirms the theoretical position of Parent et al. (2021) and Vesci et al. (2023) that only the presence of the three subdimension allows to classify the firm as a humane entrepreneurial oriented firm and that reality displays firms with a clear expression of only some of the subdimensions that compose HEO. Thirdly, findings suggest that in the CE field SO is clearly understood as both environmental and social, being aligned with previous study of Vesci et al. (2023). Fourthly, this study provides evidence of CE implementation thereby contributing to advance the CE literature, where most studies have been conceptual to date (Zils et al., 2024). Fifthly, as one of the cases stressed that a positive workplace climate and staff wellbeing are results of long-term action, managers and entrepreneurs must plan and organize training courses and team-building events, with the aim to reinforcing the familial feelings among the workforce. Finally, as HumEnt is not a simple task and it appears to be costly at least in the short run, institutions and governments should think to several forms of supporting firms that respect HumEnt principles.

Originality of the paper. This study contributes to the scant literature at the intersection between entrepreneurship and CE, and particularly to the nascent literature combining HumEnt with CE. In addition, this study analyzes firms that display an entrepreneurial strategic posture corresponding to a HumEnt approach contributing to the discussion on the HEO key characteristics in the CE field. Finally, the analysis shows that entrepreneurs' personal values and credos are strictly linked with HEO.

References

- AGUINIS H., SOLARINO A. (2019), “Transparency and replicability in qualitative research: The case of interviews with elite informants”, *Strategic Management Journal*, vol. 40, pp. 1291-1315.
- BOWEN G. A. (2008), Naturalistic inquiry and the saturation concept: A research note. *Qualitative Research*, vol. 8, pp. 137-152.

- BURATTI N., ALBANESE M., SILLIG C. (2022), "Interpreting community enterprises' ability to survive in depleted contexts through the Humane Entrepreneurship lens: evidence from Italian rural areas", *Journal of Small Business and Enterprise Development*, vol. 29, n. 1, pp. 74-92.
- COVIN J.G., LUMPKIN G.T. (2011), Entrepreneurial orientation theory and research: reflections on a needed construct", *Entrepreneurship: Theory and Practice*, vol. 35, n. 5, pp. 855-872.
- COVIN J.G., SLEVIN D.P. (1989), Strategic management of small firms in hostile and benign environments", *Strategic Management Journal*, vol. 10, n. 1, pp. 75-87.
- CRESWELL J.W. (2012), *Qualitative inquiry and research design: Choosing among five approaches*. 3rd ed. Sage, Thousand Oaks, US.
- DE ANGELIS R., FEOLA R. (2020), "Circular business models in biological cycles: The case of an Italian spin-off", *Journal of Cleaner Production*, vol. 247, 119603.
- EMF, McKinsey & SUN. (2015), Growth within: A circular economy vision for a competitive Europe. Retrieved July 2023 from: <http://www.ellenmacarthurfoundation.org/books-and-report>.
- GHISELLINI P., CIALANI C., ULGIATI S. (2016), "A review on circular economy: the expected transition to a balanced interplay of environmental and economic systems", *Journal of Cleaner Production*, vol. 114, pp. 11-32.
- GHISELLINI P., PASSARO R., QUINTO I., ULGIATI S. (2021), "Exploring the role of circular start-ups in promoting a more sustainable and humane entrepreneurship. In: Beyond the crisis: what is the future for small businesses? Challenges, opportunities and lessons learned. Proceeding of the Piccola Impresa/Small Business 5th Workshop. Retrieved June 2023 from <https://journals.uniurb.it/index.php/piccola/article/view/3362>
- GOVINDAN K., HASANAGIC M. (2018), "A systematic review on drivers, barriers, and practices towards circular economy: a supply chain perspective", *International Journal of Production Research*, vol. 56, pp. 278-311.
- HOPKINSON P., ZILS M., HAWKINS P., ROPER S. (2018), "Managing a complex global circular economy business model: opportunities and challenges", *California Management Review*, vol. 60, pp. 71-94.
- KATZ-GERRO T., SINTAS J.L. (2019), "Mapping circular economy activities in the European Union: patterns of implementation and their correlates in small and medium-sized enterprises", *Business Strategy and the Environment*, vol. 28, pp. 485-496.
- KIM K.C., ELTARABISHY A., BAE Z.T. (2018), Humane entrepreneurship: how focusing on people can drive a new era of wealth and quality job creation in a sustainable world", *Journal of Small Business Management*, vol. 56, n. S1, pp. 10-29.
- KIM K.C., HORNSBY J.S., ENRIQUEZ J.L., BAE Z.T., EL TARABISHY A. (2021), "Humane Entrepreneurial Framework: a model for effective corporate entrepreneurship", *Journal of Small Business Management*, vol. 59, n. 3, pp. 397-416.
- KIRCHHERR J., REIKE D., HEKKERT M. (2017), "Conceptualizing the circular economy: an analysis of 114 definitions. Resources", *Conservation and Recycling*, vol. 127, pp. 221-232.
- KIRCHHERR J., YANG N.H.N., SCHULZE-SPÜNTRUP F., HEERINK M.J., HARTLEY K. (2023), "Conceptualizing the circular economy (revisited): An analysis of 221 definitions", *Resources, Conservation and Recycling*, vol. 194, 107001.
- KRISTENSEN H.S., MOSGAARD M.A. (2020), "A review of micro level indicators for a circular economy - moving away from the three dimensions of sustainability?", *Journal of Cleaner Production*, vol. 243, 118531.
- LE T.T. (2022), "How humane entrepreneurship fosters sustainable supply chain management for a circular economy moving towards sustainable corporate performance", *Journal of Cleaner Production*, vol. 368, 133178.
- LÜDEKE-FREUND F., GOLD S., BOCKEN N.M.P. (2018), "A review and typology of circular economy business model patterns", *Journal of Industrial Ecology*, vol. 23, pp. 36-61.
- MILES M., HUBERMAN A. (1994), *Qualitative Data Analysis. An Expanded Sourcebook* (2nd Edition ed.), "SAGE Publications Ltd.
- MILLER D. (1983), "The correlates of entrepreneurship in three types of firms", *Management Science*, vol. 29, n. 7, pp. 770-791.
- MILLER D. (2011), "Miller (1983) revisited: a reflection on EO research and some suggestions for the future", *Entrepreneurship Theory and Practice*, vol. 35, n. 5, pp. 873-894.
- MILLER D., FRIESEN P. (1978), "Archetypes of strategy formulation", *Management Science*, vol. 24, pp. 921-933.
- PARENTE R., ELTARABISHY A., BOTTI A., VESCI M., FEOLA R. (2021), "Humane entrepreneurship: some steps in the development of a measurement scale", *Journal of Small Business Management*, vol. 59, n. 3, pp. 509-533.
- PARENTE R., ELTARABISHY A., VESCI M., BOTTI A. (2018), "The epistemology of humane entrepreneurship: theory and proposal for future research agenda", *Journal of Small Business Management*, vol. 56, n. S1, pp. 30-52.
- RAUCH A., WIKLUND J., LUMPKIN G.T., FRESE M. (2009), "Entrepreneurial orientation and business performance: An assessment of past research and suggestions for the future", *Entrepreneurship Theory and Practice*, vol. 33, pp. 761-787.
- RE B., MAGNANI G. (2022), "Value co-creation in circular entrepreneurship: An exploratory study on born circular SMEs", *Journal of Business Research*, vol. 147, pp. 189-207.
- SCHROEDER P., ANGGRAENI K., WEBER U. (2018), "The relevance of circular economy practices to the sustainable development goals", *Journal of Industrial Ecology*, vol. 23, pp. 77-95.
- VESCI M., BOTTI A., FEOLA R., CONTI E., EL TARABISHY A. (2023), "Bridging theory and practice in the humane entrepreneurship domain: insights from small and medium Italian enterprises", *Journal of Small Business and Enterprise Development*, vol. 30, n. 3, pp. 567-586.
- WALES W.J., GUPTA, V.K., MOUSA F.T. (2013), "Empirical research on entrepreneurial orientation: an assessment and suggestions for future research", *International Small Business Journal*, vol. 31, n. 4, pp. 357-383.
- ZILS M., HOWARD M., HOPKINSON P. (2024), "Circular economy implementation in operations & supply chain management: Building a pathway to business transformation", *Production Planning & Control*, DOI: 10.1080/09537287.2023.2280907
- ZUCCHELLA A., URBAN S. (2019), *Circular Entrepreneurship. Creating Responsible Enterprise*. Palgrave Macmillan.

Is Passion a Driver of Sustainable Entrepreneurship? An Autobiographic Analysis of Fashion Entrepreneurs

CECILIA PASQUINELLI¹ SERENA ROVAI² MATILDE MILANESI³ SIMONE GUERCINI⁴

Abstract

Sustainable entrepreneurship combines the identification and development of profitable opportunities with sustainability goals. Sustainability orientation is significantly influenced by the specificities of the entrepreneurial identity, which is a widely studied concept deserving dedicated research efforts to connect with sustainable entrepreneurship. Further investigation is required to enhance our understanding of the primary factors influencing the development of entrepreneurial identity in sustainable entrepreneurship, with passion being an aspect that has received minimal attention.

This work-in-progress paper expands knowledge on the sustainable entrepreneur's identity as a set of factors boosting and shaping sustainable entrepreneurship. Particularly, the focus is on a theoretical and empirical exploration of the phenomenon of passion throughout the entrepreneurial process oriented to sustainability. By adopting autobiography as a research approach and methodology, this study explores the entrepreneur's point of view on passion, its essence, formation and impact on the entrepreneur's decision-making and sustainable business venture. To what extent does passion contribute to sustainable entrepreneurship from the entrepreneur's point of view? How and to what extent does passion motivate and explain decision-making and actions according to the entrepreneur's reflective self-narration?

Preliminary results revealed that passion significantly emerged in the entrepreneurs' self-narration as a driver alongside their personal and professional growth path. Passion emerges as a training-driven and experience-driven phenomenon rather than an innate and natural propensity. Furthermore, the entrepreneur's perception and awareness of being in the condition to achieve concrete sustainability goals, based on skills, competencies and first-hand experience, seem to mediate the path from individual passion to a sustainable entrepreneurial venture.

Framing of the research. *Sustainable entrepreneurship frames the identification and development of profitable opportunities with sustainability goals. Sustainable entrepreneurship generates hybrid organisational forms combining "demand-based market logic with a need-based social logic" representing an organisation's social and environmental footprint (Stubbs, 2017: 332). Entrepreneurial activities producing solutions to social inequality and environmental degradation, rather than causing them, are considered a new field of research, still in its infancy due to the limited understanding of the nature of this phenomenon (Munoz and Cohen, 2018).*

Diverse research approaches emerged concerning sustainable entrepreneurship. Entrepreneurship theory perspectives have focused on intertwining sustainable development and the entrepreneurship process alongside the business idea's discovery, creation and exploitation (Terán-Yépez et al., 2020). Profiling and understanding the entrepreneur as an individual who can effectively frame economic, social and environmental dimensions into an organisation are at the core of this agenda (Young and Tilley, 2006). The entrepreneur's characteristics and attitudes have been under scrutiny as explanatory variables of sustainable entrepreneurship, such as knowledge and skills, motivations and intentions, values and attitudes, moral cognition, business orientation and entrepreneurial self-efficacy (i.e., belief in oneself capability to perform a task) (Munoz and Cohen, 2018). The sustainability orientation is significantly influenced by the specificities of the entrepreneur's identity, which, consequently, deserves dedicated research efforts in the sustainability domain. Beyond the cognitive mechanisms activated by life experiences, motivations and intentions emerged as the most critical factors of sustainable venturing, along with a "transformative mindset" pushing decision-making and actions (Munoz and Cohen, 2018).

Further investigation is required to enhance our understanding of the primary factors influencing the development of entrepreneurial identity in sustainable entrepreneurship, with passion being an aspect that has received limited attention (Mmbaga et al., 2020). Scholars have scrutinised how passion manifests as an entrepreneurial activity, whether through

¹ University of Napoli Parthenope
e-mail: cecilia.pasquinelli@uniparthenope.it

² University of Napoli Parthenope
e-mail: rovais@excelia - group.com

³ University of Firenze
e-mail: matilde.milanesi@unifi.it

⁴ University of Firenze
e-mail: simone.guercini@unifi.it

conventional entrepreneurship or via unconventional paths within collective "tribes" (Biraghi et al., 2018; Cova and Guercini, 2016).

Passion has evolved into a pivotal component of identity, playing a crucial role in driving entrepreneurship presently and significantly influencing entrepreneurial intention (Fayolle and Linan, 2014), which is fundamental to entrepreneurial endeavours (Shah and Tripsas, 2007). In a study conducted in 2017, Bao et al. examined the relationship between entrepreneurial passion, opportunity recognition, and entrepreneurial behaviour, revealing that individuals with high enthusiasm for entrepreneurship were more likely to identify and launch new ventures (Bao et al., 2017). These studies draw upon Cardon et al.'s (2009) definition of entrepreneurial passion, which refers to the positive emotions experienced through engagement in entrepreneurial activities pertinent to the entrepreneur's self-identity. Entrepreneurial passion is understood as emerging when entrepreneurs feel strong positive emotions towards a particular entrepreneurial endeavour or "domain" they engage in, such as inventing, founding, and developing. They perceive this activity or "domain" as integral to their self-identity (Cardon et al., 2013). Besides the three activities of inventing, founding, and developing, entrepreneurial passion can be directed to other domains that represent the source of passion and what fuels it and drives entrepreneurial activity. Cardon et al. (2017) raise the question "Passion for what?" and identify six major sources of entrepreneurial passion: passion for growth, passion for people, passion for the product or service, passion for inventing, passion for competition, and passion for a social cause.

Following this line of reasoning, passion-driven entrepreneurship was analysed concerning different domains such as hobbies (Milanesi, 2018), cultural and artistic events (Pagano et al., 2018), hospitality (Pedeliento et al., 2018), and digital contexts as in the case of YouTube autopreneurs (Mardon et al., 2018). A literature review has evidenced that the current research is mainly focusing on the entrepreneurial passion perspective and evidencing the aspects related to domain passion or both the former and the latter perspectives' role in the entrepreneurial process. All the cases analysed do not seem to merely belong to the classic model of the entrepreneurial process (Reynolds & White, 1997) or the end-user entrepreneurial process (Shah & Tripsas, 2007). However, those company cases show a joint entrepreneurial process originated by domain and entrepreneurial passion, which has been limitedly analysed until now, according to the authors. Therefore, we wonder whether sustainability can be considered a domain of entrepreneurial passion and a driving force behind sustainable entrepreneurship.

Purpose of the paper. This paper expands knowledge on the sustainable entrepreneur's identity as a set of factors boosting and shaping sustainable entrepreneurship. Particularly, the focus is on a theoretical and empirical exploration of the phenomenon of passion throughout the entrepreneurial process oriented to sustainability. Through the autobiographic methodology, this research adopts the entrepreneur's point of view on passion, its essence, formation and impact on the entrepreneur's decision-making and sustainable business venture. How and to what extent does passion motivate and explain decision-making and actions according to the entrepreneur's reflective self-narration? To what extent does passion, as discussed in the extant literature, contribute to explaining sustainable entrepreneurship?

Methodology. From a methodological perspective, this research relies on the autobiography methodology to unveil the entrepreneur's self-concept, influencing critical decision-making (Fauchart and Gruber, 2011; Mmbaga et al., 2020). Even though significantly overlooked in business and organisational studies, autobiographies are retrospective self-representations (Hulsink and Rauch, 2021) with the potential to explore entrepreneurial identity.

Beyond being a tool for collecting and analysing data, autobiographies are a research strategy that substantiates the research point of view (Mmbaga et al., 2023), which corresponds to the first-person perspective of the investigated subject (the entrepreneur in our study). This method implies the subjective projection of identity work as an internal and reflective self-narration, giving insight into how the individual experiences the surrounding environment and constructs his/her identity (Mmbaga et al., 2023). The perspective of subjective self-narration may acquire further relevance in sustainable business, for the complexity of going beyond the purpose of economic profitability, potentially heightening the need for individual motivation and self-empowerment.

Storytelling and verbal representations are part of the narrator's entrepreneurial self-identity building and a sensemaking device to manifest identity (i.e. the entrepreneur, Mmbaga et al., 2020; Mmbaga et al., 2023) by giving meaning to actions and events in which the narrator is involved (Albert and Couture, 2013). Stories and life episodes verbally represent the entrepreneur's identity and legitimate the entrepreneur and his/her venture (Down and Warren, 2008).

The key difference with the biographical method concerns the internal "first-person account of thoughts, feelings and relationships" (Hulsink and Rauch, 2021, p. 914), contrasting with the multiple perspectives on the investigated subject given by biographies (Carradus et al., 2020). Autobiographies steer "internal self-reflection" through the reconstruction of one's life history, the critical moments of understanding and thoughts and cognition, emotions, and interactions with other actors in the form of temporal junctures, events and actions that have built the individual identity (Mmbaga et al., 2023). Unfolding processes, dynamic events and evolving individuals and organisations are under scrutiny through life history data (Hulsink and Rauch, 2021). Autobiographies allow insights into the organisation leaders' vocation and their challenges in translating their vocation into organisational practices (Corradus et al., 2020). Sense of self and sense of place (the organisational and the broader contextual and geographical environments) are the outcomes of this explorative technique.

Despite the social desirability bias to be considered when collecting and analysing data (particularly relevant when dealing with sustainability in both its social and environmental dimensions), autobiographies have been recently rediscovered to reach fruitful insight into individuals' feelings of suitability for being entrepreneurs, the challenges faced to translate their ideas into practices, and to dig knowledge into success and failure factors in the entrepreneurial venture

(Carradus et al., 2020). Besides, autobiographic narratives “represent not only an exercise in fact, but also one in which the writer chooses stories that can help create a positive narrative identity, perhaps to enhance self-image and reputation” (Mmbaga et al., 2023, p. 248).

Empirically, this study focuses on multiple case studies (Eisenhardt, 1989) to elaborate theory from autobiographies (Mmbaga et al., 2023). The object of analysis has been the entrepreneurial venture related to three Italian companies in the sustainable fashion industry (i.e., shoes, clothing, and textiles). Case Alpha, Case Beta and Case Gamma achieved a sustainable brand positioning according to the entrepreneurial choices over the business venture. The empirical analysis aims to explore the evolution of the entrepreneurial venture, drawing attention to the entrepreneur’s individual experience and the role of passion towards the definition of a sustainable business. The three cases were selected to fit the theoretical category (Eisenhardt, 1989) of firms with a sustainability vision whose stories and identities are tightly linked to the individual founder pursuing and personally committed to sustainability.

Case Alpha was founded in 2018 in Prato (Italy). The firm has 13 staff members and is a sustainable fashion brand of regenerated clothes, entirely locally produced. In Italy, it coordinates the collection of old clothes and the regeneration process into denim, cashmere, and cotton garments, and it is committed to strict control of the supply chain. It distributes its garments online and through resellers in Italy, Europe, and Canada. The firm’s turnover shifted from 650,000 Euro in 2020 to 3 million in 2022, drawing investors’ attention. Corporate sustainability is framed by using recycled and regenerated textiles, a pre-sale policy against overproduction and waste, reusable packaging, social responsibility and transparent business practices.

Case Beta was founded to use sustainable innovations to transform the footwear industry. With Zipshoe crowdfunding, the firm was established on Kickstarter in 2017 and was able to raise over \$1 million in pre-orders. Over the years, the startup has continued to innovate and stay true to its mission—that anything can be changed—. While analysing the fashion market, its founders realised that shoes, particularly sports shoes, had remained distant from sustainability concerns and practices even though young consumers were concerned about sustainability and their individual contribution to it. The founders stay true to their mission to modify the market and have established more than 70 partnerships with other luxury and fashion brands to share their R&D knowledge to further develop a sustainable change. In 202, it was certified as a B Corporation.

Case Gamma was founded in 1943, and is now one of the leading companies in the textile industrial district of Prato. The firm produces a wide range of undyed regenerated wool colours and luxury fabrics with different constructions, weavings and finishings, all made with recycled wool. The firm pursues growth and expansion objectives based on the values of sustainability, a zero-waste system, sustainable design, and traceability. The firm’s turnover in 2022 approached 100 million euros, over 90% of which came from foreign markets.

This study collected data through primary and secondary sources (i.e., websites and social media), including texts and videos reporting the entrepreneurs’ first-person perspective and representation of the self throughout their entrepreneurial venture. In-depth interviews with the entrepreneurs were carried out. The interview process focused on the process of becoming an entrepreneur and the subsequent evolutions: a first round of questions followed an unstructured interview scheme to reduce the researcher’s intrusiveness (Meyer, 2020), while a second round of questions followed a semi-structured scheme further stimulating the interviewee to elicit events and actions remarking life history phases, critical moments and the interviewee’s cognitive and emotional engagement, interactions with other actors. Different rounds of interviewing are sought to overcome the issues of time limitation and limited reflection through an intrusive data collection technique (Mmbaga et al., 2023). Different interview rounds may consolidate the interviewer-interviewee relationship, enabling the interviewees’ “intimate account of cognition, emotions and relationships that are central to identity formation” (Mmbaga et al., 2023, p. 248). The secondary data sources provided additional self-reflection traces, helping mitigate the limitations of the interviewing process in the autobiographical method.

All the collected textual data were analysed through qualitative content analysis (Krippendorff, 2004), holistically deriving insights and meanings from the text and reducing the decontextualization of meaning inherent to quantitative content analysis. A systemic coding process was undertaken by combining inductive and deductive approaches (Cho and Lee, 2014). Texts (i.e., website texts and video transcripts recording the entrepreneurs’ voice, and interview transcripts) were, first, analysed without adopting initial codes, letting codes emerge from the text; subsequently, a deductive approach to coding ensured the systemic analysis of text according to the key dimensions that the auto-biography allows eliciting according to extant literature (e.g., life history phases, critical moments, interactions). A flexible pattern matching (Bouncken et al., 2021) develops categories and identifies relationships framing passion and its role in the entrepreneur’s personal and professional path.

Results. This work-in-progress study has produced some preliminary results.

In both Alfa, Beta and Gamma cases, individual passion emerged as not just an innate and natural propensity of the individual consumer, who then becomes an entrepreneur. The entrepreneurial venture in sustainability results from an articulated combination of unconventional factors. As evidenced, previous streams of research have contributed to the debate on the process that leads to “unconventional” forms of entrepreneurship (Cova & Guercini, 2018) and specifically from passion to business (Chen et al., 2015; Biraghi et al., 2018; Cova & Guercini, 2016; Guercini & Ceccarelli, 2020; Cardon et al., 2017). The emerging autobiographical narratives of the sustainable entrepreneur raise the following three points which will inform subsequent analysis.

Firstly, the entrepreneur's passion widely emerged in narrating the individual path of personal and professional growth. Their passion for sustainability has been shown to impact on how they conceive their role in the market and the company's positioning as "non-competitive", as firms are active in implementing and sharing sustainability practices (Lawrence et al., 2006). Accordingly, in their narratives about their professional growth associated with the creation and development of their venture, the entrepreneurs have recalled the significance of the role of "activators" of sustainable business networks that the firms have, overcoming the competition logics, business network conclusions and boosting cooperative schemes through connections (Halinen et al., 1999), since the early phases of development.

Secondly, in the sustainable entrepreneurs' self-representation, the narrated passion is a training-driven and experience-driven phenomenon. In the process of translating and transforming passion into a business (Biraghi et al., 2018; Cova & Guercini, 2016), the entrepreneurs' self-account leaves behind the concept of passion as an innate and natural propensity. Sustainable entrepreneurial venturing combines a training-driven and an experience-driven passion for sustainable fashion. About training-driven passion, formal education, as an opportunity to learn skills and competencies through university degrees (fashion learning programs), and on-the-job training in the early phase of professional development framed the entrepreneurs' passion. The second component (i.e. experience-driven passion) concerns the entrepreneurs' immersion in territorial contexts where the environmental and social issues were highly visible and a lived experience (i.e., travel and work experience in emerging countries where they had a first-hand experience of extreme consequences of environmental pollution and social inequality).

Thirdly, the entrepreneur's perception and awareness of being in the condition to achieve concrete goals seems to mediate the path from passion to the entrepreneurial venture. This emerging state of mind resounds with entrepreneurial self-efficacy (Chen et al., 1998), whose connection with passion was discussed by Cardon and Kirk (2013), framing entrepreneurial persistence. Our study's results shift the focus to the enterprise start-up phase, providing preliminary evidence of the entrepreneurs' understanding of skills and competencies, combined with their lived experience, as boosters of consciousness, sense of responsibility, and intimate mechanisms connoting passion as a driver of sustainable entrepreneurship. From the entrepreneurs' self-portrait, skills, competencies and first-hand experiences compose the entrepreneur's background, substantiating cognition and feeling of being able to find concrete, valuable solutions and make an impact.

Research limitations. This is a work-in-progress paper that, relying on an initial empirical study, currently presents various limitations. In autobiography methodology, various issues should be considered, including the researchers' positionality and the relation with the object of analysis, especially concerning interviews, and the social desirability bias. Nevertheless, the constructivist nature of the adopted methodology recalls our attention to the knowledge built by human representation resulting from context- and goal-dependent sensemaking (Albert and Couture, 2013).

The analysis mainly focused on verbal representation and texts, with limited (and non-systematic) analysis of visual data that especially online sources may provide (e.g., social media accounts).

Managerial implications. Significant implications concern the modalities to nurture sustainable entrepreneurship, which is fundamental to addressing several contemporary societal challenges. The results of this study suggest the relevance of the role of "activator" in the field, educational programs, and exposure to lived experiences in framing passion and its capacity to trigger entrepreneurial development. Education organisations and those in charge of boosting and accelerating sustainable entrepreneurship should consider the results emerging from the proposed analytical perspective, as well as NGOs and consulting companies focusing on sustainability that could positively impact a change in the business.

Originality of the paper. This study is built at the intersection of two significant gaps in the literature. First, understanding passion as a driver of sustainable entrepreneurship potentially adds to the existing conceptualization and discussion of entrepreneurial passion. Second, it expands entrepreneurship studies by adopting autobiographies, a research approach and methodology that has remained largely underexploited.

References

- ALBERT M.N., COUTURE M.M. (2013), *The Support to an Entrepreneur: From Autonomy to Dependence*, Sage Open, vol. 3, n. 2: 2158244013492779.
- BAO J., ZHOU X., CHEN Y. (2017), "Entrepreneurial passion and behaviors: Opportunity recognition as a mediator", *Social Behavior and Personality: an International Journal*, vol. 45, n. 6, pp. 1211-1220.
- BIRAGHI S., GAMBETTI R., PACE S. (2018), "Between tribes and markets: The emergence of a liquid consumer-entrepreneurship", *Journal of Business Research*, vol. 92, pp. 392-402.
- BIRAGHI S., GAMBETTI R.C., GIORGI E. (2018), "Entrepreneurial passion and sustainable business models: Evidence from social enterprises", *Journal of Business Ethics*, vol. 148, n. 3, pp. 683-701.
- BOUNCKEN R.B., QIU Y., SINKOVICS N. ET AL. (2021), "Qualitative research: extending the range with flexible pattern matching", *Review of Managerial Science*, vol. 15, n. 2, pp. 251-273.
- CARDON M.S., KIRK C.P. (2015), "Entrepreneurial Passion as Mediator of the Self-Efficacy to Persistence Relationship", *Entrepreneurship Theory and Practice*, vol. 39, n. 5, pp. 1027-1050.
- CARDON M.S., GLAUSER M., MURNIEKS C.Y. (2017), "Passion for what? Expanding the domains of entrepreneurial passion", *Journal of Business Venturing Insights*, vol. 8, pp. 24-32.
- CARDON M.S., GREGOIRE D.A., STEVENS C.E., PATEL P.C. (2013), "Measuring entrepreneurial passion: Conceptual foundations and scale validation", *Journal of Business Venturing*, vol. 28, n. 3 pp. 373-396.

- CARDON M.S., WINCENT J., SINGH J., DRNOVSEK M. (2009), "The nature and experience of entrepreneurial passion", *Academy of Management Review*, vol. 34, n. 3, pp. 511-532.
- CARRADUS A., ZOZIMO R., DISCUA CRUZ A. (2020), "Exploring a Faith-Led Open-Systems Perspective of Stewardship in Family Businesses", *Journal of Business Ethics*, vol. 163, n. 4, pp. 701-714.
- CHEN C.C., GREENE P.G., CRICK A. (1998), "Does entrepreneurial self-efficacy distinguish entrepreneurs from managers?", *Journal of Business Venturing*, vol. 13, n. 4, pp. 295-316.
- CHEN M., WANG H., YANG S. (2015), "The impact of entrepreneurial passion on firm performance: A contingent model", *Journal of Business Venturing*, vol. 30, n. 6, pp. 761-776.
- CHO J.Y., LEE E.H. (2014), "Reducing confusion about grounded theory and qualitative content analysis: similarities and differences", *Qualitative report*, vol. 19, n. 32.
- COVA B., GUERCINI S. (2016), "Passion et entrepreneuriat: vers un entrepreneur tribal?", *Revue de l'Entrepreneuriat*, vol. 15, n. 2, pp. 15-42.
- DOWN S., WARREN L. (2008), "Constructing narratives of enterprise: clichés and entrepreneurial self-identity", *International Journal of Entrepreneurial Behaviour & Research*, vol. 14, n. 1, pp. 4-23.
- EISENHARDT K.M. (1989), "Building Theories from Case Study Research", *The Academy of Management Review*, vol. 14, n. 4, pp. 532-550.
- FAUCHART E., GRUBER M. (2011), "Darwinians, Communitarians, and Missionaries: The Role of Founder Identity", in *Entrepreneurship of Management Journal*, vol. 54, n. 5, pp. 935-957.
- FAYOLLE A., LIÑÁN F. (2014), "The future of research on entrepreneurial intentions", *Journal of Business Research*, vol. 67, n. 5, pp. 663-666.
- GUERCINI S., COVA B. (2018), "Unconventional entrepreneurship", *Journal of Business Research*, vol. 92, pp. 385-391.
- GUERCINI S., CECCARELLI D.M. (2020), "Passion driving entrepreneurship and lifestyle migration: Insights from the lutherie of Cremona", *Journal of International Entrepreneurship*, vol. 18, n. 3, pp. 373-392.
- HALINEN A., TORNROOS J.M. (1999), The Role of Embeddedness In The Evolution Of Business Networks *Industrial Marketing Management* vol. 28, n. 3, pp 213-227
- HULSINK W., RAUCH A. (2021), "About the lives and times of extraordinary entrepreneurs: The methodological contribution of autobiographies to the life course theory of entrepreneurship", *Journal of Small Business Management*, vol. 59, n. 5, pp. 913-945.
- KRIPPENDORF K. (2004), *Content Analysis: An Introduction to Its Methodology*, London, SAGE Publications.
- LAWRENCE T.B., HARDY C., PHILLIPS N. (2006), "Institutional effects of interorganizational collaboration: The emergence of proto institutions", *Academy of Management Journal*, vol. 49, n. 5, pp. 819-840.
- MARDON R., MOLESWORTH M., GRIGORE G. (2018), "YouTube Beauty Gurus and the emotional labour of tribal entrepreneurship", *Journal of Business Research*, vol. 92, pp. 443-454.
- MEYER D.M. (2020), *Qualitative Research in Business & Management*, 3rd ed, London, SAGE Publications.
- MILANESI M. (2018), "Exploring passion in hobby-related entrepreneurship. Evidence from Italian cases", *Journal of Business Research*, vol. 92, pp. 423-430.
- MMBAGA N., MATHIAS B., SMITH A. (2023), "Autobiographies and Identity: using autobiographies to study identity in organisational research", in Mmbaga N., Mathias B., Smith A. (eds.), *Handbook of Research Methods for Studying Identity In and Around Organisations*, Edward Elgar.
- MMBAGA N.A., MATHIAS B.D., WILLIAMS D.W., CARDON M.S. (2020), "A review of and future agenda for research on identity in entrepreneurship", *Journal of Business Venturing*, vol. 35, n. 6, pp. 106049.
- MUÑOZ P., COHEN B. (2018), "Sustainable entrepreneurship research: Taking stock and looking ahead", *Business Strategy and the Environment*, vol. 27, n. 3, pp. 300-322.
- PAGANO A., PETRUCCI F., BOCCONCELLI R. (2018), "A business network perspective on unconventional entrepreneurship: A case from the cultural sector", *Journal of Business Research*, vol. 92, pp. 455-464.
- PEDELIENTO G., BETTINELLI C., ANDREINI D., BERGAMASCHI M. (2018), "Consumer entrepreneurship and cultural innovation: The case of GinO12", *Journal of Business Research*, vol. 92, pp. 431-442.
- REYNOLDS P.D., WHITE S.B. (1997), *The entrepreneurial process: economic growth, men, women, and minorities*. Westport: CT., Quorum Books.
- SHAH S.K., TRIPSAS M. (2007), "The accidental entrepreneur: The emergent and collective process of user entrepreneurship", *Strategic entrepreneurship journal*, vol. 1, n. 1-2, pp.123-140.
- STUBBS W. (2017), "Sustainable Entrepreneurship and B Corps", *Business Strategy and the Environment*, vol. 26, n. 3, pp. 331-334.
- TERÁN-YÉPEZ E., MARÍN-CARRILLO G.M., CASADO-BELMONTE M., ET AL. (2020), "Sustainable entrepreneurship: Review of its evolution and new trends", *Journal of Cleaner Production*, vol. 252, 119742.
- YOUNG W., TILLEY F. (2006), "Can businesses move beyond efficiency? The shift toward effectiveness and equity in the corporate sustainability debate", *Business Strategy and the Environment*, vol. 15, n. 6, pp. 402-415.

Social Innovation: a literature review mapping intellectual structure of the field

LORENA GONZALEZ¹ ELENA CASPRINI²

Abstract

This article is based on a systematic review of literature on social innovation with the purpose of understanding and defining the current intellectual structure of this research area. This study aims to serve as a starting point for advancing theory on social innovation. Previous literature has shown that as a field of study is highly underdeveloped while at the same time it is very fragmented. This has given rise to the need to find a clear visualization of what are the most relevant topics related to social innovation. We used a systematic review of the literature using bibliometric techniques for analyzing 132 peer-reviewed articles published in journals ranked as 4 and 4 by the Chartered Association of Business Schools 2021. Using a bibliographic coupling analysis, we identified five clusters. Our analysis has implications for researchers looking to advance research on social innovation as well as for firms looking to positively impact society.*

Key words: social innovation; social entrepreneurship; social entrepreneur; social value

Framing of the research. Social Innovation is a topic highly debated in academia. Even though some of the first studies in this field were published in the early 1990's, it is a topic that has gained relevance in the last decades. Despite of the high interest in furthering knowledge on this field, there are also high levels of heterogeneity in terms of disciplines and theoretical approaches exploring this topic. Management scholarship is no exception to this and studies on social innovation have been developed from diverse perspectives such digitalization and other types of innovation (Fosso Wamba et al., 2021; Mariani et al., 2023), collaboration among different sectors (Lenz and Shier, 2021), and corporate social innovation (Dionisio and de Vargas, 2020). However, among these perspectives, there is a great body of literature studying social innovation as part of, and in connection with, research on social entrepreneurship.

Lortie and Cox (2018) found that social innovation is one of the most related areas concerning studies of social entrepreneurship along with other topics such as corporate social responsibility (CSR), bottom-of-pyramid (BOP), Non-profit management, and impact investment. Based on their findings, these authors called for further research in understanding differences in the antecedents of social innovation and social entrepreneurship and whether social innovations produced by social enterprises differ from social innovations produced by traditional forms of organizations.

On the other hand, Phillips et al. (2015) also build on theory on social entrepreneurship in order to understand the relationship between social entrepreneurship and social innovation, as well as identifying frameworks that bring together these two topics. They found that social innovations stem from the interaction among different actors within the social system and developed through collective learning. Multisector collaboration and partnerships are indeed, one of the common grounds among studies on social innovation despite of the existing heterogeneity and lack of consensus in what is social innovation.

Another line of research growing in recent years is that of digital technologies as means that could be used for achieving social impact. Within this line of studies, we found that Dionisio et al., (2023) examined the evolution of the concept of digital social innovation and whether it connects (and in which way) with the sustainable development goals of the United Nations.

Moreover, in addition to showing a vast number of studies examining theories and frameworks on traditional entrepreneurship and innovation and how they relate to social innovation and social entrepreneurship, research on social innovation is concentrated for most part in qualitative methods among which there is prevalence for empirical studies, (Desa and Koch, 2014; Ulfah and Dhewanto, 2015) which can be explained by the fact that it is a stream of research still in early stages.

Purpose of the paper. Given the great fragmentation faced by this field it is important to understand and clearly define the current intellectual structure of this research area to advance theory on this topic. So far, research on social innovation has grown in terms of number of contributions, with many of them reviewing current literature. However, there is a lack of depth in the development of the different sub-fields of study stemming from this topic. Considering this idea, the aim of this paper is to analyze the main contributions to the literature on social innovation by identifying the

¹ e-mail: gonzalezfumerolorena@gmail.com

² University of Siena
e-mail: elena.casprini@unisi.it

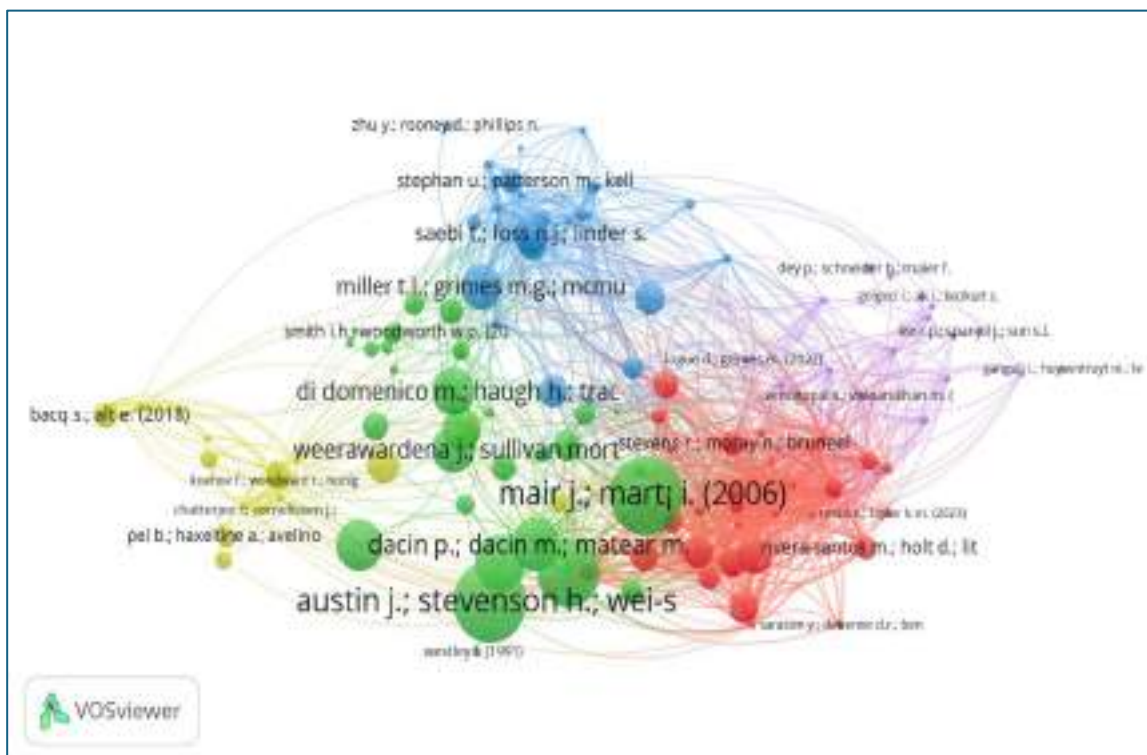
main general areas in which the current studies have concentrated as well as key research gaps that could guide the path for a larger study on Social Innovation, thus serving as a foundation for a deeper theoretical development.

Methodology. To describe the current structure of the literature on social innovation, we conducted a first exploration of current research on social innovation using the Scopus data base to find articles based on previous reviews on social innovation. We used the terms “social Innovation” AND “review” to search within title, abstract, and keywords to search articles within the subject area of Business, Management and Accounting that were published in English. This initial search resulted in 114 articles from which a sample of 27 documents was extracted. These articles were examined to identify the most common keywords used by other authors to search for studies on social innovation. Furthermore, we performed a systematic review on these 27 documents in order to better positioning our paper.

Once we completed the identification of keywords, we built a new search string in Scopus with the terms “social innovat*” OR “creat* shar* value*” OR “csi” OR “social entrepr*” OR “social enterpr*” OR “purpose* organi*ation*” OR “hybrid organi*ation*”. This was the best combination of keywords to be used for searching on the database within title, abstract and keywords. In addition, to these search terms we considered all articles published up to December 2023 (included), published in English within Business, Management, and Accounting. The search displayed a total of 9181 articles which we ranked using the Chartered Association of Business Schools ranking and selected those articles ranked in Journals classified as 4 and 4* (top journals). Doing this, we extracted 1271 articles. After carefully screening the abstracts, we were left with a final sample of 132 articles.

To analyze the data, we conducted a bibliometric analysis using bibliographic coupling. Bibliometric analysis is considered a rigorous method for exploring and analyzing large volumes of scientific data while bibliographic coupling provides a representation of the current structure of a research field (Casprini et al., 2020; Donthu et al., 2021). Using VosViewer software, we mapped the data selected in our sample which allowed us to identify 5 different clusters as illustrated in figure 1.

Figure 1



Results. From a total of 132 articles considered for the analysis, 126 were part of one of the five clusters identified. Consequently, the remaining 6 articles did not have any connection with other documents. Therefore, they were excluded from the bibliographic coupling analysis. Based on the total number of citations of each cluster, the analysis present cluster 1 as the most influential one with 13371 citations.

Cluster 1

The first cluster is the largest cluster with 33 documents. This network is highly dominated by research on the initial stages of entrepreneurial activities and the intersection between strategy and organization theory and social entrepreneurship theory. Articles covering these topics represent 60% of the documents in this network. In addition, four documents focused on the potential of Tourism Social Entrepreneurship for the transformation of communities.

Within this cluster, there are three documents offering insightful theory with the potential to develop grounds for further studies, two of them are based on reviews of previous literature. The first one is the work of Stevens et al., (2015) who identified dimensions for delineating social and economic missions. These authors built on theoretical constructs to propose different dimensions (measures to capture value, organizational identity, and attention to social and economic goals) for understanding the relationship and navigating tensions between social and economic missions of social enterprises.

Another relevant paper in this cluster is Choi and Majumdar, (2014). In their work, they propose to approach research on social entrepreneurship defined as a conglomerate of more than one sub-concept (social value creation, the social entrepreneur, the social entrepreneurship organization, market orientation and social innovation).

In addition to the two articles mentioned above, within this cluster is the work by Rawhouser et al. (2019). Emerging in the second half of the period covered by this cluster, this study examines previous research on social impact. In this review of the literature, the authors find a high level of heterogeneity among the different studies that had been conducted with the aim to establish a definition of this concept. As a result, they propose a typology of four different approaches stemming from two dimensions to conceptualize social impact. The two dimensions are: according to the social impact process and according to the generatability of the application.

Cluster 2

This network covers the largest period from 1991 until 2020, with 29 documents with the most part concentrated on issues related to social entrepreneurship education and learning with eight documents, and another important group of documents examining different aspects of social entrepreneurship. The rest of the articles in this cluster examine topics related to social innovation, social entrepreneur, and the creation of social enterprises. This cluster represents approximately 59% of the total citations among the five clusters, which puts it forward as the most influential network in this analysis.

As part of this network, the work by Dacin et al. (2010) presents the highest degree of centrality. This article proposes a different approach to social entrepreneurship studies concluding that the greatest opportunities for researchers interested in this field are in studying this concept through the lens of a theories and frameworks related to regular entrepreneurship applied to the social context.

Moreover, another document that stands out in this network is the one by Dacin et al., (2011) diving into the promise of social entrepreneurship as a new domain of study and propose avenues for future research. Among opportunities to further studies on social entrepreneurship, by examining previous contributions to the conceptualization of social entrepreneurship they propose that to advance theory on this topic it could be useful to focus on outcomes and contexts. In doing so, studies could offer meaningful ways to understand this concept from a theoretical and practical perspective.

Finally, one third article in this network that proposes relevant theoretical grounds for the development of further research is the one by Zahra et al., (2009). This study reviews the concept of social entrepreneur proposing three different typologies that determine the way in which social entrepreneurs identify opportunities, determine their impact, and put together the resources needed to pursue them. Furthermore, they highlight the emergence of ethical issues stemming from linking economic thinking with the generation of social wealth, understood as a metric to measure how social entrepreneurship contributes to the maximization of total wealth.

Cluster 3

This group of articles shows the highest density of connections, and it comprises the same period as cluster 1. This cluster shares the highest density of connections, where the work by Miller et al., (2012) results as the one with the highest degree of centrality. This article discusses the role of compassion in encouraging the creation of social ventures, building on theory about the relationship between social entrepreneurship and compassion focusing on affective and cognitive mechanisms and they offer contribution not only for the social entrepreneurship field but also for entrepreneurship research.

Vedula et al. (2019) discussed the concept of entrepreneurship for the public good by reviewing literature on social and environmental entrepreneurship to dive into the evolution (with converging paths) of these two concepts as well as identifying specific areas of collaboration between them. They propose how the two streams can be integrated to understand how entrepreneurship as a field of study can contribute to the public good.

Finally, Lazzarini (2020) proposed a framework for explaining how three forms of organization (public bureaucracy, public-private partnership, and social enterprises) support social value creation. This document offers insight on measurement of social impact which is a highly underexplored topic within social entrepreneurship research.

On the other hand, Saebi et al., (2019) offer an analysis relevant for advancing studies on social entrepreneurship. By reviewing literature on social entrepreneurship, they propose that theory on social entrepreneurship can benefit from using a multilevel analysis (at the individual, organizational and institutional level) approaching social entrepreneurship based on two dimensions, one concerning whether the social value is created by or for the beneficiaries, and the second one according to the level of integration between social and commercial activities.

Cluster 4

Cluster 4 unfolds within the period of 2012 to 2023. Topics examined by the articles in this network address different perspectives on innovation research connecting different theories, approaches, and concepts with their ability to impact society. This cluster is for most part concentrated in articles touching on different aspects of social entrepreneurship such as prosocial power and pro social perspectives, as well as documents examining the role of human capital and communities in the success and development of social entrepreneurial initiatives.

Central in this cluster we find the work by Koehne et al., (2022) who examined the role of the transnational social entrepreneur and their ability to impact, whether positive or negatively, the lives of disadvantaged communities. This article stands as the one with the highest number of shared references in relationship with the rest of the documents in this group. Moreover, the most influential article within this cluster is the one published by van der Have and Rubalcaba, (2016) addressing the evolution, content, and scope of Social Innovation across different disciplines as a nascent field of research. The authors highlight importance of multi and intradisciplinary approaches in understanding and defining Social Innovation, emphasizing that despite the high levels of fragmentation of this field, it should be studied taking into consideration two main core conceptual elements. The first one, that social innovation implies change in social relations, systems, and structures, and that these change aims to address the need to solve an important social problem. This is one of the first systematic reviews using bibliographic data to describe the intellectual structure of this research field.

In addition, from the 22 documents included in this network, Estrin et al., (2016) highlighted the importance of human capital in entering entrepreneurship by extending human capital theory to social entrepreneurship. In contrast with previous studies addressing this area, they highlight the relevance of “taking into account ability and skills to understand who is more likely to become an entrepreneur” (p.465) (add page number).

Bacq and Aguilera, (2022) on the other hand, address the role of community engagement in generating social impact. In their study, these authors identified a continuum of community roles ranging from passive beneficiaries to highly active entrepreneurial social change agents, and a set of different typologies that describe communities.

Cluster 5

This cluster is the smallest one in terms of number of documents and lowest number of total citations with 301, however it is the third one in terms of density of connections, covering a period of eight years of research. This group of articles is concentrated in the field of strategy, organization, and innovation. Unlike most of the clusters described above, in which there is an evident dominance of research focused on social entrepreneurship, traditional entrepreneurship and innovation, this network includes an important number of articles specifically addressing the topic of social innovation (Fu et al., 2023; Ghauri et al., 2023; Kruse et al., 2019; Marcy, 2015; Steinfeld and Holt, 2019; Vassallo et al., 2019; Venugopal and Viswanathan, 2019; Viswanathan and Sreekumar, 2019). In addition, this cluster is dominated by articles addressing contexts of grand challenges, bottom of the pyramid and bottom-up approaches to social innovation as well as complex humanitarian problems.

Within this network, the article by Venugopal and Viswanathan (2019) is the one with the highest degree of centrality. Through empirical analysis of a sample of social enterprises operating in different country contexts, they have developed a process of “facilitated institutional work” to implement social innovation. This model is characterized by the participation of local communities in driving institutional changes to facilitate the implementation of social innovation. In addition, the most influential paper on this network (the one with the highest number of citations) is the work of Logue and Grimes (2022) linking the creation of digital platforms for enabling social innovation and institutional theory.

Discussion

As discussed in the literature review section of this paper, the high level of fragmentation among studies concerning social innovation is evident. It is also evident the fact that social innovation on its own as a line of research is highly under explored and lacks depth and structure. Furthermore, most of the efforts of many scholars looking to explore different paths to social transformation and social impact is focused on the study of social entrepreneurship linking it to a wide spectrum of theories where in most cases are theoretic foundations already established in the study of traditional entrepreneurship.

Little attention has been paid to the potential of social entrepreneurship and social innovation in the context of education. Evidence of this is the distribution of the articles in cluster two, where even though the proportion of articles within this network is even the most cited documents in the cluster continue to fall within the line of social entrepreneurship as an extension of traditional entrepreneurship. In line with this, one of the main findings of (Batista and Helal, 2023) is the fact that studies examining the relationship between social innovation and education show a time gap of 30 years without published research addressing this connection (1984 and 2015). This represents a potential for developing future lines of research on education related to social entrepreneurship and innovation, and the role of educational institutions in promoting social entrepreneurship and social innovation. Approaching research from this perspective may also be relevant for the achievement of sustainable development as it directly impacts the social development goals.

Moreover, when planning to advance theory on social innovation and social entrepreneurship it can be useful to follow the propositions by van der Have and Rubalcaba, (2016) suggesting that regardless of the discipline, any definition of social innovation should take into account that it implies changes in relationships, systems and structures in order to address to solve an important social issue. While it has been suggested that lack of focus in one aspect of social innovation has constrained the possibilities to build deep theoretic foundations for this field, it is also to acknowledge that the

complexity of this phenomenon requires insights from multiple disciplines beyond management, such as psychology, sociology, and education. However, from a management perspective, one possibility to address social innovation research is to consider as a starting point the suggestion by Choi and Majumdar, (2014) where social innovation is part of a cluster of different concepts that define social entrepreneurship.

As a final consideration of this analysis is to highlight that it is necessary for scholars in this area to start digging deeper rather than growing wider to set strong roots for the development of theory in this field. While there is no doubt of the rigor and validity of previous research, it is necessary to start building grounds for further studies using mixed and quantitative methodologies to obtain results that can be generalized.

In summary, the aim of this review was to analyze the intellectual structure of social innovation and identify the most relevant lines of research connected to this concept. In doing so, analyzed bibliometric data using VosViewer to conduct a bibliographic coupling analysis. From the analysis we obtained five clusters. Overall, research on social innovation is highly overlapped with research on social entrepreneurship due to the very thin boundary between these two concepts. In the results, the second cluster stands out for having the highest number of citations compared to the total number of citations in the other clusters. One key finding of this group of articles is that articles on social entrepreneurship overshadow the potential of studying social innovation and social entrepreneurship in the context of education. Furthermore, the discussion of this analysis also brought attention to the need for expanding knowledge on social innovation as a definition within a group of sub concepts of social entrepreneurship.

Research limitations. Among the limitations of this study, it is to note the fact that the selection of the data was restricted to top ranking journals classified as 4 and 4* by the Chartered Association of Business Schools. Even though this inclusion criterion is rigorous in ensuring that the publications selected offer important advancements in their fields, it would be interesting to widen the scope of coverage of the data to include articles published in journals with different ranking levels. In addition to expanding the range of articles to be analyzed, the bibliographic coupling analysis could be complemented with a co-citation analysis to identify not only how the field of social innovation is structured but also to identify the knowledge bases of this topic.

Managerial implications. Our study has implications for the advancement of theory on social innovation that can benefit organizations from different perspectives. New theory on social innovation can have a positive impact on innovation processes within firms looking to achieve social objectives. Moreover, by enhancing collaborations with relevant stakeholders. And finally, it can be useful for strategic decision-making processes while guiding a path to a sustainable business model.

Originality of the paper. Our study is one of the first reviews on social innovation using bibliographic coupling to map the current intellectual structure of this domain. Even though previous reviews of social innovation literature have used bibliometric analysis we found few studies using bibliographic coupling to proxy of the state of the art of their focal domain, however these studies were not focused on social innovation (Mariani et al., 2023).

References

- BACQ S., AGUILERA R.V. (2022), "Stakeholder Governance for Responsible Innovation: A Theory of Value Creation, Appropriation, and Distribution", *J. Manage. Stud.*, vol. 59, pp. 29-60.
- BATISTA L.F., HELAL D.H. (2023), "Education and social innovation: a framework based on a systematic review", *Innovation: The European Journal of Social Science Research*, vol. 36, pp. 407-433.
- CASPRINI E., DABIC M., KOTLAR J., PUCCI T. (2020), "A bibliometric analysis of family firm internationalization research: Current themes, theoretical roots, and ways forward", *International Business Review*, vol. 29, 101715.
- CHOI N., MAJUMDAR S. (2014), "Social entrepreneurship as an essentially contested concept: Opening a new avenue for systematic future research", *J. Bus. Venturing*, vol. 29, pp. 363-376.
- DACIN M.T., DACIN P.A., TRACEY P. (2011), "Social entrepreneurship: A critique and future directions", *Organ. Sci.*, vol. 22, pp. 1203-1213.
- DACIN P., DACIN M., MATEAR M. (2010), "Social entrepreneurship: Why we don't need a new theory and how we move forward from here", *Acad. Manage. Perspect.*, vol. 24, pp. 37-57.
- DESA G., KOCH J.L. (2014), "Scaling Social Impact: Building Sustainable Social Ventures at the Base-of-the-Pyramid", *Journal of Social Entrepreneurship*, vol. 5, pp. 146-174.
- DIONISIO M., DE SOUZA JUNIOR S.J., PAULA F., PELLANDA P.C. (2023), "The role of digital social innovations to address SDGs: A systematic review", *J. High Technol. Manage. Res.*, vol. 34.
- DIONISIO M., DE VARGAS E.R. (2020), "Corporate social innovation: A systematic literature review", *Int. Bus. Rev.*, vol. 29.
- DONTHU N., KUMAR S., MUKHERJEE D., PANDEY N., LIM W.M. (2021), "How to conduct a bibliometric analysis: An overview and guidelines", *Journal of Business Research*, vol. 133, pp. 285-296.
- ESTRIN S., MICKIEWICZ T., STEPHAN U. (2016), "Human capital in social and commercial entrepreneurship", *J. Bus. Venturing*, vol. 31, pp. 449-467.
- FOSSO WAMBA S., BAWACK R.E., GUTHRIE C., QUEIROZ M.M., CARILLO K.D.A. (2021), "Are we preparing for a good AI society? A bibliometric review and research agenda", *Technological Forecasting and Social Change*, vol. 164.
- FU X., FU X., GHOURI P.N., KHAN H. (2023), "Tackling exigent grand challenges through corporate social innovation: Evidence from the COVID-19 pandemic", *J. Prod.*, *Innovation Manage.* <https://doi.org/10.1111/jpim.12691>
- GHOURI S., MAZZAROL T., SOUTAR G.N. (2023), "Networking benefits for SME members of co-operatives", *J. Coop.*, *Organ. Manage.*, vol. 11.

- KOEHNE F., WOODWARD R., HONIG B. (2022), "The potentials and perils of prosocial power: Transnational social entrepreneurship dynamics in vulnerable places", *J. Bus. Venturing*, vol. 37.
- KRUSE P., WACH D., COSTA S., MORIANO J.A. (2019), "Values Matter, Don't They?-Combining Theory of Planned Behavior and Personal Values as Predictors of Social Entrepreneurial Intention", *J. Soc. Entrep.*, vol. 10, pp. 55-83.
- LAZZARINI S.G. (2020), "The nature of the social firm: Alternative organizational forms for social value creation and appropriation", *Acad. Manage. Rev.*, vol. 45, pp. 620-645.
- LENZ T., SHIER M.L. (2021), "Supporting Transformational Social Innovation through Nonprofit and Local Government Relations: A Scoping Literature Review", *Human Service Organizations Management, Leadership and Governance*, vol. 45, pp. 454-478.
- LOGUE D., GRIMES M. (2022), "Platforms for the people: Enabling civic crowdfunding through the cultivation of institutional infrastructure", *Strategic Manage J.*, vol. 43, pp. 663-693.
- LORTIE J., COX K.C. (2018), "On the boundaries of social entrepreneurship: a review of relationships with related research domains", *International Entrepreneurship and Management Journal*, vol. 14, pp. 639-648.
- MARCY R.T. (2015), "Breaking mental models as a form of creative destruction: The role of leader cognition in radical social innovations", *Leadersh. Q.* 26, pp. 370-385.
- MARIANI M.M., MACHADO I., NAMBISAN S. (2023), "Types of innovation and artificial intelligence: A systematic quantitative literature review and research agenda", *Journal of Business Research*, vol. 155.
- MILLER R., MILLAR R., HALL K. (2012), "New development: Spin-outs and social enterprise: The "right to request" programme for health and social care services", *Pub. Money Manage.*, vol. 32, pp. 233-236.
- PHILLIPS W., LEE H., GHOBADIAN A., O'REGAN N., JAMES P. (2015), "Social Innovation and Social Entrepreneurship: A Systematic Review", *Group and Organization Management*, vol. 40, pp. 428-461.
- RAWHOUSER H., CUMMINGS M., NEWBERT S.L. (2019), "Social Impact Measurement: Current Approaches and Future Directions for Social Entrepreneurship Research", *Entrep. Theory Pract.*, vol. 43, pp. 82-115.
- SAEBI T., FOSS N.J., LINDER S. (2019), "Social Entrepreneurship Research: Past Achievements and Future Promises", *J. Manage.*, vol. 45, pp. 70-95.
- STEINFELD L., HOLT D. (2019), "Toward A Theory on the Reproduction of Social Innovations in Subsistence Marketplaces", *J. Prod. Innovation Manage.*, vol. 36, pp. 764-799.
- STEVENS R., MORAY N., BRUNEEL J. (2015), "The Social and Economic Mission of Social Enterprises: Dimensions, Measurement, Validation, and Relation", *Entrep. Theory Pract.*, vol. 39, pp. 1051-1082.
- ULFAH W.N., DHEWANTO W. (2015), "Model in generating social innovation process: Case study in Indonesian community-based entrepreneurship", *International Business Management*, vol. 9, pp. 99-104.
- VAN DER HAVE R.P., RUBALCABA L. (2016), "Social innovation research: An emerging area of innovation studies?", *Research Policy*, vol. 45, pp. 1923-1935
- VASSALLO J.P., PRABHU J.C., BANERJEE S., VOOLA R. (2019), "The Role of Hybrid Organizations in Scaling Social Innovations in Bottom-of-the-Pyramid Markets: Insights from Microfinance in India", *J. Prod. Innovation Manage.*, vol. 36, pp. 744-763.
- VENUGOPAL S., VISWANATHAN M. (2019), "Implementation of Social Innovations in Subsistence Marketplaces: A Facilitated Institutional Change Process Model", *J. Prod. Innovation Manage.*, vol. 36, pp. 800-823.
- VISWANATHAN M., SREEKUMAR A. (2019), "Consumers and technology in a changing world: the perspective from subsistence marketplaces", *Eur. J. Mark.*, vol. 53, pp. 1254-1274.
- ZAHRA S.A., GEDAJLOVIC E., NEUBAUM D.O., SHULMAN J.M. (2009), "A typology of social entrepreneurs: Motives, search processes and ethical challenges", *J. Bus. Venturing*, vol. 24, pp. 519-532.

Open Innovation Ecosystems support and development: a case-study

GIORGIO DI FIORE¹

Abstract

Open Innovation Ecosystems are regarded as a subset of Innovation Ecosystems in which all involved actors' primary scope is Open Innovation, and most of the activities carried out by the ecosystem participants are defined as Open Innovation activities. Yet, particular gaps in the literature limit our understanding of how Open Innovation activities can support the development of an ecosystem, especially those activities employed by participants that engage with a large firm or with the ecosystem orchestrator. For this reason, this study aims at exploring the role of ecosystem actors in supporting the development of an Open Innovation Ecosystem. Through an in-depth longitudinal case-study of "ORA! – Outpost Ravenna for Energy Transition", the present study aims to fill this gap by investigating the Open Innovation activity of the ecosystem members that collaborate with Eni, the leading Italian multinational energy company operating in the oil and gas sector, in developing its Open Innovation Ecosystem support initiative.

At the time of writing the study is still in progress.

Key words: open innovation; ecosystem; process; ecosystem development; support

Framing of the research. *The concept of Innovation Ecosystem (IE) has gained popularity in the last decades and quickly become a prominent research topic in cross-disciplinary academic literature (Oh et al., 2016; Granstrand and Holgersson, 2020; Alam et al., 2022). IEs originate both from the innovation system (IS) concept, which portrays a set of intertwined components and relations that influence the creation and utilization of innovation and innovative performance (Granstrand and Holgersson, 2020), and from the ecosystem concept, which comes from the science of ecology and represents the flow of material and energy (Shaw and Allen, 2018).*

In response to a call for more conceptual rigor, Granstrand and Holgersson (2020) reviewed the received definitions of IE and related concepts and proposed a new comprehensive definition. Their review suggests that the concept of IE places emphasis on collaboration between actors, value creation and competition. Accordingly, they conceptualize an IE as "the evolving set of actors, activities, and artifacts, and the institutions and relations, including complementary and substitute relations, that are important for the innovative performance of an actor or a population of actors" (Granstrand and Holgersson, 2020, p.3). The important factor that allows to distinguish the IE concept from the IS one, is indeed the collaboration between actors in an ecosystem and their competitive behavior; moreover, ISs are largely based on physical and geographical boundaries, while IEs allow for cross-sectoral and cross-regional exploration of innovation activities (Carlsson et al., 2002; Lundvall, 2007; Grandstrand and Holgersson, 2020; Pushpanathan and Elmquist, 2022).

In the context of IEs, existing research has devoted particular attention to the collaborative arrangements between the networks of actors who share knowledge with the aim of developing innovations (Bacon et al., 2019). Accordingly, innovation activities have seldom been found in isolation; rather, they are part of collaborative changes that happen around a firm's environment and that require collaborative innovation which eventually incorporates the firm into an interdependent IE (Xie and Wang, 2020).

As Alam et al. (2022a) underline, innovation literature has often showed how successful innovations need knowledge, resources and capabilities that come from external sources, and one of the most suitable strategies to meet this challenge is to adopt Open Innovation (OI). OI is defined by Henry Chesbrough (2003; 2012) as an emergent model of innovation by which firms rely on knowledge that arises outside the company's boundaries, and as a process that allows the distribution of innovation through knowledge flows across organizational boundaries. An extensive body of research has investigated the benefits of OI implementation from strategic, managerial, and organizational perspectives (Chesbrough et al., 2006; Enkel et al., 2009; Spender et al., 2017). The benefits of adopting OI include access to external knowledge, lower costs of technology development and improvement, quicker time to market, and higher quality products (Wallin and von Krogh, 2010). The OI process consists of three phases (definition, design, implementation) and involves the identification and the use of resources and ideas that rely

¹ Cattolica del Sacro Cuore University
e-mail: giorgio.difiore@unicatt.it

outside of the firm. It is a process of vision of innovation and organizational capacity to put innovation into practice (Grönlund et al., 2010; Lee and Jung, 2021). An ecosystem consists of a dynamic and interactive connection between the actors, featured by innovative thinking and focused on the creation and diffusion of knowledge. Consequently, firms that engage in a specific ecosystem co-develop and co-create with the actors involved in the same ecosystem and in other ecosystems.

In OI studies, the ecosystem perspective is particularly relevant, since it shifts the focus of analysis from a firm-centric approach to OI, to an approach focused on how the innovation process involves cross-boundaries interactions between actors; therefore, OI studies now adopt the IE concept to explore how a focal firm develops relations with external and interdependent partners (Wikhamn and Styre, 2022). Accordingly, numerous studies now adopt the concept of Open Innovation Ecosystem, which is intended as an IE in which the primary goal of the stakeholders is OI, where a substantial number of the supported activities are OI activities, and in which the primary goal of partner firms is OI (León, 2013; Xie and Wang, 2020; Alam et al., 2022a). The most relevant contributions about OI ecosystems, despite providing a definition, are scattered, and build on diverse theoretical frameworks. For instance, West and Wood (2008) explored the creation and evolution of an OI ecosystem with a longitudinal case study of a mobile operating system developer, and they developed their theoretical framework on value networks, business ecosystems, and their role in OI strategies. Fasnacht (2018), with a focus on value delivery in financial services asserts that, with open interactions of all members and hyperconnectivity, the system becomes an entity full of value; therefore, the collaborative approach to OI allows members to become flexible and agile enough to adopt the proper business model to engage in an ecosystem. In the context of product innovation, Xie and Wang (2020) assert that the modes through which actors engage and interact within OI ecosystems need to be explored; based on grounded theory, they found six innovation ecosystem modes (i.e., firm-university-institute cooperation, inter-firm cooperation, firm-intermediary cooperation, firm-user cooperation, asset divestiture, and technology transfer) and explored how their combination support product innovation. In a subsequent study, the authors define OI ecosystem as “combinations of innovation niches that are filled by linked firms” (Xie and Wang, 2021, p. 1); they build their theoretical framework on innovation niches and ambidextrous innovation to develop and test a conceptual framework to understand the internal mechanisms and contextual conditions in the relationship between a firm’s innovation niche and its exploratory and exploitative innovation (Xie and Wang, 2021). Alam et al. (2022b) use grounded theory method to understand the process by which firms open (i.e., adopt OI practices) to shift from a “closed” ecosystem, to an OI ecosystem, and developed a process of inter-firm openness with implications for the product innovation management.

Purpose of the paper. As previously mentioned, in an OI ecosystem the activities carried out by the actors involved are OI practices, and the primary goal of partner firms and stakeholders is to realize OI. Nevertheless, despite the increasing popularity of the concept, the numerous studies that explore OI ecosystems still lack in providing a comprehensive understanding of the role of OI in supporting the creation and the development of an OI ecosystem. Rather, their focus of analysis is on the main actor of an ecosystem (i.e., large firm or incumbent). Randhawa et al. (2021), for instance, explored the adoption of an “open” business model by a large firm in the medical sector to overcome cognitive constraints and create and capture value with collaborations with multiple stakeholders. Robaczewska et al. (2019) explored the adoption of OI strategies of a multinational firm in the pharmaceutical sector to understand the benefits of OI adoption in its regionally embedded IE. Gionfriddo and Piccaluga (2023) adopted the “Creating Share Value” dynamics lenses to investigate the OI adoption of a big player in the renewable energy sector to achieve social and environmental benefits against climate change.

The main research challenge is to select a setting that could help gaining a better understanding of OI support to ecosystem development considering as unit of analysis all actors involved in an ecosystem, and their contribution to the development of an OI ecosystem. Drawing on the OI paradigm and the resource-based view (RBV), this study aims to understand how the OI activities carried out by the actors in an ecosystem can support the development of it. The resource-based theory defines an organization as a bundle of physical, human capital, and organizational capital resources that must be valuable, rare, and imperfectly inimitable in order to hold the potential of a sustained competitive advantage (Barney, 1991). OI is “the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the market for external use of innovation, respectively” (Chesbrough, 2006, p.1); consequently, the main purpose of adopting OI is to access resources and knowledge. For this reason, the RBV is critical to understanding OI ecosystems (Alam et al., 2022a).

This study aims at developing a process model that explains (1) how actors are involved, collaborate in, and support the development of an OI ecosystem through the implementation of OI practices, and (2) how the ecosystem consequently evolves.

Methodology. To address the research objective, a process approach (Langley, 1999) and a single, in-depth case study (Yin, 2014) have been adopted, for two reasons. First, a “critical case” that is key to investigate the phenomenon illustrated above was selected (Yin, 2014). Second, the research objective requires a longitudinal study (Yin, 2014), which would allow to analyze the evolving nature of the relationships between the actors within the ecosystem. A process approach (Langley, 1999) holds particular significance for the purposes of this study since it allows to elaborate precisely throughout the evolution of the case. Additionally, process data is focused on the evolution over time of something, and the motivations behind its development; accordingly, it mainly consists of narratives about an event with particular attention to the steps, activities and choices that led to it (Langley, 1999).

Following purposeful sampling (Patton, 2014), “ORA! Outpost Ravenna for Energy Transition” is selected as a critical case since it is strategically aligned with the inquiry’s purpose. It is not uncommon in the OI field of research to

adopt purposeful sampling approaches to elaborate theory from information-rich case studies where authors have the possibility to conduct multiple rounds of interviews with a broad spectrum of key informants (Chesbrough et al., 2014; Robaczewska et al., 2019; Randhawa et al., 2021; Wikhamn and Styhre, 2023; Zhao and Yi, 2023; Gionfriddo and Piccaluga, 2023). “ORA!” is a new open innovation ecosystem support initiative to boost innovation within a traditional oil & gas industrial cluster with Eni² as the focal firm. Initiated by Eni and the Municipality of Ravenna in late 2022 with the technical partnership of Mind the Bridge³, it is meant to foster innovation and accelerate the transition towards sustainable energy solutions.

“ORA!” is a significant case for the purposes of this study and constitutes one of the most particular archetypes of OI ecosystem, for many reasons. On the one hand, Eni puts consistent effort in embracing OI. It is among the “100 TOP Corporate Startup Star” and won the “Open Innovation Challengers” prize promoted by the International Chamber of Commerce and Mind the Bridge (Mind the Bridge, 2023). On the other hand, as mentioned, “ORA!” was born from a joint initiative between Eni and the Municipality of Ravenna with a strong international vocation, focusing on technologies for the blue and green economy and, most importantly, with the aim of supporting local business transition and openness. It represents a singular way to allow local Small-to-Medium Enterprises (SMEs) to embark on OI activities. Additionally, the relevance of “ORA!” as a case study arises also from the variety of actors involved that interact and collaborate within the ecosystem. First, the large corporate, Eni, that runs hubs in different Italian regions and fosters entrepreneurship and entrepreneurial culture through “Joule”, the Eni’s school for entrepreneurship. It supports the growth of innovative startups with a strong impact on decarbonization, sustainability, and circular economy through incubation, acceleration, and pilot programs within its network. Second, the Municipality of Ravenna which is actively participating in the development of the ecosystem. Third, local SMEs working in the supply chain of Eni that are trained on methodologies and best practices related to OI, participate in networking activities and working groups and get support in identifying innovation needs and innovative solutions to solve them. Fourth, the University of Bologna (plus other universities in the subsequent editions⁴), whose 8 masters’ students have been selected for supporting Mind the Bridge in the international scouting and support to local companies for the finalization of Proof of Concepts (PoCs). Fifth, international startups and scaleups that have been “matched” with local SMEs. The ultimate goal is to map the innovation needs of local companies operating in strategic industries (chemistry, waste management, carbon capture & storage, energy efficiency and safety, renewables). Once the needs of local companies are mapped, startups and scaleups will be selected to allow local companies to onboard technological innovation mainly through Venture Client model.

Results. The author is involved in the investigation of “ORA!” since its creation, and interviews of involved actors are still in progress. Being “ORA!” in its infancy, results at the time of writing include only the “starting phase” of the activities at the ecosystem level. Data will then be collected longitudinally over the next few years, allowing to conduct a longitudinal in-depth study. Moreover, it is important to underline the uniqueness of the setting under investigation, and, notably, of the primary insights. As mentioned, extant studies on OI ecosystems mainly focus on single-case studies and concentrate on a single firm, on its effort in adopting OI, and on the subsequent ecosystem evolution. In our case, the selected setting constitutes a novelty, and allows the investigation of the creation of an OI support initiative born from the joint agreement between a large firm and a municipality. Furthermore, to the best of our knowledge, this study constitutes the first attempt in considering all ecosystem members (i.e., large firm, SMEs, University, Municipality, startups and scaleups) as units of analysis. In addition, it is important to underline how relevant it is to analyze an ecosystem development initiative since the very beginning of its existence. Not the least, preliminary results suggest that ecosystem support initiative like this strongly facilitate corporate-startup collaborations and SMEs openness. SMEs are resource constrained, and traditionally struggle to engage in OI practices. However, this support initiative appears to be helping them.

Research limitations. The present study is based on the analysis of a single case-study, thereby acknowledging all associated difficulties for generalization. Besides the fact that this qualitative investigation is still in progress (specifically, under the longitudinal perspective), it opens up for further inquiries that could lead to a set of propositions to be investigated with a broader spectrum of cases.

Managerial implications. This study has several important implications for managers and organizations running Open Innovation activities within an ecosystem or planning to implement them. For ecosystem orchestrators, the adoption of OI practices should be organized in way that permits all ecosystem members to profit from open collaborations, with the aim of overcoming the standard way of opening up to OI, allowing all ecosystem members to benefit from the collaboration with startups. Moreover, policies should be implemented to facilitate the creation of joint initiatives with large firms as a way to allow local business to foster entrepreneurship. Successful innovations depend on the availability of complementary resources and capabilities (Sun et al., 2019); therefore, OI support initiatives devoted to

² Eni is a leading Italian multinational energy company operating in the oil and gas sector. Established in 1953, Eni is one of the world’s largest publicly traded oil and gas companies, with operations spanning across the globe.

³ Founded in 2007, Mind the Bridge (MTB) is a global organization providing innovation advisory services and products for both startups and corporates. MTB’s mission is to foster the creation and development of sustainable and global entrepreneurial ecosystems by offering specific programs designed to unite startups and corporates. In addition, the company regularly publishes research reports on the world of technology scaleups.

⁴ The first round of “ORA!” initiative was successfully concluded; Eni and the Municipality of Ravenna are currently working on the second round. The initiative is intended to become a permanent project.

facilitating knowledge and resource sharing are essential for ecosystem development and support. This study will provide managers with practical evidence on the relevance of an inclusive framework that enables different actors and stakeholders to engage proactively as an effective approach to employ OI and to foster entrepreneurship.

Originality of the paper. As anticipated, the novelty of this study relies on both the case selected and the level of analysis adopted. The selected case provides the opportunity to theorize upon an unusual phenomenon, that is the large firm-municipality joint decision to support their surrounding ecosystem by developing an OI ecosystem support initiative. Accordingly, investigating the adoption of OI by all the actors involved in the ecosystem and the subsequent evolution of the ecosystem provides novel perspective that will contribute to the literature on IEs.

Moreover, OI practices showed to be constantly evolving (Chesbrough, 2017; Vanhaverbeke and Gilsing, 2023), thus requiring to be studied in the moment they are adopted. Accordingly, the present study contributes to the OI field of research by providing novel perspectives on OI implementation and evolution.

References

- ALAM M.A., ROONEY D., TAYLOR M. (2022a), "Measuring Inter-Firm openness in innovation ecosystems", *Journal of Business Research*, vol. 138, pp. 436-456.
- ALAM M.A., ROONEY D., TAYLOR M. (2022b), "From ego-systems to open innovation ecosystems: A process model of inter-firm openness", *Journal of Product Innovation Management*, vol. 39, n. 2, pp. 177-201.
- BACON E., WILLIAMS M.D., DAVIES G. (2019), "Recipes for success: Conditions for knowledge transfer across open innovation ecosystems", *International Journal of Innovation Management*, vol. 49, pp. 377-387
- BARNEY J.B. (1991), "Firm resources and sustained competitive advantage", *Journal of Management*, vol. 17, n. 1, pp. 99-120.
- CARLSSON B., JACOBSSON S., HOLMÉN M., RICKNE A. (2002), "Innovation systems: analytical and methodological issues", *Research Policy*, vol. 31, n. 2, pp. 233-245.
- CHESBROUGH H. (2003), *Open Innovation: The New Imperative for Creating and Profiting from Technology*. Harvard Business Press.
- CHESBROUGH H. (2006), *Open Business Models: How to thrive in the new innovation landscape*. Harvard Business Press.
- CHESBROUGH H. (2012), "Open innovation: Where we've been and where we're going", *Research-Technology Management*, vol. 55, n. 4, pp. 20-27.
- CHESBROUGH H. (2017), "The Future of Open Innovation: The future of open innovation is more extensive, more collaborative, and more engaged with a wider variety of participants", *Research-Technology Management*, vol. 60, n. 1, pp. 35-38.
- CHESBROUGH H., KIM S., AGOGINO A.M. (2014), "Chez Panisse: Building an open innovation ecosystem", *California Management Review*, vol. 56, n. 4, pp. 144-171.
- CHESBROUGH H., VANHAVERBEKE W., WEST J. (2006), *Open Innovation: Researching a new paradigm*. Oxford University Press.
- ENKEL E., GASSMANN O., CHESBROUGH H. (2009), "Open R&D and open innovation: exploring the phenomenon", *R&D Management*, vol. 39, n. 4, pp. 311-316.
- FASNACHT D. (2018), *Open Innovation Ecosystems: creating new value constellations in the financial services*, 2nd ed., Springer.
- GIONFRIDDO G., PICCALUGA A. M. C. (2023), "Creating shared value through open innovation: Insights from the case of Enel industrial plants", *Business Ethics, the Environment & Responsibility*, vol. 00, pp. 1-18.
- GRANSTRAND O., HOLGERSSON M. (2020), "Innovation ecosystems: A conceptual review and a new definition", *Technovation*, pp. 90-91, 102098.
- GRÖNLUND J., SJÖDIN D., FRISHAMMAR J. (2010), "Open Innovation and the Stage-Gate Process: a revised model for new product development", *California Management Review*, vol. 52, n. 3, pp. 106-131.
- LANGLEY A. (1999), "Strategies for Theorizing from Process Data", *Academy of Management Review*, vol. 24, n. 4, pp. 691-710.
- LEE S.Y., JUNG M. (2021), "Exploring Competing Perspectives on how to design Open Innovation Program for High School STEM Education: A Case study", *Education Sciences*, vol. 11, n. 7, pp. 322.
- LEÓN G. (2013), *Analysis of University-driven Open Innovation Ecosystems: the UPM case study*¹,
- LUNDVALL B. (2007), "National Innovation Systems—Analytical Concept and Development Tool", *Industry and Innovation*, vol. 14, n. 1, pp. 95-119.
- MIND THE BRIDGE (2023), *Open Innovation Outlook 2024*, Available at: <https://mindthebridge.com/open-innovation-outlook-2024/>
- OH D., PHILLIPS F., PARK S., LEE E. (2016), "Innovation ecosystems: A critical examination", *Technovation*, vol. 54, pp. 1-6.
- PATTON M.Q. (2014), *Qualitative research & evaluation methods: Integrating theory and practice*. Sage Publications
- PUSHPANANTHAN G., ELMQUIST M. (2022), "Joining forces to create value: The emergence of an innovation ecosystem", *Technovation*, vol. 115, 102453.
- RANDHAWA K., WEST J., SKELLERN K., JOSSERAND E. (2021), "Evolving a value chain to an open innovation ecosystem: cognitive engagement of stakeholders in customizing medical implants", *California Management Review*, vol. 63, n. 2, pp. 101-134.
- ROBACZEWSKA J., VANHAVERBEKE W., LORENZ A. (2019), "Applying open innovation strategies in the context of a regional innovation ecosystem: The case of Janssen Pharmaceuticals", *Global Transitions*, vol. 1, pp. 120-131.
- SHAW D., ALLEN T. (2018), "Studying innovation ecosystems using ecology theory", *Technological Forecasting and Social Change*, vol. 136, pp. 88-102.
- SPENDER J., CORVELLO V., GRIMALDI M., RIPPA P. (2017), "Startups and open innovation: a review of the literature", *European Journal of Innovation Management*, vol. 20, n. 1, pp. 4-30.
- SUN S.L., ZHANG Y., CAO Y., DONG J., CANTWELL J. (2019), "Enriching innovation ecosystems: The role of government in a university science park", *Global Transitions*, vol. 1, pp. 104-119.
- VANHAVERBEKE W., GILSING V. (2023), *Opening up Open innovation*, in: Chesbrough H., Radziwon A., Vanhaverbeke W., West J., *The Oxford Handbook of Open Innovation*

- WALLIN M.W., VON KROGH G. (2010), “Organizing for open innovation: focus on the integration of knowledge”, *Organizational Dynamics*, vol. 39, n. 2, pp. 145-154.
- WEST J., WOOD D. (2008), “Creating and Evolving an Open Innovation Ecosystem: Lessons from Symbian Ltd”, *Social Science Research Network*.
- WIKHAMN B.R., STYHRE A. (2022), “Open innovation ecosystem organizing from a process view: a longitudinal study in the making of an innovation hub”, *R&D Management*, vol. 53, n. 1, pp. 24-42.
- XIE X., WANG H. (2020), “How can open innovation ecosystem modes push product innovation forward? An fsQCA analysis”, *Journal of Business Research*, vol. 108, pp. 29-41.
- XIE X., WANG H. (2021), “How to bridge the gap between innovation niches and exploratory and exploitative innovations in open innovation ecosystems”, *Journal of Business Research*, vol. 124, pp. 299-311.
- YIN R. K. (2014), *Case study research: Design and methods* (5th ed.), CA: Sage Publications.
- ZHAO W., YI L. (2023), “Product innovation logic under the open innovation ecosystem: A case study of Xiaomi (China)”, *Technology Analysis & Strategic Management*, vol. 35, n. 6, pp. 659-675.

Empowering Digital Entrepreneurship: Regulatory Governance in Platform Ecosystems

MUHANAD HASAN AGHA¹ VLADIMIR KOROVKIN² SVETLANA MIRONYUK³

Abstract

In this paper, we investigate the regulatory governance frameworks that can empower digital entrepreneurship and enhance the welfare of entrepreneurs operating on digital platforms. The study explores the complex dynamics of power imbalances within these ecosystems and examines potential regulatory interventions to address them.

Key words: platform; governance; digital entrepreneurship; empowering; business ecosystem

Framing of the research. The proliferation of digital platforms has revolutionized the entrepreneurial landscape, providing unprecedented opportunities for innovation and value creation. However, these platforms are often characterized by asymmetrical power dynamics, with platform owners exercising significant control over the entrepreneurial endeavors within their ecosystems. This research seeks to understand the structural underpinnings of these power imbalances and identify regulatory mechanisms that can empower entrepreneurs and promote their welfare.

Purpose of the paper. The primary objective of this paper is to examine the role of regulatory governance in fostering a more equitable and conducive environment for digital entrepreneurship. Using existing literature, qualitative interviews with entrepreneurs, and analyses of regulatory frameworks, the study provides policymakers, platform owners, and entrepreneurs with actionable insights.

Methodology. The methodology is based on a mixed-methods approach that integrates a thorough review of academic literature with qualitative interviews with entrepreneurs. The literature review provides a theoretical framework for understanding the dynamics of digital platforms and entrepreneurship, while the interviews offer practical perspectives on the challenges faced by entrepreneurs within these ecosystems. Regulatory frameworks are analyzed to assess their effectiveness in addressing the identified challenges.

Results. The results indicate that entrepreneurs face a significant power imbalance vis-à-vis platform owners, who can impose unilateral changes in competitive conditions on the platform. The power wielded by platform companies stems from the distinctive structural features of the platform, where the owner monopolizes the possession of the technological infrastructure enabling them to build control algorithms overall performance aspects. Given its central position, the platform can determine what information should be provided to any users, and what should not. This ability to analyze, reassemble, and process data and information for the platform allows it to influence interests and actions. Consequently, one of the primary risks confronting entrepreneurs is that the platform owner may decide to compete with them, as they can direct traffic towards their offerings. What further exacerbates power differentials within digital platforms is the largely negative (and possibly enabling in crucial aspects) stance taken by governments in avoiding regulatory oversight and intervention. Thus, the research findings affirm that the presence of advanced forms of regulatory interventions, such as polycentric governance, which considers the horizontal and vertical relationships among different elements, can lead to empowering digital entrepreneurship and enhancing entrepreneurs' well-being.

Research limitations. One potential limitation of this research is the scope of regulatory frameworks analyzed, which may not encompass all relevant jurisdictions and platforms. Additionally, the qualitative nature of the interviews may limit the generalizability of the findings. However, efforts will be made to mitigate these limitations through rigorous methodology and triangulation of data sources.

Managerial implications. The findings of this research will have important implications for policymakers, platform owners, and entrepreneurs. Policymakers will gain insights into the regulatory interventions needed to foster a more inclusive and competitive digital entrepreneurship ecosystem. Platform owners will understand the importance of governance mechanisms in promoting entrepreneurship and innovation, while entrepreneurs will receive guidance on navigating the regulatory landscape and advocating for their interests.

Originality of the paper. This paper contributes to the existing literature by synthesizing academic research with practical perspectives from entrepreneurs, offering a comprehensive analysis of the regulatory governance frameworks

¹ e-mail: muhanad_hasan.agma@skolkovo.ru

² e-mail: vladimir_korovkin@skolkovo.ru

³ e-mail: svetlana_mironyuk@skolkovo.ru

needed to empower digital entrepreneurship. By bridging the gap between theory and practice, this research provides original insights and actionable recommendations for promoting entrepreneurship and improving the welfare of entrepreneurs within digital platforms.

References

- ARMSTRONG M. (2006), "Competition in Two-sided Markets", *RAND J. Econom.*, vol. 37, n. 3, pp. 668-691.
- AUTIO E., NAMBISAN S., THOMAS, L.D., WRIGHT M. (2018), "Digital Affordances, Spatial Affordances, and the Genesis of Entrepreneurial Ecosystems", *Strategic Entrepreneurship Journal*, vol. 12, n. 1, pp. 72-95.
- CENNAME C., SANTALO J. (2013), "Platform Competition: Strategic Trade-offs in Platform Markets", *Strategic Management Journal*, vol. 34, n. 11, pp. 1331-1350.
- CENNAME C., OZALP H., KRETSCHMER T. (2018), "Platform Architecture and Quality trade-offs of Multihoming Complements", *Information Systems Research*, vol. 29, n. 2, pp. 461-478.
- CHEN Y., PEREIRA I., PATEL P. C. (2021), "Decentralized Governance of Digital Platforms", *Journal of Management*, vol. 47, n. 5, pp. 1305-1337.
- CUTOLO D., KENNEY M. (2019), Dependent Entrepreneurs in a Platform Economy: Playing in the Gardens of the Gods. *Berkeley roundtable on the international economy working paper*, 3.
- CUTOLO D., KENNEY M. (2021), "Platform-Dependent Entrepreneurs: Power Asymmetries, Risks, and Strategies in the Platform Economy", *Academy of Management Perspectives*, vol. 35, n. 4, pp. 584-605.
- DE REUVER M., BOUWMAN H. (2012), "Governance Mechanisms for Mobile Service Innovation in Value Networks", *Journal of Business Research*, vol. 65, n. 3, pp. 347-354.
- EVANS D. S. (2012), "Governing Bad Behavior by Users of Multi-sided Platforms", *Berkeley Technology Law Journal*, vol. 27, pp. 1201-1250.
- FAN Z., ZHAI X. (2023), "The Performance Improvement Mechanism of Cross-border E-commerce Grassroots Entrepreneurship Empowered by the Internet Platform", *Sustainability*, vol. 15, n. 2, pp. 1178.
- GAWER A., CUSUMANO M. A. (2014), "Industry Platforms and Ecosystem Innovation: Platforms and Innovation", *Journal of Product Innovation Management*, vol. 31, n. 3, pp. 417-433.
- JACOBIDES M. G., CENNAME C., GAWER A. (2018), "Towards a Theory of Ecosystems", *Strategic Management Journal*, vol. 39, n. 8, pp. 2255-2276.
- KENNEY M., ZYSMAN J. (2020), "The Platform Economy: Restructuring the Space of Capitalist Accumulation", *Cambridge Journal of Regions, Economy and Society*, vol. 13, n. 1, pp. 55-76.
- LAMINE W., FAYOLLE A., JACK S., AUDRETSCH D. (2023), "Impact of Digital Technologies on Entrepreneurship: Taking Stock and Looking Forward", *Technovation*, vol. 126, pp. 102823.
- MA Y., LAN J., THORNTON T., MANGALAGIU D., ZHU D. (2018), "Challenges of Collaborative Governance in the Sharing Economy: The Case of Free-Floating Bike Sharing In Shanghai", *Journal of Cleaner Production*, vol. 197, pp. 356-365.
- MARTIN C.J., UPHAM P., KLAPPER R. (2017), "Democratising Platform Governance in the Sharing Economy: An Analytical Framework and Initial Empirical Insights", *Journal of Cleaner Production*, vol. 166, pp. 1395-1406.
- NAMBISAN S. (2017), "Digital Entrepreneurship: Toward a Digital Technology Perspective of Entrepreneurship", *Entrepreneurship Theory and Practice*, vol. 41, n. 6, pp. 1029-1055.
- OSTROM E. (1990), *Governing the commons: the evolution of institutions for collective action*. Cambridge University Press, Cambridge.
- OSTROM E. (2010), "Beyond Markets and States: Polycentric Governance of Complex Economic Systems", *American Economic Review*, vol. 100, pp. 641-672.
- OSTROM V., TIEBOUT C.M., WARREN R. (1961), "The Organization of Government in Metropolitan Areas: a Theoretical Inquiry", *American Political Science Review*, vol. 55, n. 4, pp. 831-842.
- STEPHAN U., RAUCH A., HATAK I. (2023), "Happy Entrepreneurs? Everywhere? A Meta-analysis of Entrepreneurship and Wellbeing", *Entrepreneurship Theory and Practice*, vol. 47, n. 2, pp. 553-593.
- TIWANA A., KONSYSKI B., BUSH A.A. (2010), "Platform Evolution: Coevolution of Platform Architecture, Governance, and Environmental Dynamics", *Information Systems Research*, vol. 21, n. 4, pp. 675-687.
- WAREHAM J., FOX P.B., GINER J.L. (2014), "Technology Ecosystem Governance", *Organization Science*, vol. 25, n. 4, pp. 1195-1215.
- XU C., WANG Y.M. (2022), "The Regulatory Architecture of Digital Platforms: A Perspective of Life Cycle and Risk Management", *Systems*, vol. 10, n. 5, pp. 145.
- YU J.J., TANG C.S., MAX SHEN Z.J., CHEN X.M. (2020), "A Balancing Act of Regulating on-Demand Ride Services", *Management Science*, vol. 66, n. 7, pp. 2975-2992.
- ZAHRA S.A., NAMBISAN S. (2011), "Entrepreneurship in Global Innovation Ecosystems", *AMS Review*, vol. 1, n. 1, pp. 4-17.
- ZHU F., IANSITI M. (2019), "Why Some Platforms Thrive and Others Don't", *Harvard Business Review*, vol. 97, n. 1, pp. 118-125.

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The Governance of Entrepreneurial Ecosystems: Ecosystem Manager or Ecosystem Act?

GABRIELE IANIRO¹ MICHELE MODINA²

Abstract

While different studies enriched our knowledge of the entrepreneurial ecosystem (EE) framework, with insights concerning an EE's definition, theoretical constructs, constitutive elements, structure, and processes, the development of EEs remains a tricky challenge for both researchers and practitioners, as many debates and unanswered questions still inhabit the literature. Among those, there are still relevant questions regarding an ecosystem's evolution and governance, which prevent us from fully understanding the dynamics that underlie an EE's development. Especially, some related concepts seem to be either misused, used too loosely or in contrasting ways, requiring therefore better conceptualization.

The aim of this paper, thus, is to provide more clarity in the literature by problematizing the concepts of governance and management in EEs, so to provide new points of view for future research on an ecosystem's development and evolution. Our preliminary findings show that the necessity for management and governance reside intrinsically in the EE definition, given the need for coordination and monitoring to guarantee its sustainability. As meta-organizations, then, EEs, not only need governance but, most of all, need the responsibility for its monitoring and maintenance to be democratically assigned.

Keywords: entrepreneurial ecosystem; governance; management; problematization; ecosystem development.

Framing of the research. In the last twenty years, the framework of entrepreneurial ecosystems (EEs) has emerged as a theory and tool to explain the mechanisms behind economic growth at the regional level concerning entrepreneurship and innovation development processes (Alvedalen & Boschma, 2017; Cavallo et al., 2019; Cao et al., 2021; Thai et al., 2023). In particular, the framework tries to do that by describing how different actors, factors, artifacts, and the relations between them can foster the development of high-growth entrepreneurship in a defined region.

In view of the growing problem of disparity in terms of economic and social development between different geographical areas (World Economic Forum, 2024) and given that the increasing pace of technological progress is creating the need, for regional and national governments, to be able to exploit the potential of innovation to the fullest in order to ensure the competitiveness of their territories (Johannessen & Sætersdal, 2020), the creation of EEs has become a policy priority for governments around the world.

As of today, different studies advanced the literature for what concerns an EE's definition and theoretical constructs (Isenberg, 2010; Mason and Brown, 2014; Acs et al., 2017; Brown & Mason, 2017; O'Connor et al., 2018), constitutive elements and structure (Stam, 2015; Adner, 2017; Carayannis et al., 2017; Stam & Van De Ven, 2021), and processes (Dubina et al., 2016; Spigel, 2017; Spigel & Harrison, 2018; Wurth et al., 2023).

Despite the progress made by academics, however, the development of EEs remains a tricky challenge for both researchers and practitioners, as many debates and unanswered questions still inhabit the literature (Cavallo et al., 2019; Wurth et al., 2022; Cho et al., 2022).

Among those, there are still relevant questions regarding an ecosystem's evolution (Cho et al., 2022) and governance (Colombo et al., 2019), which prevent us from fully understanding what are the dynamics that underlie the development of a successful EE, and who should play the management role.

On the one hand, there should be offered ideas about the possible evolutionary processes of entrepreneurial ecosystems, although leaving little room for operationalization in the concepts, as they slightly link them to the phenomenon of planning and governance (Mack & Mayer, 2016; Kantis & Federico, 2020; Cantner et al., 2021) apart from Cho et al. (2022).

On the other hand, the literature is contrasting in its opinions regarding the type(s) of governance and governance approaches which characterize EEs: formal and informal, top-down and bottom-up, relational and/or hierarchical, fixed in time or evolving (Colombelli et al., 2019; Colombo et al., 2019; Cunningham et al., 2019; Scott et al., 2022). Such studies, in fact, slightly address the issue of the development of entrepreneurial ecosystems, which still remains a blurry

¹ University of Molise
e-mail: g.ianiro1@studenti.unimol.it

² University of Molise
e-mail: michele.modina@unimol.it

problem both to practitioners, policymakers and academics. Moreover, they do not seem to agree regarding both the necessity for and possibility of management as well as the responsibility for management by ecosystem actors.

Considering these issues, then, what the presence of many different points of view on the topic tells us is that there is still a need for a solid conceptual clarification regarding the manageability of an EE, as well as an adequate definition and delegation of responsibility for governance in this sense. Concerns, these, which have a major role in defining a solid basis for the developmental and evolutionary dynamics of EEs, especially given the call for more empirical works in the field.

Purpose of the paper. The purpose of this conceptual work, then, is to fill this gap and advance the knowledge regarding the development of EEs by problematizing the concept of their governance and management. In order to do that, we first make clarity on the definition of entrepreneurial ecosystems, by critically analyzing it, and after that questioning whether an EE can or should be managed, who should eventually be responsible for its management (as well as what should be the configuration of governance for EEs), and how responsibility for performance can be and should be distributed in the entrepreneurial ecosystem.

In particular, given the abundance of papers that consider as given both the possibility of governance and the possibility for some of the organizations of the quadruple helix (Carayannis & Campbell, 2009) to “orchestrate” the ecosystem, the study tries to understand whether a sort of “Ecosystem Manager” (or orchestrator) or an “Ecosystem Act” (or act of taking responsibility) result necessary for the development of entrepreneurial ecosystems.

Methodology. For the purpose of this paper, we follow a multistage process, following Alvesson & Sandberg (2010; 2020) which consider six steps for the problematizing review: 1. Identify a domain of literature; 2. Identify and articulate assumptions; 3. Evaluate articulated assumptions; 4. Develop alternative assumptions; 5. Consider assumptions in relation to the audience; 6. Evaluate the alternative assumption ground.

Especially, it proceeds by “[...] reading broadly, but selectively [...]”, challenging points of departure in the literature, and carefully analyzing a small number of selected high-quality studies that cover a broad range of topics.

That being said, given the complexity of the ecosystem concept, and taking inspiration from Laasch et al. (2020) and Alvesson & Blom (2022), who highlight the necessity to shed light on some big, ambiguous concepts in order to make clarity in the research field, we carry out a preliminary stage which focuses on making clarity on the definition of entrepreneurial ecosystems, which allows us to identify precisely the domain literature and to identify and articulate assumptions.

In particular, for this preliminary stage regarding the definition of entrepreneurial ecosystem, we take inspiration from Laasch et al. (2020) for the identification of domains, and we begin by adopting a systematic approach in order to be able to find the most adopted definition and “dissect” it, to identify the domains and the main assumption regarding the manageability of the EE and critically commenting them in order to develop alternative assumptions, which might take different paths depending on the results.

In this regard, we follow the process suggested by Tranfield et al. (2003), which involves three main phases of: 1) planning of the review (for which the need had already been previously identified and a proposal made) through the definition of a clear research protocol; 2) conducting the review, through the application of the research protocol, leads to the identification of publications and the selection of studies to be included in the review on the basis of the inclusion and exclusion criteria specified in the research protocol; 3) reporting and dissemination, through a detailed analysis of the publications included in the sample.

Considering the pertinence, we applied a multistage process similar to that of Wurth et al. (2022), but with some differences. First of all, unlike these authors, the selected database was Scopus. In this regard, although both Web of Science and Scopus represent the most widely used databases for bibliographic analysis, the latter is a better option in terms of the inclusiveness of the database, the user-friendliness of the interface, and wider and easier access to metrics that are more reliable and less susceptible to manipulation than Web of Science (Pranckutė, 2021).

Secondly, unlike the other authors, given the objective of this stage of analysis to understand the specific definition of entrepreneurial ecosystem, we focused exclusively on the concept of entrepreneurial ecosystem without including related concepts. In this sense, we refer to similar concepts such as the “startup ecosystem”, the “entrepreneurial system”, the “entrepreneurship system,” or the “system of entrepreneurship.” Therefore, the search by topic (title, abstract, keywords) was developed using a single keyword: “entrepreneur* ecosystem*.” The keyword has been defined in this way in order to include both the term “entrepreneurship ecosystem” and the term “entrepreneurial ecosystem”. The result was an initial sample of 2245 items in the period between 2006 and 2024. Of these, 1444 are journal articles, 56 books, 389 book chapters, 248 conference papers, 17 conference reviews, 54 reviews, 16 editorials and 21 data papers, erratum, letters, notes, and retracted articles. As in Wurth et al. (2022) we excluded books, book chapters, conference reviews and the 21 other items. In addition, we have excluded all releases that are not in English (49 records). This process left a total of 1713 articles, including journal articles, conference papers, reviews, and editorials.

We included not only journal articles, but also the remaining publications because, although the interest was to select high-quality publications, we were also interested in selecting publications that are as accepted and approved as possible by academics, considering that the subsequent steps would allow for further exclusion.

The second phase, on the other hand, follows precisely Wurth et al. (2022) and concerns the application of exclusion criteria based on the journal of publication. Therefore, the Scimago Journal Rankings were used in the latest 2022 edition. To select the most relevant journals, the top 25% of the journals in the following areas were selected: Business and International Management; Business, Management, and Accounting Miscellaneous; Management of Technology and Innovation; Strategy and Management; Economics, Econometrics, and Finance Miscellaneous; Economics and

Econometrics; Geography, Planning and Development; Social Sciences Miscellaneous; and Urban Studies.

This step is essential to include a more significant number of articles related to the areas that affect the concept of entrepreneurial ecosystem and, on the other hand, to ensure a higher scientific quality of the items in the database. This step, thus, resulted in a sample of 741 journals, of which 113 were represented within our initial sample.

In particular, it should be noted that to select the relevant journals, a comparison was also made between the Journals present within the sample that emerged from the selection and the ones present within the sample of articles found on Scopus. Taking into account that - at this stage of analysis - the objective of the systematic review is to identify the most influential and important articles in the literature on entrepreneurial ecosystems in order to extrapolate an integral definition, this comparison has also made it possible to include a tiny number of journals that, on the one hand, within the Scimago database are Q2, but have a ranking that includes them in the top 25% of the journals with the highest ranking. On the other hand, these journals are those in which some very relevant articles for reading ecosystems have been published. Finally, another addition was that of a journal that does not fall within the previously selected categories but within the marketing area (i.e., *Journal of Business Research*). This process then led to the selection of an intermediate sample of 652 articles.

Finally, further exclusion criteria were applied. First, we excluded all publications that do not explicitly reference the entrepreneurial ecosystem concept but use it only as the context in which the object of their research took place. Second, publications that refer to other constructs, such as the innovation ecosystem, digital entrepreneurial ecosystem, and sustainable entrepreneurial ecosystem, were excluded as well. Third, non-conceptual publications and all publications that did not have any definition of an entrepreneurial ecosystem were excluded. This process led to the definition of a final sample of 65 publications between 2006 and 2024.

Based on the sample emerging from the selection, the text was analyzed by first grouping the recurrent definitions, following some of the scrutiny methodologies presented by Ryan et al. (2003), and then conducting a critical analysis of the results. For what concerns the scrutiny process, first, we have been looking for repetitions between different definitions - and therefore, “[...] ‘topics that occur and reoccur’ [...] or are ‘recurring regularities’ [...]” (Ryan et al., 2003) - and then, net of repetitions, we proceeded to look for similarities and differences between the definitions. This analysis made it possible to identify the recurring and the less recurring themes to create an integrated definition.

Thanks to this process, we were able to: 1) reconstruct an entrepreneurial ecosystem definition; 2) “dissect” it and analyze it based on the recurring themes in order to identify the domains; 3) begin to critically comment on its components in order to find the necessity for governance in the definition and also understanding the main domain areas.

After this process, following Alvesson & Sandberg (2010; 2020), the paper will continue by selecting a few works included in the domain areas of the EE concept, consequently identifying the main assumptions regarding governance and management in an ecosystem, and evaluating them.

Finally, the paper will conclude with new research questions spinning out from the alternative assumption ground.

Results. Our preliminary results regarding the first stage of our problematizing review show that the most comprehensive and synthetic definition of EE is the one introduced by Stam (2015) and then updated by Kuratko et al. (2017). Moreover, from the comprehensive analysis of the definitions, among the different components we can highlight three main activities (or functions) that ecosystem actors and factors should perform: creating a favorable environment for productive entrepreneurship to proliferate, monitoring performance, and coordinating activities.

Considering this, then, although labeling entrepreneurial ecosystems as “organizations” is a conceptual extension, EEs can be conceptualized as “meta-organizations” that not only need governance but, above all, need someone who takes care of its monitoring and maintenance of the “ecosystem” organization: that is, a manager.

Research limitations. Although the study is in its early stages, the main limitations are linked to the lack of empirical and longitudinal studies in the sample of papers, which only allows us to work on hypotheses rather than facts. Moreover, given the small number of papers on which the problematizing review should be carried out (in the second phase of the review), the paper might exclude valuable works that could allow better conceptualization.

Managerial implications. Governance and management are the two main topics that allow the entrepreneurial ecosystem research to be operationalized. The development of entrepreneurial ecosystems, indeed, depends not only on our knowledge of “what” should be developed, and “how” and “when” to do it, but most of all on “who” should do it. Policymakers and top managers from organizations attaining the “quadruple helix” actors can benefit from this study by first understanding that an ecosystem should not only be managed but, most of all can be. Secondly, policymakers could use this study to direct funds and policies to the development of the type of organization that could be responsible for the development of an entrepreneurial ecosystem. Also, top managers from organizations in an entrepreneurial ecosystem could understand whether to redirect their investments in an ecosystem’s development, persevere in them, or create totally new organizations in order to reach this goal.

Finally, the paper has the potential to advance the literature regarding entrepreneurial ecosystems and, most of all, open new research avenues for what concerns an ecosystem’s development. The problematization, indeed, both makes clarity on the previous debates and inconsistencies and makes space for new avenues of research. In this case, given the early stage of the study, the preliminary results show that the study could help clearing the path for new studies concerning governance in entrepreneurial ecosystems.

Originality of the paper. As of today, while the literature of entrepreneurial ecosystems advanced with a wealth of studies, few of them critically reviewed the field (Alvedalen & Boschma, 2017; Brown & Mason, 2017; Cavallo et al.,

2019), mainly focusing on the difference between older or similar concepts. However, they did not focus on specific areas of the ecosystem concept (as in the case of governance) or systematically analyze the use of the definition in the literature. In this particular case, as anticipated earlier in the text, while other researchers introduced different views on governance and management in an entrepreneurial ecosystem, either setting governance as the main subject of the study or including governance in the discussions, they not only proposed different approaches but most of all seemingly gave for granted some considerations regarding governance, that instead are the main subject of this paper.

References

- ACS Z.J., STAM E., AUDRETSCH D.B., O'CONNOR A. (2017), "The lineages of the entrepreneurial ecosystem approach", *Small Business Economics*, vol. 49, pp. 1-10.
- ADNER R. (2017), "Ecosystem as structure: An actionable construct for strategy", *Journal of Management*, vol. 43, n. 1, pp 39-58.
- ALVEDALEN J., BOSCHMA R. (2017), "A critical review of entrepreneurial ecosystems research: Towards a future research agenda", *European Planning Studies*, vol. 25, n. 6, pp. 887-903.
- ALVESSON M., SANDBERG J. (2020), "The problematizing review: A counterpoint to Elsbach and Van Knippenberg's argument for integrative reviews", *Journal of Management Studies*, vol. 57, n. 6, pp. 1290-1304.
- ALVESSON M., BLOM M. (2022), "The hegemonic ambiguity of big concepts in organization studies", *Human Relations*, vol. 75, n. 1, pp. 58-86.
- BROWN R., MASON C. (2017), "Looking inside the spiky bits: a critical review and conceptualisation of entrepreneurial ecosystems", *Small Business Economics*, vol. 49, pp. 11-30.
- CANTNER U., CUNNINGHAM J.A., LEHMANN E.E., MENTER M. (2021), "Entrepreneurial ecosystems: a dynamic lifecycle model", *Small Business Economics*, vol. 57, pp. 407-423.
- CAO Z., SHI X. (2021), "A systematic literature review of entrepreneurial ecosystems in advanced and emerging economies", *Small Business Economics*, vol. 57, pp. 75-110.
- CARAYANNIS E.G., CAMPBELL D.F. (2009), "'Mode 3' and 'Quadruple Helix': toward a 21st century fractal innovation ecosystem", *International Journal of Technology Management*, vol. 46, n. 3-4, pp. 201-234.
- CARAYANNIS E.G., GRIGOROUDIS E., CAMPBELL D.F., MEISSNER D., STAMATI D. (2018), "The ecosystem as helix: an exploratory theory-building study of regional co-opetitive entrepreneurial ecosystems as quadruple/quintuple helix innovation models", *R&D Management*, vol. 48, n. 1, pp. 148-162.
- CAVALLO A., GHEZZI A., BALOCCO R. (2019), "Entrepreneurial ecosystem research: Present debates and future directions", *International Entrepreneurship and Management Journal*, vol. 15, pp. 1291-1321.
- CHO D.S., RYAN P., BUCIUNI G. (2022), "Evolutionary entrepreneurial ecosystems: A research pathway", *Small Business Economics*, vol. 58, n. 4, pp. 1865-1883.
- COLOMBELLI A., PAOLUCCI E., UGHETTO E. (2019), "Hierarchical and relational governance and the life cycle of entrepreneurial ecosystems", *Small Business Economics*, vol. 52, pp. 505-521.
- COLOMBO M.G., DAGNINO G.B., LEHMANN E.E., SALMADOR M. (2019), "The governance of entrepreneurial ecosystems", *Small Business Economics*, vol. 52, pp. 419-428.
- CUNNINGHAM J.A., MENTER M., WIRSCHING K. (2019), "Entrepreneurial ecosystem governance: A principal investigator-centered governance framework", *Small Business Economics*, vol. 52, pp. 545-562.
- DUBINA I.N., CAMPBELL D.F., CARAYANNIS E.G., CHUB A.A., GRIGOROUDIS E., KOZHEVINA O.V. (2017), "The balanced development of the spatial innovation and entrepreneurial ecosystem based on principles of the systems compromise: A conceptual framework", *Journal of the Knowledge Economy*, vol. 8, pp. 438-455.
- ISENBERG D.J. (2010), "How to start an entrepreneurial revolution", *Harvard Business Review*, vol. 88, n. 6, pp. 40-50.
- JOHANNESSEN J.A., SÆTERSDAL H. (2020), *Automation, innovation and work: the impact of technological, economic, and social singularity*. Routledge.
- KANTIS H., FEDERICO J. (2020), "A dynamic model of entrepreneurial ecosystems evolution", *Journal of Evolutionary Studies in Business*, vol. 5, n. 1, pp. 182-220.
- LAASCH O., SUDDABY R., FREEMAN R.E., JAMALI D. (2020), "Mapping the emerging field of responsible management: Domains, spheres, themes, and future research", in: *Research Handbook of Responsible Management*, Elgar, pp. 2-39.
- MACK E., MAYER H. (2016), "The evolutionary dynamics of entrepreneurial ecosystems", *Urban Studies*, vol. 53, n. 10, pp. 2118-2133.
- MASON C., BROWN R. (2014), "Entrepreneurial ecosystems and growth oriented entrepreneurship", *Final report to OECD, Paris*, vol. 30, n. 1, pp. 77-102.
- O'CONNOR A., STAM E., SUSSAN F., AUDRETSCH D.B. (2018), "Entrepreneurial ecosystems: The foundations of place-based renewal", in: *Entrepreneurial ecosystems: Place-based transformations and transitions*, Springer, pp. 1-21.
- SCOTT S., HUGHES M., RIBEIRO-SORIANO D. (2022), "Towards a network-based view of effective entrepreneurial ecosystems", *Review of Managerial Science*, vol. 16, n. 1, pp 157-187.
- SPIGEL B. (2017), "The relational organization of entrepreneurial ecosystems", *Entrepreneurship Theory and Practice*, vol. 41, n. 1, pp. 49-72.
- SPIGEL B., HARRISON R. (2018), "Toward a process theory of entrepreneurial ecosystems", *Strategic Entrepreneurship Journal*, vol. 12, n. 1, pp. 151-168.
- STAM E. (2015), "Entrepreneurial ecosystems and regional policy: a sympathetic critique", *European Planning Studies*, vol. 23, n. 9, pp. 1759-1769.
- STAM E., VAN DE VEN A. (2021), "Entrepreneurial ecosystem elements", *Small Business Economics*, vol. 56, n. 2, pp. 809-832.
- THAI Q.H., MAI K.N. (2023), "An Evolution of Entrepreneurial Ecosystem Studies: A Systematic Literature Review and Future Research Agenda", *Entrepreneurial Business and Economics Review*, vol. 11, n. 2, pp. 31-62.
- WURTH B., STAM E., SPIGEL B. (2022), "Toward an entrepreneurial ecosystem research program", *Entrepreneurship Theory and Practice*, vol. 46, n. 3, pp. 729-778.

A comprehensive exploration of the knowns and unknowns of Private Equity Secondary Markets

MICHELE LERTORA¹ CRISTINA DE SILVA² MARGHERITA MIETTO³ ANNA GERVASONI⁴

Abstract

In parallel with the growth of primary Private Equity (PE) markets, secondary markets have emerged as a tool to provide liquidity to Limited Partners. Over the last years, a decrease in exit activities implied more difficulties for General Partners to distribute liquidity to their investors, thus driving to a higher demand for secondary markets.

This work aims to provide a comprehensive and systematic review of what has already emerged from academic studies and practitioner reports and to highlight current knowledge gaps, to propose several valuable research directions and to inform stakeholders of managerial implication related to this market.

Key words: private equity; venture capital; secondary markets; illiquidity; LP-led; GP-led

Framing of the research. Private equity funds are typically based on a contractual agreement between a General Partner (GP), who manages the fund and makes the investments, and Limited Partners (LPs), who agree to provide capital on demand to the GP. The lifecycle of a typical PE fund is usually 10 years or more, which implies that investors must commit capital and are generally locked up for the fund's entire life (Nadauld et al., 2019). However, LPs might wish to exit earlier on, if they need to rebalance their portfolios, external events (for instance a decline in public listings) leave them over-allocated to the PE asset class (denominator effect) or to reduce non-core managers or strategies or re-deploy to new vintages (Boyer et al., 2023, Albuquerque et al., 2018). Secondary markets then step in as a tool to provide liquidity to LPs.

Following an explosive growth of the primary private equity industry, which reached over \$20 trillion in assets under management globally (Bain, 2024), the secondary market experienced a substantial increase (Jefferies, 2024). Besides this, PE has encountered difficulties in distributing liquidity to LPs in recent years due to a sharp slowdown in exit paths, less than half the proportion of five years ago (Preqin, 2024). Currently, the unrealized value amounts to \$3.2 trillion and consists of 28,000 unsold companies, more than 40% of which are four years old or older, generating a liquidity problem (Bain, 2024). Fewer exit opportunities, in turn, lead to decreased distributions for LPs, thereby creating a challenging fundraising landscape.

In this regard, the secondary market plays a vital role for both GPs and LPs, providing an array of tools that they can use to manage their own liquidity needs as well as those of their stakeholders. Although the secondary market represents only 4 percent of the total capital raised by the PE industry as a whole in the last 15 years and currently deploys about \$100 billion of liquidity annually, the market is expected to continue to grow in the next years (Jefferies, 2024). Indeed, secondary funds raised 92% more capital in 2023 than they did in 2022 (Bain, 2024) and invested 4% more in 2023 compared to 2022, reaching \$112 billion (Jefferies, 2024), as shown in figure 1.

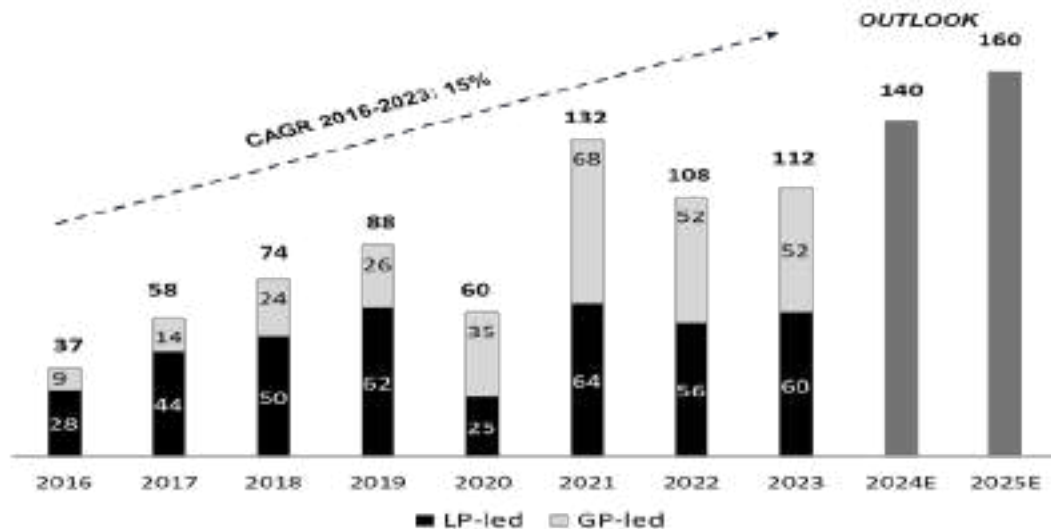
¹ University of Carlo Cattaneo – LIUC
e-mail: mlertora@liuc.it

² University of Carlo Cattaneo – LIUC
e-mail: cdesilva@liuc.it

³ University of Carlo Cattaneo – LIUC
e-mail: mmietto@liuc.it

⁴ University of Carlo Cattaneo – LIUC
e-mail: agervasoni@liuc.it

Figure 1. Private Equity secondary market investments (mld, \$)



Source: Personal elaboration on public data

PE secondary markets are usually characterised by two sub-strategies: (i) LP-led deals, i.e. a transaction in which a LP sells its stake in a (multiple) PE fund(s) to a secondary buyer, which replaces him in both duties and rights, and (ii) GP-led deals, which are originated directly by the PE sponsor and are aimed at reorganizing their portfolios while offering liquidity solutions to their current LPs.

Purpose of the paper. The present systematic review, which is still a work in progress, moves initial steps in reorganizing existing literature by detecting thematic connections and highlighting uncovered issues deserving further attention. More specifically, this research aims to contribute to the academic understanding of the secondary market in private equity and to provide valuable insights from current existing literature. This review provides a comprehensive and detailed overview of what has emerged in the outlined areas from academic and practitioner sides. This effort marks a crucial move towards bridging the current knowledge gaps, making a significant contribution to the scholarly dialogue, and proposing a valuable research direction for further investigations in the evolving landscape of the private equity secondary market.

Methodology. Our research has been developed through a systematic review of existing academic literature as well as of “grey literature” and practitioners reports. We also interviewed some senior PE secondary managers to understand principal topics and to validate our insights and future research directions.

Despite the growth of the market, academic research on the topic is scarce, in particular on GP-led transactions.

This gap represents a distinctive opportunity to contribute to the existing body of knowledge, providing new perspectives and interesting research insights.

In this regard, we developed a comprehensive review that not only sheds light on the complexities of this dynamic market but also highlights its potential as a rich line of inquiry, marking a significant contribution to the field.

In the initial phase of our exploration, we selected the most relevant research articles on the secondary market in private equity retrieved by different database such as Scopus repository, Web of Science, SSRN and Google Scholar.

This analysis unveiled that the academic literature has predominantly focused on LP-led transactions, underscoring the pivotal role of secondary market for PE investors. To broaden our understanding and capture other significant emerging evidence in this area, we include in our research the analysis of key market reports provided by leading industry players. This extension of our analysis revealed that the transactions led by General Partners (GP-led transactions) have begun to represent half of the market, while being quite entirely understudied.

Furthermore, to depict some preliminary evidence on secondary players performance, we retrieved data from publicly available sources and manually assembled to build the final sample of 192 observations. Each of them represents a PE fund active in the secondaries market with year of final close between 2000 and 2023, with details on geographical location, fundraising activity, and performance of 192 funds managed by 54 GPs at the global level.

Results. PE secondary markets in origin were composed almost exclusively of LP-led deals, i.e. a transaction in which a LP sells its stake in a (multiple) PE fund(s) to a secondary buyer, which replaces him in both duties and rights, i.e. obligations for remaining capital calls as well as being entitled to receive future distributions (Mason & Utke, 2023; InvestEurope).

Following the growth of LP-led deals in the last decade, which also surged after the global financial crisis, few academic studies studied specifically this segment of the market. Secondary buyers are seen as a provider of liquidity to selling LPs, typically in exchange for an “illiquidity” premium: they buy from sellers at a discount on NAVs, which is higher in crisis times (Hege & Nuti, 2011) or when the demand for liquidity exceeds the supply, and outperform sellers by a market-adjusted 5 percentage points annually (Nadauld et al. 2019).

Determinants of illiquidity in the secondary market are explained by specific fund characteristics that make its LPs more vulnerable in case of liquidity shocks. For instance, lower bids (i.e. higher discounts on NAVs) are associated to

young funds, which present the highest risk of funding future capital calls (Albuquerque et al, 2019), whereas larger buyout funds with smaller remaining commitments and larger remaining distributions have higher secondary market demand (i.e., lower discounts) (Kleymenova et al, 2012). Furthermore, fiscal policies also affect the size of the illiquidity discount, as different legal structures of PE funds and different jurisdictions can affect the magnitude of the tax discount (Mason & Utke, 2023).

On the contrary, there is almost no academic research on GP-led deals, which are a relatively new market phenomenon (Mason et al., 2023). Unlike LP-led transactions, GP-led deals originate directly from GPs, which aim primarily at reorganizing one or more funds under their control while offering liquidity solutions to the current LPs.

Although GP-led secondary transactions include different strategies (team spinoffs with assets, portfolio strip sale, tender offer, preferred equity) that have been used in the industry for more than 15 years, over the last few years continuation funds have become the most common structure. Continuation Funds (CFs) address situations where an asset (single-asset Continuation Fund) or a collection of assets (multi-asset Continuation Fund) are transferred from the original fund into a Continuation Fund managed by the same GP (Gottschalg 2023). The latter transfers assets from the original private equity fund to a new continuation fund at a discount. Although LPs have the option of leaving the primary fund, they are often offered the opportunity to reinvest in the continuation fund. The practice of rolling portfolio assets into so-called continuation funds offers the opportunity to LPs to continue investing in portfolio companies whose potential might be further exploited and gain an incremental return on the initial investment. However, it might also be argued that GP-led deals represent a “last-resort” exit route to distribute cash to their LPs, when other exit strategies are not viable due to external market conditions.

Notwithstanding the empirical relevance of the topic, several potential research questions on GP-led deals (pricing, performance, value creation, conflict of interests among stakeholders) remain unanswered so far.

In terms of pricing compared to NAVs, LP-led deals usually report higher discounts than GP-led deals. Among the latter, single-asset CF report lower discount to NAV than multi-asset due to their quality. The demand for quality over diversification is evident in the success of single-asset transactions, indicating that while these deals may not explicitly carry a “control premium” like in strategic sales, the quality of the underlying asset and alignment with GPs can drive favourable pricing (Farman 2023).

Bearing this in mind, empirical studies should appraise if the price paid for portfolio companies in GP-led transactions is close to the NAV and which are the main determinants of such a price.

Performance-wise, some market participants may have historically viewed GP-led transactions as a way for underperforming managers to extend the life of their holdings while distributing cash to original LPs. However, a recent white paper (HEC, 2024) find that CFs perform in line with buyout funds, with a lower dispersion of performance. This is consistent with the view that the portfolio companies transferred to the CFs are already known by the GP and management team and has already proven to perform well, hence generating less risky outcomes. Moreover, multi-asset GP-led deals should offer more diversification and risk-adjusted returns and share more similarities with LP-led transactions, as it is a way for the GP to anticipate the liquidity needs of its LPs.

Overall, private equity funds’ NAVs are not objective market-based values but can be subject to GPs manipulations (Nadauld et al, 2019). This leads to the necessity to perform a comparison of annualized returns of sellers and buyers also for GP-led deals, following the methodology of Nadauld et al. 2019 for LP-led deals.

The continuation vehicle typically resets the fund term and includes a new incentive structure for the GP in order to maximize alignment with the new LPs of the continuation fund. In almost cases, the GPs are typically requested to roll over 100% of their carried interest accrued into the new vehicle and to directly contribute with their cash in a higher proportion compared to the one usually asked for primary deals, to ensure an alignment of interest. LPs of the continuation fund want to see that the GP behaves as a “net” buyer in the transaction. In situations where the GP does not reinvest their entire carried interest into the new fund, it should offer a thorough justification for not transferring their full earned carried interest (ILPA 2023). This entails questions on potential different outcomes and conflict of interest around this topic.

From LPs’ viewpoint, the secondary buyers involved in CFs, especially single-asset, can benefit from the GP’s knowledge of the underlying asset, collaborate with the GP to further enhance the value of the asset and negotiate deal terms that more closely align the interests. This can reduce information asymmetry compared to commitments to primary buyout funds, while at the same time reducing diversification, and this can raise questions on the characteristics of LPs interested in these markets, their strategy and their business model.

The operating performance of portfolio companies transferred to CFs is another area of research deserving attention: do GPs transfer companies where value creation has not been fully reached and will be very high in the future, or is this transfer mainly realized to reach an exit, independent of adverse market conditions in the IPO market or the debt capital markets, for the existing LPs? Future studies should investigate if the operating performance of portfolio companies in the CFs is comparable or even higher to that reached during the holding period in the primary fund. CFs, in particular single-asset, could be closely compared to secondary buyouts (SBO). Academic literature previously focused on the operating performance of portfolio companies subject to SBO transactions, which involve portfolio companies sold from one GP to a different GP, finding that secondary buyouts display operational performance improvements comparable to

those of primary buyouts (Achleitner & Figge, 2012) and not significantly different from that of the peer group (Bonini, 2015).

Furthermore, more drivers of GPs willingness to realize continuation funds should be explored. For instance, future research could explore whether GPs who are in the process of fundraising a new fund are more inclined to initiate GP-led transactions on its previous fund, as this could help to improve their performance measures (i.e. DPI) and thus improve their likelihood to fundraise.

We also provide some preliminary general insights on the distribution and variability of performance data of secondary deals. Summary statistics for fund-level fundraising activity and performance are displayed below (Table 1).

Table 1. Summary statistics.

Variables	Obs.	Mean	Std. Dev.	Min.	p25	Median	p75	Max.
Funds raised (M; \$)	192	2,090.14	3,303.08	16	364.05	837.5	2,455	22,700
IRR	192	0.18	0.17	-0.32	0.09	0.15	0.23	1.30
TVPI	184	1.57	0.61	0	1.30	1.49	1.68	5.84
DPI	184	0.96	0.65	0	0.38	1.01	1.43	4.02

As emerges from Table 1, observed funds display wide variability in terms of fundraising activity. Overall, the mean raised amount totals \$2,090 M, ranging from a minimum of \$16 M to a maximum of \$22,700 M. The large gap between these two points and the high standard deviation indicates that fundraising activity suffers from substantial variation. Moreover, by comparing the mean with the median, we can easily see that the distribution of raised funds in our sample is positively skewed, suggesting that most funds have collected relatively small amounts while a few of them have attracted significant capitals from investors.

This trend may be partially explained by the high concentration of the secondaries market. Indeed, our analyses reveal that more than 50% of the total funds with available data with vintages between 2000 and 2023 are managed by only 4 out of 54 GPs.

As to performance, observed funds report an average IRR equal to 18%, with substantial fluctuations in the period considered. From Table 2, it is possible to clearly discern the evolution of fund returns across the different phases of the secondaries market, looking at different vintages. Throughout the 2000s, namely the decade in which the industry was dominated by LP-led deals, the average yearly IRR decreased, as more buyers approached the market and discounts on NAV narrowed, thus increasing competition, and offering more bargaining power to the seller.

Then, the mean funds' performance started to increase again around the year 2009, when the effects of the global financial crisis implied that more sellers approached the secondary markets. Starting from 2016-2017, when GP-led deals started to grow, returns of secondary funds started to increase as well as standard deviation. This is coherent with intrinsic characteristics of GP-led deals compared to LP-led, as the former should generate higher returns and greater risk as it entails less diversification. Eventually, data of the last 3 years show that the demand for liquidity of LPs grew due to fewer exit and distributions, with a stronger purchase power for secondary buyers reflected in higher returns.

Table 2. Evolution of IRR of secondary funds over time

Year	Mean	Std. Dev.	Min.	p25	Median	p75	Max.
2000	0.19	0.13	0.08	0.08	0.16	0.34	0.34
2001	0.12	0.11	0.04	0.04	0.12	0.20	0.20
2002	0.14	0.04	0.12	0.12	0.12	0.20	0.20
2003	0.25	0.09	0.19	0.19	0.20	0.35	0.35
2004	0.07	0.19	-0.10	-0.09	0.07	0.24	0.25
2005	0.03	0.06	-0.07	-0.01	0.05	0.06	0.11
2006	0.04	0.02	0.02	0.03	0.04	0.06	0.06
2007	0.06	0.07	-0.04	-0.01	0.07	0.13	0.15
2008	0.08	0.06	0.00	0.01	0.11	0.12	0.14
2009	0.14	0.07	0.08	0.09	0.13	0.14	0.29
2010	0.09	0.07	-0.02	0.05	0.09	0.15	0.19
2011	0.13	0.04	0.07	0.09	0.14	0.17	0.19
2012	0.19	0.10	0.07	0.14	0.15	0.21	0.41
2013	0.16	0.11	0.06	0.07	0.13	0.20	0.39
2014	0.16	0.10	0.08	0.10	0.12	0.17	0.41
2015	0.12	0.04	0.06	0.06	0.14	0.16	0.17
2016	0.21	0.14	0.07	0.15	0.17	0.22	0.69
2017	0.20	0.11	0.00	0.15	0.18	0.23	0.45
2018	0.21	0.10	0.08	0.12	0.18	0.27	0.37
2019	0.25	0.12	0.12	0.16	0.21	0.32	0.49
2020	0.29	0.21	0.03	0.17	0.28	0.35	0.91
2021	0.32	0.21	0.09	0.20	0.26	0.34	0.75
2022	0.12	0.38	-0.32	-0.32	0.33	0.35	0.35
2023	0.40	0.44	0.03	0.07	0.23	0.60	1.30

Research limitations. *The present research aims to investigate an entirely new line of research that finds no relevant studies in extant literature. For this reason, to collect a substantial but still a small number of papers, we used various databases such as (Scopus Repository, Web of Science, Google Scholar, and SSRN) combined with market reports and grey literature to get an overview of the research topic even on the practitioner side. Given the scarcity of current studies, the literature review presented here may not be exhaustive. This may leave several relevant open questions in addition to those emerging from the analysis. Given these premises, our objective was to collect initial insights regarding any aspect of this dynamic market, to provide other researchers with a comprehensive view of the market trend and give evidence of interesting future research insights to be further investigated.*

Managerial implications. *Private Equity secondary markets are intended to provide liquidity as well as strategic options to both LPs and GPs. As a relatively new and growing industry, few studies have been conducted so far. Nevertheless, the topic deserves attention as it has managerial implications for several stakeholders of the PE industry.*

First, LPs have historically embraced secondaries to rebalance portfolio exposure across strategies, geographies, vintages, and funds by selling their stakes in funds that no longer align with their current investment strategy or diversification objectives. Academic studies on LP-led deals show that secondary buyers typically outperform sellers, by buying at NAV discounts. On the contrary, there are no findings on the performance on continuation funds compared to original buyout funds. Further information on the performance of secondary deals is important for LPs to take informed decisions. Moreover, LPs need to understand different characteristics and business models of different sub-strategies of secondary buyers. Indeed, secondaries buyers executing LP-led deals should buy portfolios of LP stakes which entails portfolio companies close to an exit and thus should distribute in short time cash flows, whereas GP-led deals have a different rationale, in particular when looking at single-asset deals, as one would expect that the transferred asset would be held by the GP for another 4-5 years (a new holding period) in order to leverage on the yet unrealized value, and so LPs investing in secondary funds with this strategy should not expect distributions in short time.

An efficient secondary market would be particularly beneficial, besides LPs, for its implications for the venture capital asset class. Indeed, the surge in primary VC fundraising has allowed companies to stay private for longer because they can still raise ample cash without the full extent of the regulatory oversight and reporting requirements of the public market. Consequently, early investors, founders, and employees receiving company stock options in the early stage of the company face increasing difficulties in getting liquidity. Venture capital secondaries can be a way for venture-backed securities to solve this issue while remaining private.

From a GP perspective, secondary markets have played the role of providing ways to handle liquidity issues of LPs as well as rebalancing portfolios. In general terms, PE investors have a strong incentive to exit companies, which is driven by their compensation package, as their performance bonus (carried interest) is dependent on realized distributions to LPs and not on NAVs as it is for hedge funds' managers. The decision to roll-over their carried interest in a continuation fund, as well as providing relatively high new equity commitment to show to new LPs their commitment, is a pivotal choice that should be guided by the awareness of the still unrealized value in portfolio companies, or by a strong pressure from the LPs of the primary fund to receive distributions and the unavailability of other exit strategies. Additionally, through secondary transactions, especially those led by GPs, the alignment of interests between GPs and new LPs can be facilitated, with the former often reinvesting a significant portion of their accrued interest in the new vehicle.

For entrepreneurs interested in accessing PE, the institutionalization of an efficient GP-led market might be seen as a tool that reduces the perception and the risk to be forced by the GP to an external sale within about a 5-year period, avoiding the organizational and managerial consequences that a new buyer would imply, because the GP would have more flexibility to hold stakes longer if a growth path is undergoing.

Moreover, efficient secondary markets would have an impact on individuals. As the PE industry is growing, also the exposure of individuals on the asset class is booming, and the emerging of new digital platforms could accelerate this trend. However, one of the major issues for this “democratization” of the asset class is its intrinsic illiquidity, which can be improved by secondary markets.

From an industry perspective, the growth of AI could drive a boom for the industry. Since LP-led deals have an intensive data-driven process, it can be massively accelerated and automatized, decreasing the costs of due diligence, limiting human errors, improving efficiencies, and allowing secondary buyers to get more exposure to transactions.

From a policymaker perspective, the growth of PE secondary markets and over the last years of GP-led secondary transactions has attracted regulatory interest. As secondary markets entail potential asymmetry of information and conflicts of interest among various stakeholders, regulations should deal with the price-formation and fair-value appraisal of the deals.

Originality of the paper. *The research focuses on the PE secondary market that has not been extensively explored in academic literature. While LP-led deals have received considerable attention, GP-led transactions, the dynamics of liquidity provision, and the strategic motivations behind LPs' and GPs' participation, remain less examined. By delving into this understudied area, the paper addresses a gap in the current body of knowledge, offering insights into the complexities and nuances of secondary markets that are not widely investigated. This review opens multiple avenues for future research, serving as a catalyst for further investigation and contribution to the field.*

References

- ACHLEITNER A., FIGGE C. (2012), "Private Equity Lemons? Evidence on Value Creation in Secondary Buyouts", *European Financial Management*, vol. 20, n. 2, pp. 406-33.
- ALBUQUERQUE R., CASSEL J., PHALIPPOU L., SCHROTH E. (2018), "Liquidity Provision in the Secondary Market for Private Equity Fund Stakes", *SSRN Electronic Journal*.
- BOYER B., NADAULD T., VORKINK K., WEISBACH M. (2021), "Discount rate risk in private equity: Evidence from secondary market transactions", *The Journal of Finance*.
- BONINI S. (2015), "Secondary Buyouts: Operating Performance and Investment Determinants," *Financial Management, Financial Management Association International*, vol. 44, n. 2, pp. 431-470.
- GOTTSCHALG O. (2024), "Continuation Funds - Performance and determinants", White Paper, HEC School of Management, Paris.
- HEGE U., NUTI A. (2011), "The Private Equity Secondaries Market during The financial Crisis and the Valuation Gap", *The Journal of Private Equity*, vol. 14, n. 3, pp. 42-54.
- KLEYMENOVA A., TALMOR E., VASVARI P. (2012), "Liquidity in the Secondaries Private Equity Market".
- MASON P., UTKE S. (2023), "Private Equity Secondary Markets", *The Palgrave Encyclopedia of Private Equity*, pp. 1-6.
- MASON P., UTKE S. (2023), "Private Equity Fund Pricing in Secondary Markets - Effect of Taxes and Fund structure", *Journal of Alternative Investments*, vol. 25, n. 4.
- NADAULD T. SENSOY B, VORKINK K., WEISBACH M. (2019), "The liquidity cost of Private Equity Investments: evidence from secondary market transactions", *Journal of Financial Economics*, vol. 32, pp. 58-181

Websites

- https://www.jefferies.com/wp-content/uploads/sites/4/2024/01/Jefferies-Global-Secondary-Market-Review-January-2024_1cb2e6.pdf
- <https://www.bain.com/insights/topics/global-private-equity-report/>
- <https://www.preqin.com/news/gps-look-for-secondaries-to-capitalise-on-strong-demand>
- https://www.investeurope.eu/media/7317/2023_arthur-d-little_invest-europe-ppt-survey.pdf
- <https://www.secondariesinvestor.com/pricing-for-lp-leds-and-gp-leds-split-in-2022-campbell-lutvans/>
- <https://ilpa.org/wp-content/uploads/2023/05/Continuation-Funds-Considerations-for-Limited-Partners-and-General-Partners.pdf>

Unveiling the Pitfalls of Entrepreneurial Team Diversity: Insight from a post-mortem analysis of failed start-ups

ADELE PARMENTOLA¹ MICHELE COSTAGLIOLA DI FIORE²

Abstract

Entrepreneurial teams have received increasing attention in the academic debate. Diversity has been identified as one of the key characteristics that have a significant impact on start-up performance, being a double-edged sword. Despite the continuing interest in the topic, some questions remain unsolved. Existing studies provided more and more robust evidence for the positive effects of diversity than the negative ones. In addition, the relationship between diversity and performance has always been analyzed as static rather than dynamic, with a lack of research considering the stages of start-up development when analyzing the negative effects. To fill this gap, we aim to investigate which team diversity characteristics lead to start-up failure, considering the different stages of development. Based on interviews with founders of failed start-ups collected on the Failory database and applying a post-mortem analysis, we found that age, passion, vision, focus, and motivation diversity are the most critical factors in the transition of start-ups from one stage of development to another contributing to their failure. Our study provides a wide range of important implications for theory and practice. This is the first study to look specifically at the negative effects of diversity from a dynamic perspective, enriching the extant literature with a new theoretical framework. We also provide guidelines for managers involved in the start-up creation process who must be aware of the role of team characteristics and, in particular, team diversity, considering the issues, dynamics, and characteristics regarding the different stages of startup development.

Keywords: entrepreneurial team diversity, start-up failure, stages of development, post-mortem analysis

Framing of the research. *The entrepreneurial teams, defined as “two or more individuals who have a significant financial interest and participate actively in the development of the enterprise,” have attracted the attention of scholars from different domains representing a vast and interesting area of investigation (Horvatinovic et al., 2023). In particular, the role of the entrepreneurial team in start-ups has received increasing attention in entrepreneurship, entrepreneurial behaviors, and strategic management literature (Sundermeier and Mahlert, 2022). This growing attention stems from the fact that most start-ups are launched by a team rather than a hero entrepreneur (Knight et al., 2020; Yang et al., 2022). It has been demonstrated that teams have more resources, knowledge, and skills than individuals to deal with the various challenges they face at different stages of a firm’s development that require complexity and flexibility in decision-making (Chowdhury, 2005; West, 2007). More recently, research has recognized the importance of entrepreneurial teams and their characteristics in shaping new venture performance (Zhou and Rosini, 2015; Sundermeier and Mahlert, 2022). Drawing on the resource-based view and upper-echelon perspective, these studies suggest that the quality of human resources in the management team is crucial in predicting firm performance (Hambrick and Masons, 1984; Barney, 1991). Thus, the entrepreneurial team possesses intrinsically valuable and difficult-to-replicate human capital that can serve as the basis for the competitive advantage of new ventures (Barney, 1991). Team diversity is one of the characteristics that has attracted the most interest among scholars. More specifically, diversity at the team level is defined as “the distribution of differences among the members of a unit concerning a common attribute” (Harrison and Klein, 2007, p. 1200).*

The literature has classified the diversity variables according to three broad categories (Zhou and Rosini, 2015): demographic diversity, including age, gender, and ethnicity; informational diversity, including education and experience; and personality diversity, including different personality traits such as motivation, passion, and vision. These characteristics were related to various performance indicators, including team-level measures such as team efficiency and effectiveness, team productivity, team creativity, and team decision-making (Kollmann et al., 2017; Hou et al., 2021; Zhang et al., 2022; Ma et al., 2022) and firm-level measures such as survival, growth, innovation, external funding, and financial performance (Debrulle et al., 2020; Wise et al., 2022; Box and Segerling, 2018; Biga-Diambeidou et al., 2021; Zhou and Rosini, 2015)

¹ University of Napoli Parthenope
e-mail: adele.parmantola@uniparthenope.it

² University of Napoli Parthenope
e-mail: michele.costaglioladiiore@studenti.uniparthenope.it

Traditionally, diversity has been considered a double-edged sword. If it is true that it brings new perspectives and ideas to the entrepreneurial team, it is also the root of intra-team divergent behaviors that harm performance (Das et al., 2021). Following the theoretical foundation of similarity-attraction (Byrne, 1971), social identity (Tajfel, 1978), and self-categorization perspective (Turner, 1978), people are attracted to and want to interact with others who share their opinions and values because they see them as validation of their own (Byrne, 1971). Within teams, individuals identify and differentiate themselves from each other (Tajfel, 1978). Such categorization occurs when different subgroup members are perceived unfavorably (Turner, 1978). Also, according to the conflict view (Amason et al., 2006), diversity will lead to conflicts and undesirable outcomes because of disparate opinions and attitudes. Consensus is difficult to reach since team members frequently divide into subgroups with inadequate interaction and numerous communication issues. According to these perspectives, individual team members can quickly categorize different team characteristics, negatively affecting performance.

Delving deeper into the existing literature, some studies have suggested that age, educational background, and experience diversity negatively affect sales growth (Amason et al., 2006). Bjørnåli and Aspelund. (2012) suggested that age and industry background diversity negatively affect new ventures' international growth in building early alliances. Pinelli et al. (2020) found that the co-founder's educational background diversity, which is associated with a high level of education, hinders access to funding. Also, the diversity of experience in the founding team hinders the probability of accessing external funding (Blank and Carmeli, 2020). According to the study conducted by De Mol et al. (2020), diversity in terms of intensity separation, particularly in passion for developing the firm and passion for founding, negatively affects the obtainment of external funding. Lastly, experience diversity and educational level diversity were negatively related to financial performance in terms of ROA (Zhang et al., 2017). In addition to the paucity of studies analyzing the negative effects of team diversity on performance, these studies suffer from a static rather than a dynamic approach. None of the studies in this research stream demonstrated at which stage of start-up development specific team diversity attributes negatively affect start-up performance. As literature analyzing the dynamics of the entrepreneurial team composition suggests, teams are not static entities, but they evolve typically following the development stage of the firm (Patzelt et al., 2020; Yusubova et al., 2020). For example, a study on technology start-ups suggested that a team with solid technical expertise is more appropriate for the initial idea and product development stages. In contrast, in the later stages of commercialization and growth, team members with both technical and commercial experience are more in demand to sell the product in the market (Yusubova et al., 2020). The study by Tzabbar and Margolis (2017) also suggested that a specific entrepreneurial team composition depends on the firm's development stage. In particular, the authors showed that the positive effects of the human capital of the founding team in terms of educational heterogeneity and experience are stronger in the growth stage than in the early stage of a start-up. Another study suggested that heterogeneity of team industry and start-up experience is essential for start-ups to move from conception to creation (Munoz-Bullon et al., 2015). In sum, some entrepreneurial team characteristics, activities, and processes may be more or less critical during the different stages of firm development (Patzelt et al., 2020).

Purpose of the paper. Although the relationship between entrepreneurial team diversity and performance has been widely discussed in the literature, several questions remain unanswered. Firstly, little is known about the negative effects of diversity, particularly in terms of which variables harm performance. Existing studies provided more and stronger evidence for the positive impact of diversity than the negative ones. In addition, the relationship between diversity and performance has always been analyzed statically rather than dynamically, which means that studies fail to consider the different stages of venture development when analyzing negative effects.

Based on the above, our study aims to explore which team diversity characteristics lead to start-up failure, considering the different stages of development.

Methodology. Consistent with our aim, we employ a multiple case study following a post-mortem analysis (Yin, 1984). Post-mortem means analyzing the outcome retrospectively, which means "research in the past." Conducting post-mortem analysis is intricate due to its multifaceted nature, finding applications across diverse domains. For example, it can be used to analyze the project's final product, as Zhang and Iyer (2007) reported, or to help simulate the software process to improve software design estimation (Aguilar-Ruiz et al., 2001). Thus, this approach was typically used as an instrument of knowledge management in small and medium software projects (Schieg, 2007). In our work, post-mortem analysis is carried out to achieve an understanding of start-up projects that come to an end. Specifically, we followed a document-based post-mortem analysis method suggested by (Ahonen and Savolainen 2010). According to the authors, this type of analysis follows three steps:

- 1) Data collection: We collected online interviews with founders of failed start-ups from the Failory's database (<https://www.failory.com/startups>). The database regularly releases weekly articles, interviews, and narratives detailing both the successes and failures of startup founders, ensuring continuous updates. The database contains over 200 interviews, so the website allowed us to set up filters to speed up data collection. Firstly, we only considered interviewing entrepreneurs from failed start-ups, excluding successful ones. Secondly, we only considered failed team-based start-ups since we aim to investigate the problems and issues in an entrepreneurial team that were crucial in start-up failure. Once these filters had been applied, we read each reported interview to further refine it by excluding those whose failure was unrelated to the entrepreneurial team's characteristics. We ended up with a sample of 10 structured interviews with founders of failed start-up. The interviews are based on open-ended questions, which collect a range of information both related to the demographic characteristics of the founders and information related to the start-up history, such as the birth of the idea and how it was implemented, when things started to go wrong and what

were the main causes of failure. The interviews were supplemented by additional online material such as podcasts, posts, or other online news to get a complete view of the start-up story.

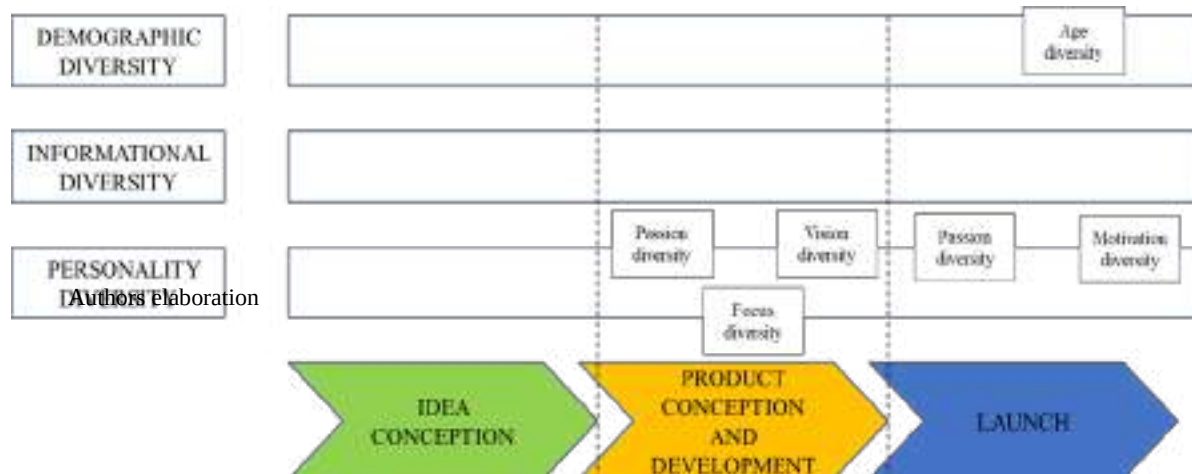
- 2) Data analysis: We analyzed the cases using the available documentation of each start-up in the following way. As we researched and obtained different information, it was possible to triangulate the analysis by cross-referencing it. The cases were constructed by anchoring the information to the various stages of the firm's development; thus, it was possible to capture the critical moments and issues regarding these phases. Reconstruction of start-ups' history helped us analyze the case in deeper detail, obtaining a great understanding of what went wrong
- 3) Presentation of results: In this last step, we reported the analysis result.

Results. The analysis of the negative effects of diversity showed that they need to be contextualized and considered in relation to the start-up's development stage. The negative effects of certain aspects of diversity vary from one stage to the next and are critical factors in determining failure. More specifically, they do not allow the company to move from one stage of development to another. Thus, by adopting a dynamic perspective, we have identified different stages of development: idea conception, product conception and development, and launch.

The first interesting aspect to emerge from our analysis is the nature of the diversity factors that have a negative impact. While the existing literature highlights demographic or informational factors such as age, education, and previous experience as critical factors, our study shows that the critical factors are purely cognitive or personality-related and, to a limited extent, demographic factors. Another interesting aspect, from a dynamic perspective, is that the negative effect of these variables only manifests itself in the product conception development and launch phases. Diversity does not seem to have a negative effect in the idea conception stage. Five start-ups failed in the product conception and development stage, and the diversity of passion, vision, and focus are the most critical factors in this phase. Team members often become detached from the business concept, resulting in a loss of enthusiasm for their work. Conceiving and developing a product necessitates ongoing collaboration among team members, occasionally involving trial and error that can lead to internal discord and divergent perspectives. At times, the workload becomes so demanding and exhaustive that the focus shifts toward irrelevant aspects, leading to delays and disarray. The other five start-ups failed in the launch phase, where diversity in age, passion, and motivation were the most critical factors. This stage is critical as the company interacts with the target market to secure its initial profits and expand gradually. Nonetheless, outcomes may not align with expectations; internal technical issues can result in the product failing to meet market demands. Financial losses and missed growth opportunities have left the team lacking motivation or enthusiasm.

For greater clarity, we have summarized the results of our study in a framework that highlights the negative impact of key diversity variables at different stages of development. In particular, following a combined approach, we match the concept derived from the literature regarding entrepreneurial team diversity and the different stages of development of start-ups identified. Thus, the framework combines two aspects: the main entrepreneurial team diversity attributes classified as demographic, informational, and personality (Zhou and Rosini, 2015), and the different stages of development classified as idea conception, product conception and development, and launch (Diakanastasi et al., 2018).

Fig. 1: Theoretical Framework



Research limitations. Our study has several limitations. First, our study analyzes failed start-up documents available online, providing relevant information up to the company's launch phase because we could not gather information about the subsequent development stages. Exploring this aspect in more detail is necessary to understand better which diversity factors may be critical in the later stages of development. Furthermore, it would be beneficial to include a control sample of successful start-up companies in the empirical analysis to determine whether a potential reason for failure has the opposite effect in a successful case study.

Managerial implications. From a practical point of view, we offer suggestions to managers and founders involved in a start-up creation process, showing that what is important is not only the entrepreneurial propensity but also the intrinsic characteristics of the people involved in the start-up as co-founders. Managers should pay greater attention to cognitive and personality-related diversity aspects rather than only demographic or informational ones. Understanding the varied viewpoints, passions, visions, and focuses within the team is vital for navigating the different stages of startup growth. Managing diversity is a continual process that necessitates constant monitoring and adjustments. Managers must be aware of the changing dynamics within the team and modify management practices accordingly to mitigate the possible negative effects of diversity as the startup proceeds through different stages of development. The proposed framework could be used as a practical tool for decision-making regarding diversity management within the entrepreneurial team, which is useful in identifying potential areas of concern and tailoring interventions or strategies accordingly to optimize team performance and mitigate risks associated with diversity.

The findings of this study could be helpful for incubators or accelerators that support start-up creation. They should implement courses or boot camps to manage diversity in an entrepreneurial setting, providing diversity training and awareness programs to help team members understand the value of diversity and develop the skills necessary to work effectively in diverse teams.

Originality of the paper. While existing studies have focused more on the positive results, our study focuses on the negative impact by identifying which diversity variables were decisive in the failure of start-ups. Moreover, since existing studies have always analyzed the effects of entrepreneurial team diversity on performance from a static perspective, our study combines the analysis of negative effects in a dynamic perspective, identifying which diversity characteristics were crucial in the transition from one development phase to another, thus leading to the start-ups' failure. Additionally, the framework represents an original contribution to the literature because it combines two aspects: the main entrepreneurial team diversity attributes classified as demographic, informational, and personality, and the different stages of development classified as idea conception, product conception and development, and launch. These aspects have always been considered separately in existing studies that consider the potential negative effect of team diversity on venture growth.

References

- AGUILAR-RUIZ J.S., RAMOS I., RIQUELME J.C., TORO M. (2001), "An evolutionary approach to estimating software development projects", *Information and Software Technology*, vol. 43, n. 14, pp. 875-882.
- AHONEN J.J., SAVOLAINEN P. (2010), "Software engineering projects may fail before they are started: Post-mortem analysis of five cancelled projects", *Journal of Systems and Software*, vol. 83, n. 11, pp. 2175-2187.
- AMASON A.C., SHRADER R.C., TOMPSON G.H. (2006), "Newness and novelty: Relating top management team composition to new venture performance", *Journal of Business Venturing*, vol. 21, n. 1, pp. 125-148.
- BARNEY J. (1991), "Firm resources and sustained competitive advantage", *Journal of management*, vol. 17, n. 1, pp. 99-120.
- BIGA-DIAMBEIDOU M., BRUNA M., DANG R., HOUANTI L.H. (2021), "Does gender diversity among new venture team matter for R&D intensity in technology-based new ventures? Evidence from a field experiment", *Small Business Economics*, vol. 56, n. 3, pp. 1205-1220.
- BJØRNALI E.S., ASPELUND A. (2012), "The role of the entrepreneurial team and the board of directors in the internationalization of academic spin-offs", *Journal of International Entrepreneurship*, vol. 10, pp. 350-377.
- BLANK T.H., CARMELI A. (2021), "Does founding team composition influence external investment? The role of founding team prior experience and founder CEO", *The Journal of Technology Transfer*, vol. 46, pp. 1869-1888.
- BOX M., LARSSON SEGERLIND T. (2018), "Entrepreneurial teams, gender, and new venture survival: contexts and institutions", *Sage Open*, vol. 8, n. 2, 2158244018777020.
- BYRNE D., GOUAUX C., GRIFFITT W., LAMBERTH J., MURAKAWA N.B.P.M., PRASAD M., RAMIREZ III M. (1971), "The ubiquitous relationship: Attitude similarity and attraction: A cross-cultural study", *Human Relations*, vol. 24, n. 3, pp. 201-207.
- CHOWDHURY S. (2005), "Demographic diversity for building an effective entrepreneurial team: is it important?", *Journal of business venturing*, vol. 20, n. 6, pp. 727-746.
- DAS W., DAS S., CHATTOPADHYAY M. (2021), "The emergence of entrepreneurial team as a research field-way forward", *Journal of Small Business and Enterprise Development*, vol. 28, n. 6, pp. 831-855.
- DE MOL E., CARDON M.S., DE JONG B., KHAPOVA S.N., ELFRING T. (2020), "Entrepreneurial passion diversity in new venture teams: An empirical examination of short-and long-term performance implications", *Journal of Business Venturing*, vol. 35, n. 4, 105965.
- DEBRULLE J., MAES J., GARDINER E. (2020), "New ventures: how team motivation affects financial outcomes", *Journal of Business Strategy*, vol. 42, n. 6, pp. 367-373.
- DIAKANASTASI E., KARAGIANNAKI A., PRAMATARI K. (2018), "Entrepreneurial team dynamics and new venture creation process: an exploratory study within a start-up incubator", *Sage Open*, vol. 8, n. 2, 2158244018781446.
- HAMBRICK D.C., MASON P.A. (1984), "Upper echelons: The organization as a reflection of its top managers", *Academy of management review*, vol. 9, n. 2, pp. 193-206.
- HARRISON D.A., KLEIN K.J. (2007), "What's the difference? Diversity constructs as separation, variety, or disparity in organizations", *Academy of management review*, vol. 32, n. 4, pp. 1199-1228.
- HORVATINOVIC T., MIKIC M., DABIĆ M. (2023), "Dissecting entrepreneurial team research: a bibliometric analysis", *Review of Managerial Science*, vol. 17, n. 8, pp. 2973-3011.
- HOU F., SU Y., QI M., WANG L., WANG Q. (2021), "Entrepreneurial team knowledge diversity and creativity: a multilevel analysis of knowledge sharing, individual creativity, and team creativity", *Frontiers in Psychology*, vol. 12, 717756.

- KNIGHT A.P., GREER L.L., DE JONG B. (2020), "Start-up teams: A multidimensional conceptualization, integrative review of past research, and future research agenda", *Academy of Management Annals*, vol. 14 n, 1, pp. 231-266.
- KOLLMANN T., STÖCKMANN C., MEVES Y., KENSBOCK J. M. (2017), "When members of entrepreneurial teams differ: linking diversity in individual-level entrepreneurial orientation to team performance", *Small Business Economics*, vol. 48, pp. 843-859
- MA H., XIAO B., GUO H., TANG S., SINGH D. (2022), "Modeling entrepreneurial team faultlines: Collectivism, knowledge hiding, and team stability", *Journal of Business Research*, vol. 141, pp. 726-736
- MUÑOZ-BULLON F., SANCHEZ-BUENO M.J., VOS-SAZ A. (2015) "Start-up team contributions and new firm creation: The role of founding team experience", *Entrepreneurship & Regional Development*, vol. 27, n. 1-2, pp. 80-105.
- PATZELT H., PRELLER R., BREUGST N. (2021), "Understanding the life cycles of entrepreneurial teams and their ventures: An agenda for future research", *Entrepreneurship Theory and Practice*, vol. 45, n. 5, pp. 1119-1153.
- PINELLI M., CAPPÀ F., FRANCO S., PERUFFO E., ORIANI R. (2020), "Too much of two good things: Effects of founders' educational level and heterogeneity on start-up funds raised", *IEEE Transactions on Engineering Management*, vol. 69, n. 4, pp. 1502-1516.
- SCHIEG M. (2007), "Post-mortem analysis on the analysis and evaluation of risks in construction project management", *Journal of business Economics and management*, vol. 8, n. 2, pp. 145-153.
- SUNDERMEIER J., MAHLERT N. (2022), "Entrepreneurial team diversity-A systematic review and research agenda", *European Management Journal*.
- TAJFEL H.E. (1978), *Differentiation between social groups: Studies in the social psychology of intergroup relations*. Academic Press.
- TURNER J.C. (1978), Social categorization and social discrimination in the minimal group paradigm. *Differentiation between social groups: Studies in the social psychology of intergroup relations*, vol.101, 140.
- TZABBAR D., MARGOLIS J. (2017), "Beyond the start-up stage: The founding team's human capital, new venture's stage of life, founder-CEO duality, and breakthrough innovation", *Organization science*, vol. 28, n. 5, pp. 857-872.
- WEST III G.P. (2007), "Collective cognition: When entrepreneurial teams, not individuals, make decisions", *Entrepreneurship Theory and Practice*, vol. 31, n. 1, pp. 77-102.
- WISE S., YEGANEHI S., LAPLUME A.O. (2022), "Start-up team ethnic diversity and investment capital raised", *Journal of Business Venturing Insights*, 17, e00314.
- YANG H., COZZARIN B.P., PENG C., XU C. (2022), "Start-ups and entrepreneurial teams", *Managerial and Decision Economics*, vol. 43 n, 5, pp. 1167-1184.
- YIN R.K. (1984), *Case study research: Design and methods*. Beverly Hills, CA: Sage.
- YUSUBOVA A., RIES P., CLARYSSE B. (2020), "Entrepreneurial team formation and evolution in technology ventures: Looking beyond the top management team", *Journal of Small Business Management*, vol. 58, n. 5, pp. 893-922.
- ZHANG C., WANG C. (2017), "The impact of Top Management Team heterogeneity on the performance of technology start-ups", *Eurasia Journal of Mathematics, Science and Technology Education*, vol. 13, n. 12, pp. 8057-8065.
- ZHANG Y., IYER S.P. (2007, June), "Error report driven post-mortem analysis", In *15th IEEE International Conference on Program Comprehension (ICPC'07)* (pp. 208-220), IEEE.
- ZHANG Z., ZHU L., CHEN G., SHANG L., ZHAO Q., REN F. (2022), "How entrepreneurial team heterogeneity impacts decision-making performance? An input-process-output approach", *Chinese Management Studies*, vol. 16, n. 5, pp. 965-992.
- ZHOU W., ROSINI E. (2015), "Entrepreneurial team diversity and performance: Toward an integrated model", *Entrepreneurship Research Journal*, vol. 5, n. 1, pp. 31-60.

Websites

<https://www.failory.com/startups>

Agility to Handle Dynamics of Business Transformation

GIUSEPPE PIRRONE¹ MARGHERITA MILOTTA² BIRGIT HAGEN³ MARTIN CLOUTIER⁴

Abstract

This study analyzes the challenges and solutions of agile transformation using Group Concept Mapping methodology (GCM). We selected executives from large companies, scaleups, and external stakeholders to grasp different perspectives. The GCM identifies key challenges and solutions, emphasizing the importance of holistic understanding and agility during transformation journeys. Employee engagement, strategic changes, and iterative approaches are all critical to success. Cultural change requires tools and stakeholder engagement to be effective. Our contribution fills a gap in the agility literature by providing actionable insights for managers leading transformation efforts in dynamic markets.

Key words: agility, transformation, holistic, GCM, VUCA

Framing of the research. Geopolitical changes, economic instability, technical advances and environmental disasters are some of the characteristics of a changing world. In response to this dynamic environment, the phenomena and need for change have become a hot topic, attracting the attention of businesses and academics.

In recent years, practitioners and scholars have focused on various transformation concepts, such as agile, digital, and sustainable transformation (Strode et al., 2022; Grass, Backmann, & Hoegl, 2020; Warner & Wäger, 2019; Beretta & Smith, 2023). Furthermore, scholarly research stresses the need of organizational and strategic agility in attaining a competitive advantage and driving organizational performance, particularly in volatile, unpredictable, complex, and ambiguous (VUCA) situations (Troise et al., 2022). It highlights an organization's ability to manage chaotic and changing business landscapes, allowing for the capitalization of market opportunities and timely threat mitigation (Li et al., 2021). Despite evidence of agility's benefits, scientific work on agile transformation, particularly implementation elements, is lacking. Work on related issues, such as digital transformation, emphasizes the relevance and relationship to agile transformation (Beretta & Smith, 2023; Li et al., 2021), even referring to agility as "the engine of organizational transformation" (Beretta & Smith, 2023). Our perspective of agile transformation is holistic, encompassing both the design and implementation aspects of transformation. Such a comprehension includes more than just fundamental agile approaches; it also goes to the strategic level. It refers to the organization's capacity to reconfigure its strategy, culture, or structure in response to changing external and internal circumstances (Prange, 2021). Firms that adopt agile transformation may adjust quickly and take proactive actions (Girod, Birkinshaw, & Prange, 2023; Teece, Peteraf, & Leih, 2016). Thus, agile can enhance corporate performance (Handscomb et al., 2020; Salo, 2017) and competitiveness (Teece, Peteraf, & Leih, 2016). By researching agile transformation holistically, an in-depth analysis of external and internal variables is critical to identifying drivers, problems, and potential solutions as the change evolves. Existing research on agile transformation mostly departs from situations of "environmental turbulence" (e.g., Prange, 2021; Li et al., 2021), as previously indicated. This is not entirely unexpected given today's fast-paced and unpredictable world, in which firms must negotiate rapid technological breakthroughs, fluctuating consumer preferences, and environmental disasters. More precisely, external variables may not only initiate rapid change, but they may also provide ongoing obstacles that necessitate adjustments along the route. Unlike the description of the external environment, the analysis of internal agile transformation drivers shows tremendous nuance and interplay, making orchestration in design and execution crucial. Top management support is seen as crucial to success (Beretta & Smith, 2023; AlNuaimi et al., 2022; Grass, Backmann, & Hoegl, 2020). Transformational leadership is also highlighted (Bass & Riggio, 2006), which complements employee empowerment (Grass, Backmann, & Hoegl, 2020; Strode et al., 2022). Transformational leadership is distinguished by the ability to build relationships with subordinates while also educating and motivating (Ramadan et al., 2023). Co-strategizing procedures and the quality of internal conversation thereby connect the aspects of agile transformation design and implementation. Although "openness" to external stakeholders might provide the same benefits, Morton (2023) cautions that their engagement may add problems such as information leakage, misunderstanding, duties confusion, and information overload. The mentality and culture of an open-learning business,

¹ University of Pavia
e-mail: giuseppe.pirrone01@universitadipavia.it

² University of Pavia
e-mail: margherita.milotta@unipv.it

³ University of Pavia
e-mail: birgit.hagen@unipv.it

⁴ e-mail: cloutier.martin@uqam.ca

with its dedication to continuous improvement, promotes the development of an agile workforce (Strode et al., 2022), which is another essential factor in strengthening a company's flexibility and readiness for change (Conboy & Carroll, 2019).

Technology and technology (i.e., digital) skills are cited as enablers of agile transformation (Troise et al., 2022; AlNuaimi et al., 2022). The role of technology is defined as the ease of delivering and sharing relevant information for decision-making across internal and external stakeholders, functions, and processes (Li et al., 2021). Finally, agile transformation presents a strategic problem with conflicts that businesses and leaders must address. These tensions are related to the balance between existing and new ways of strategizing, organizing, and learning (Smith & Lewis, 2011), the exploitation of existing capabilities versus the need to build new ones, the oscillation between maintaining today's business and transforming into tomorrow's business, or deciding between the need for speed and an incremental and slower transformation process. Proactively detecting, analyzing, and managing conflicts and problems will aid in achieving a successful transition trajectory.

Purpose of the paper. The external environment is increasingly dynamic and uncertain, unexpected and disruptive events require the ability of companies to react promptly to change. Indeed, transformation is now a watchword for most organizations to survive both exogenous and endogenous changes (Uhl & Gollenie, 2016). Organizational agility assumes a key role in such a volatile and uncertain environment (Troise et al., 2022), and it is deemed to be a driver of the transformation process (Beretta & Smith, 2023). Scholarly work emphasizes the role of agility as a driver of transformation and the need for a comprehensive study of agile implementation (Beretta & Smith, 2023). Despite its strategic importance, the implementation of agile transformation remains a considerable challenge (Annosi, Foss & Martini, 2020). Given the scarcity of existing work, our study seeks to fill the gap in understanding the implementation side of agile transformation by investigating and answering the research question:

What are the conceptualizations and perceptions of the challenges encountered in agile transformation trajectories and what solutions can be envisioned to address them?

Methodology. To effectively address our research aim, we employed a mixed method called Group Concept Mapping (GCM), which is beneficial for estimating conceptual representations and testing perceptions of those representations (Rosas, 2017; Trochim, 2017). To estimate participant groups' conceptualizations of a specific object, system, or topic, it employs both multivariate statistical techniques (e.g., agglomerative hierarchical cluster analysis, or AHCA) and qualitative techniques (e.g., brainstorming sessions and group interviews). It is frequently utilized in planning and evaluating social programs, health programs and concerns, education, entrepreneurship, and quality process improvement, among other areas. Inductive work may be done to comprehend polysemous situations using GCM in exploratory work (Cloutier et al., 2019). Executives from scaleups, major, established businesses, and players from the larger ecosystem made up participants, who were carefully chosen. Scaleups evolve to stay agile, whereas large, established organizations start the process of transformation to become agile. Lastly, the stakeholder viewpoint makes it possible to get objective data. As this study indicates, the GCM includes research phases that are connected to certain particular activities. Idea generation and discussion on a focus request are part of phase 1. Phase 1 involves group discussions and phase 2 is researcher-centered and involves coding content and developing items representative of their experience. Phase 3 involves structuring and evaluating the items by participants who participated in phase 1 and other participants new to the research who had experience with agile transformation. Phase 4 involves using multivariate statistical methods to analyze the results, and Phase 5 involves answering the research questions and assessing the results for external validity. This phase is based on the experience of the participants.

Results. The results are composed of two main parts. First, the concept map which is a conceptual representation of the main transformation challenges and solutions that emerged through the six focus groups. Second, the pattern matches illustrate the rank ordering of the perception of each cluster's importance and feasibility.

The Group Concept Map (Figure 1) clearly shows that participants have placed Strategic Enablers at the center of the concept map. This cluster includes 5 items, for example, 'To make room and space for continuous improvement' (Item 88), and 'To clearly define actions and objectives to be achieved by sharing decision power and responsibility' (Item 69). The central cluster serves as a systemic "attractor", influencing dynamic interactions among all other clusters on the map (Trochim & Cabrera, 2005). It shares boundaries with surrounding clusters, denoting common characteristics. The overarching interpretation posits that it absorbs tensions arising from dynamic interactions among all clusters depicted on the concept map. For instance, Item 69 - 'To clearly define actions and objectives to be achieved by sharing decision power and responsibility' (Strategic Enablers cluster) may be seen to interact with Item 25 'To understand what the people in leading positions need to know and what to delegate' (Preparing Human Capital, Readiness and Trust cluster) and Item 84 'To support and let individuals and teams figure out solutions' (Team Integration, Cohesion, and Reach cluster). Thus, from a strategic point of view, the central cluster influences the other clusters.

Figure 1. The Group Concept Map



The cluster named *Strategic Enablers* contains five items. As anticipated, it is located at the center of the map, and it is the most strategic one. It encompasses a series of ‘intangible’ items that lay the strategic foundations for a proper transformative process (e.g., Item 69 - ‘To clearly define actions and objectives to be achieved by sharing decision power and responsibility’). This cluster can be considered as representative of dimensions that unpack overall transformation goals and facilitate or catalyze solutions for action identified in the other clusters on the map.

Action Enabling Tools and Processes is a nine-item cluster. Its items focus on actions needed to carry out an organizational transformation process. Consequently, attention is directed towards indispensable tools and processes pivotal in facilitating transformation, such as, ‘To (re)allocate resource (e.g., capital, human, financial, etc.)’ (Item 1); ‘To do an organizational maturity level assessment, (whether informally or formally)’ the attention to rules and careful planning of the transformation (e.g., Item 8 - ‘To have micro-planning in fast transformation’), and the role of supporting tools, such as ‘flexible systems (e.g., IT systems), as the backbone of transformation’ (Item 2).

The cluster on *International and Local Stakeholder Engagement* has ten items. This cluster expresses a bilateral way of engaging with the external environment, both in terms of the international context and external stakeholders’ engagement more broadly. This cluster emphasizes the importance of the international context to sense opportunities or assess the current strategy (e.g., Item 10 - ‘To be exposed in an international context helps to understand whether the company direction is the right one’), and the role of external stakeholders. In line with a networked view of the firm, external stakeholder involvement is critical for both the assessment of the company’s efforts but also for its alignment with the business environment (e.g., Item 49 - ‘To collect feedback and align with external stakeholders to change’).

The cluster *Team Integration, Cohesion and Reach* contains thirteen items. It relates to the relevance of training and support offered to teams and its evolution in a transformation process (e.g., Item 6 - ‘To have training for team integration and teamwork’), but also the adoption of cross-functional teams and people rotation (e.g., Item 85 - ‘To create the conditions for working together across departments’). Along with efforts to increase transformation understanding, skills, and competencies internally goes the recognition that new people must share the company’s transformation attitude and new culture, willing to continuously improve and change (e.g., Item 59 - ‘To hire new people aligned with the right transformation attitude’).

Preparing Human Capital, Readiness and Trust is a fifteen-item cluster that captures another aspect of human capital. While the cluster *Team Integration, Cohesion and Reach* foster the holistic view of a company, here the emphasis is on employees and their role as autonomous actors. Participants convey the relevance of involving employees in a transformation process (e.g., Item 28 - ‘To start transformation first with people, i.e. ‘companies are of people’) and the need to raise ‘Awareness of today’s different ways of working’ (Item 15). Furthermore, to be ready for change and take on responsibility for the change to happen, employees need ‘to feel part of the transformation i.e., feel part of the solution’ (Item 36). The role of hierarchy - responsibility and delegation (e.g. Item 25 - ‘To understand what the people in leading position need to know and what to delegate’ - is a key topic. Employees need to be motivated to ‘explore new things in their work in line with a changing culture’ (Item 38) implying at the same time a new role of management and a different way to exercise leadership. The challenge of persuading middle management to embrace change emerges as a prominent obstacle during transformative phases (e.g., Item - 47 ‘To support middle management in understanding how its role, attitude, and behavior ought to change’). Consequently, a pivotal aspect of managing organizational transformation lies in providing robust support to middle management, facilitating their comprehension of forthcoming changes in roles and responsibilities (Girod, Birkinshaw, & Prange, 2023).

The cluster Culture Transformation and Outgrowth contains eleven items. Participants widely concur that organizational transformation necessitates a profound cultural shift. First, individuals must comprehend the rationale behind the change, the intended direction, and share its objective (e.g., Item 39 - 'To create a shared understanding within the company of why change is necessary e.g., benefits of change, resistance to change avoidance, feel the need to change, etc.'). Second, it is imperative to foster a change-prone culture at all levels that facilitates, supports, and aligns people with the change process. This involves the acceptance of potential errors as the workforce adapts to radically different operational modes and adheres to solutions proposed across various hierarchical levels (e.g., Item 77 - 'To perceive agile transformation as a radical change of mindset, more flexible and open'). It is crucial to recognize that cultural change extends beyond individual transformation; it must be accompanied by a radical shift in work methodologies, internal organizational structures, and organizational processes (Item 71 - 'To be ready to change the company's structure while transforming'; Item 62 - 'To be ready to change soft and hard factors e.g., culture, structure, processes').

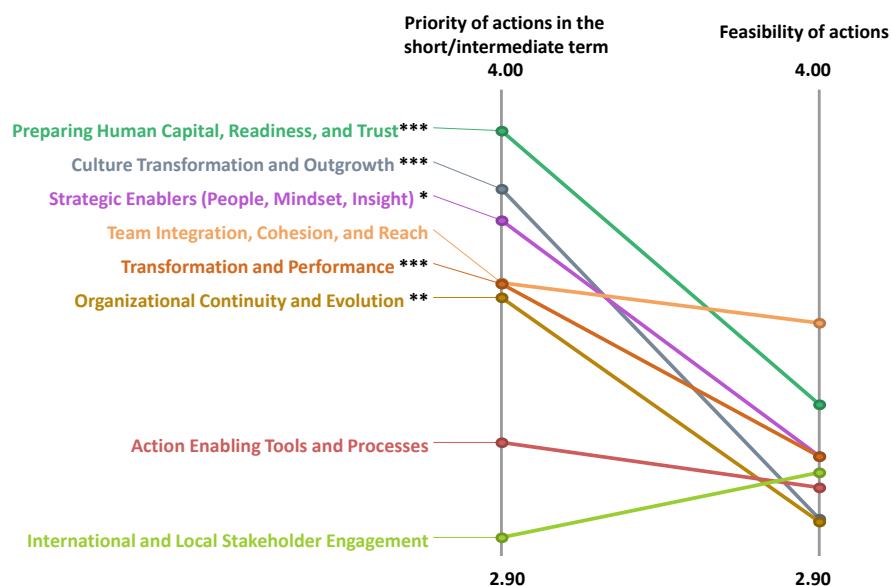
Organizational Continuity and Evolution is an eleven-item cluster. This cluster underscores the dynamic and evolving nature of the transformation journey, emphasizing the importance of adaptability and continual refinement in organizational practices. There is widespread consensus that a change process involves finding a balance among the actions to be implemented. This encompasses understanding how much emphasis to place on 'business as usual' as compared to the ongoing change and strategizing process (e.g. Item 44 - 'To find a balance between doing business and transforming at the same time'). The adoption of agile principles into organizational culture emerges as a powerful catalyst for driving collective efforts toward successful adaptation (Item 55 - 'To mobilize agile principles for culture change'). Furthermore, overcoming information bottlenecks in the minds of founders and managers is essential to unlocking innovation and streamlining decision-making processes (Item 68 - 'To break the information bottleneck that resides in the minds of founders and managers'). At the same time, preserving the benefits of smallness, such as information sharing and agile decision-making, remains critical during transformation efforts (Item 74 - 'To keep the advantage of smallness'). Moreover, individuals must recognize that an incremental and continuous transformation process is needed 'to facilitate the acceptance of change' (Item 52), so that the organization as a whole 'constantly learn while transforming/improving processes' (Item 73).

Transformation and Performance is a cluster composed of sixteen items that underscore the imperative to identify suitable performance metrics and create a common understanding (e.g. Item 24 - 'To develop an understanding of the relevant KPIs'). In turn, such standard processes are conducive to performance as they link back to goals and planning and, at the same time, enable corrective action. The transformation itself needs to be (re)active and responsive to changes but also the notion of performance as evidenced in Item 63 - 'To be reactive to changes in the environment, customer request, and regulation' - emphasizes a key goal and outcomes of agile transformation. Items in this cluster also evidence the need for a holistic view of transformation to achieve performance (e.g. Item 42 - 'To focus on several interrelated problems rather than on one problem at the time').

The pattern matches graph (Figure 2) shows estimates of the perceived priority and feasibility scales of the agile transformation clusters identified on the concept map. Pattern matches help identify how clusters are rated relative to the two scales examined (Likert-type five-point scales). Overall, the nonparametric Wilcoxon signed-rank test for matched data shows a statistical difference among participants between the priority and feasibility scales (p -value < 0.05).

Figure 2. Pattern Matches of the relative priority and feasibility of agile transformation actions†

† Ratings based on five-point Likert-type scales; Nonparametric Wilcoxon rank-order test for matched data pairs p -value < 0.05 between priority and feasibility scale ratings; *** p -value < 0.001; ** p -value < 0.002; * p -value < 0.05.



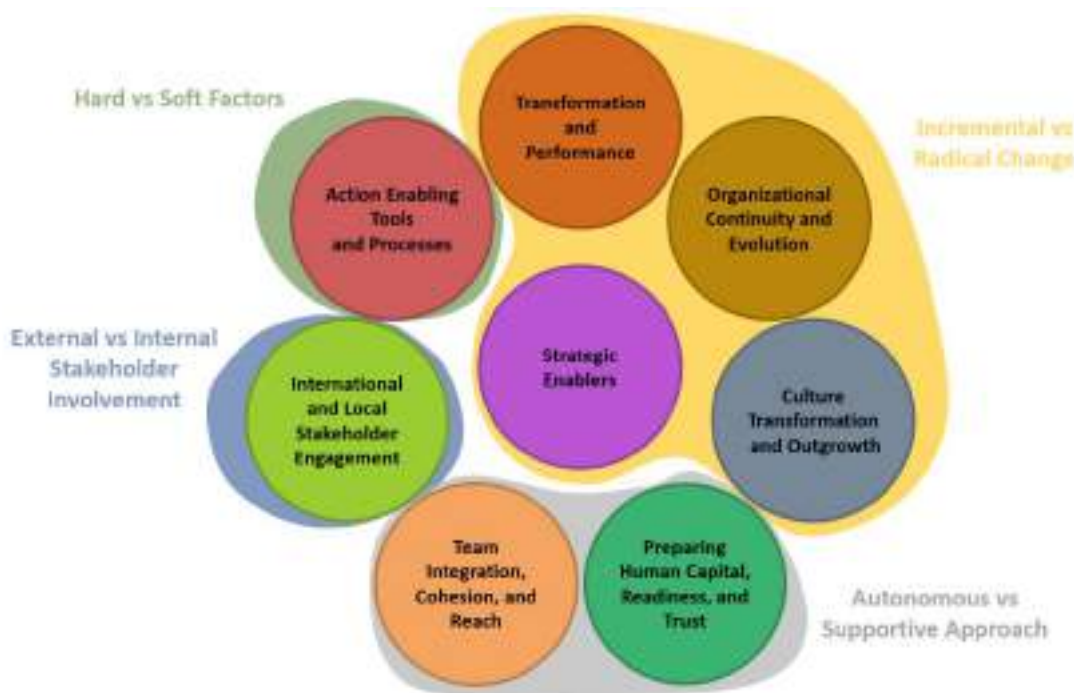
The results indicate that in agile transformation, participants have prioritized item sets pertaining to the clusters Preparing Human Capital, Readiness and Trust (rank 1); Culture Transformation and Outgrowth (rank 2); and Strategic Enablers (People, Mindset, Insight) (rank 3). It is interesting to note that participants perceive a high priority regarding cultural-related aspects yet the feasibility of such a softer dimension is not perceived as readily quickly achievable. As seen, the cluster ranked as a top priority, Preparing Human Capital, Readiness and Trust, ranks second in matters of feasibility. Looking for additional outcomes, the cluster Culture Transformation and Outgrowth ranks 7th which is much lower. Culture is typically slower to change (Grass, Backmann & Hoegl, 2020; Tronvoll et al. 2020), and thus, the lower feasibility of this dimension may not constitute an outright surprising result. This ranking relates perhaps to the fact that human capital internal training and support might need additional impetus that could be brought from external resources, whether through hires, stakeholder engagement, or additional structural-systemic alignment to reinforce a culture change.

However, Transformation and Performance is ranked 4th regarding its feasibility and is statistically different; and Organizational Continuity and Evolution is ranked 8th, that is last, for feasibility. The imbalance between the priority and feasibility for the latter cluster is perhaps associated with the tendency to prioritize major changes, despite feasibility hurdles that may arise from a shared understanding in the organization of the need to undertake major transformations. The priority and feasibility difference could arise from the belief that certain changes could have more significant and crucial impacts over time. Yet, when it comes to implementation, the readiness for concrete actions may not match their perceived immediate priority.

Surprisingly, Action Enabling Tools and Processes rank 7 and International and Local Stakeholder Engagement rank 8. External resources and know-how can support agility and change initiatives (Morton, 2023; Li et al., 2021), yet participants may undervalue stakeholders' contributions and the role of tools in easing implementation.

In today's business landscape, organizations must constantly evolve to remain competitive. Both external pressures and internal factors like company growth and shifting roles drive this transformation, highlighting its complex nature. To facilitate discussion, we have employed latent constructs to group the clusters into different regions of meaning (RM) for concept map interpretation (Kane & Trochim, 2007).

Figure 3. Concept map and regions of meaning (RM)



The RM Hard vs Soft Factors includes the cluster Action Enabling Tools and Processes. This region evidences tensions and the need for synergy for considering and measuring both hard and soft factors for an effective organizational transformation. Key performance indicators and their respective tools provide insights into an organization's transformation trajectory and outcome. However, organizations show a tendency to measure and emphasize primarily tangible and easily quantifiable results (Zairi, 2012).

Identifying appropriate proxies, continuous tracking, and incorporating these intangible aspects into the assessment is imperative (e.g., Item 46 - 'To customize tools and frameworks with the challenges to be addressed'). In addition to the ability to identify the 'what' and the 'how' to measure, it is also crucial to know the 'when' to measure during the

transformation process. This necessitates a balanced assessment encompassing both hard and soft factor metrics, that may challenge conventional ones. Thus, organizations are urged to look beyond 'surface-level' measures.

The RM Autonomous vs Supportive Approach, unites two clusters, emphasizing the pivotal role of individuals during the transformation process. As mentioned above, human capital and their involvement are considered essential and highly prioritized (e.g., Item 36 - 'To make people feel part of the transformation i.e., feel part of the solution').

Employee empowerment would necessitate a shift towards taking on responsibility and action at all hierarchical levels and ensure that people are prepared and able to accept such a shift (e.g., Item 66 - 'To motivate individuals and teams to take responsibility for change every step of the way'). Similarly, managerial levels need to comprehend the shift towards a supportive rather than authority-oriented approach (e.g., Item 47 - 'To support middle management in understanding how its role, attitude, and behaviour ought to change') - that transformational leadership is needed, and which structures and decision-making processes are requisite. Striking a balance involves defining explicit rules and roles while empowering teams to function autonomously through effective delegation (Grass, Backmann & Hoegl, 2020).

The External vs Internal Stakeholder Involvement RM includes one cluster. Examining the cluster in more detail, items describe two macro topics referring to stakeholders' involvement and international presence. The company's international presence items (e.g., Item 10 - 'To be exposed in an international context helps to understand whether the company direction is the right one'), claims that international exposure can be crucial for designing, assessing or potentially pivoting transformation efforts. Also, the literature emphasizes international exposure as a benefit to capture emerging trends and gain competitive advantage (Hagen et al., 2012). However, this cluster is not considered a priority for our participants. This could be because companies are already international and do not plan to further reinforce international activities in the short term. Yet, it would not be advisable to conclude that the international aspect is not relevant in the transformation context.

Furthermore, we can see that participants 'underestimate' the role of stakeholder engagement, both local and international, in the success of transformation. Although internal efforts are key, stakeholder engagement beyond company boundaries is needed to become and stay agile (Hagen et al., 2019). An explanation here may lie in the fact that stakeholder involvement may not occur in the early stages of a transformation. Extant literature on transformation claims that engaging stakeholders is a key pillar in the transformation (Morton, 2023; Li et al., 2021). However, this collective viewpoint among participants appears to challenge conventional expectations. While the transformation process inherently focuses on internal facets of the company, initiating and hoping to conclude a transformation without engaging external stakeholders can be considered unrealistic.

The Incremental vs Radical Change RM encompasses four clusters, namely Transformation and Performance, Organizational Continuity and Evolution, Strategic Enablers, and Cultural Transformation and Outgrowth. These clusters collectively pertain to the formulation of a transformative strategy within an organization. While recognizing the key role of individuals, teams and culture in the transformation, the need of changes to structure and operation models must be underscored when it comes to execution.

Research limitations. The limitations of this study are mainly the small sample size and the limitation to the generalization of the results. Although the number of participants in the focus group phase was more than sufficient to generate a good representation of the conceptual domain, a larger number of experts involved in the sorting and rating phase would have been preferable, as this allows for subgroup research. Indeed, the objective of the study is to provide an aggregated overview on the topic of agile transformation by considering the experiences and perspectives of all actors potentially involved in this transformation process.

At the same time, however, our choice and the number of participants in the sorting and rating phase do not allow us to further break down our results to have an intra-group view as well. The threshold for the size of the sorting and rating groups is between 20 and 25 to obtain valid results (Trochim, 1989). For this reason, in the future, it might be useful to collect more data to be able to observe not only the aggregate information but also to be able to compare the results between the different participants' sub-groups.

Managerial implications. This article addresses the implementation phase of agile transformation to broaden our comprehension of organizational and strategic agility. It makes a significant contribution to the existing body of knowledge on this topic by situating organizational renewal in today's dynamic business environment. In addition, the research has practical implications for managers in that it provides a solid foundation for the effective management of organizational change. It equips managers with the skills needed to lead and manage their organizations through important periods of change and adaptation, providing useful guidance and effective procedures.

Originality of the paper. This study aims to fill the gap in understanding the implementation side of agile transformation by illustrating the conceptualizations and perceptions of the challenges encountered in agile transformation trajectories and what solutions can be imagined to address them. In addition, the application of a mixed methodology, such as GCM, made it possible to estimate conceptual representations and measure perceptions about those representations. Indeed, it uses qualitative methods (e.g., brainstorming sessions and group interviews) and multivariate statistical methods to estimate the conceptualizations of groups of participants on a particular topic.

Participants (executives from large and established enterprises, scaleups, and stakeholders from the broader ecosystem) were purposively selected. In fact, large and established enterprises initiate the transformation process to become agile, while scaleups transform to remain agile. Finally, the stakeholder perspective allows unbiased information to be gathered.

References

- ALNUAIMI B.K., KUMAN SINGH S., REN S., BUDHWAR P., VOROBYEV D. (2022), “Mastering digital transformation: The nexus between leadership, agility, and digital strategy”, *Journal of Business Research*, vol. 145, pp. 636-648
- ANNOSI M.C., FOSS N., MARTIN, A. (2020), “When agile harms learning and innovation: (and what can be done about it)”, *California Management Review*, vol. 63, n. 1, pp. 61-80
- BERETTA M., SMITH P. (2023), “Embarking on a business agility journey: Balancing autonomy versus control”, *California Management Review*, vol. 65, n. 4, pp. 93-115
- CLOUTIER L.M., LARIVIERE D., TREMBLAY G. (2019), *Field-oriented contextualization of the Group Concept Mapping method: Illustrations in the health sector in France; and Canada, The United States and The United Kingdom*.
- CONBOY K., CARROLL N. (2019), “Implementing large-scale agile frameworks: Challenges and recommendations”, *IEEE Software*, vol. 36, n. 2, pp. 44-50, 8648270
- GIROD S.J.G., BIRKINSHAW J., PRANGE C. (2023), “Business agility: Key themes and future directions”, *California Management Review*, vol. 65, n. 4, pp. 5-21
- GRASS A., BACKMANN J., HOEGL M. (2020), “From empowerment dynamics to team adaptability: Exploring and conceptualizing the continuous agile team innovation process”, *Journal of Product Innovation Management*, vol. 37, n. 4, pp. 324-351
- HAGEN B., ZUCHELLA A., GHOURI P.N. (2019), “From fragile to agile: Marketing as a key driver of entrepreneurial internationalization”, *International Marketing Review*, vol. 36, n. 2, pp. 260-288.
- HAGEN B., ZUCHELLA A., CERCHIELLO P., DE GIOVANNI N. (2012), “International strategy and performance—Clustering strategic types of SMEs”, *International Business Review*, vol. 21, n. 3, pp. 369-382.
- HANDSCOMB C., MAHADEVAN D., SCHOR L., SIEBERER M., NAIDOO E., SRINIVASAN S. (2020), *An operating model for the next normal: Lessons from agile organizations in the crisis*. McKinsey & Company
- KANE M., TROCHIM W.M.K. (2007), *Concept mapping for planning and evaluation*. SAGE.
- LI H., WU Y., CAO D., WANG Y. (2021), “Organizational mindfulness towards digital transformation as a prerequisite of information processing capability to achieve market agility”, *Journal of Business Research*, vol. 122, pp. 700-712
- MORTON J. (2023), “Strategy making as polyphony: How managers leverage multiple voices in pursuing agility”, *California Management Review*, vol. 65, n. 4, pp. 22-42
- PRANGE C. (2021), “Agility as the discovery of slowness”, *California Management Review*, vol. 63, n. 4, pp. 27-51
- RAMADAN M., BOU ZAKHEM N., BAYDOUN H., DAOUK A., YOUSSE S., EL FAWAL A., ELIA J., ASHAAL A. (2023), “Toward digital transformation and business model innovation: The nexus between leadership, organizational agility, and knowledge transfer”, *Administrative Sciences*, vol. 13, n. 8, pp. 185
- ROSAS S.R. (2017), “Group concept mapping methodology: toward an epistemology of group conceptualization, complexity, and emergence”, *Quality & Quantity*, vol. 51, n. 3, pp. 1403-1416.
- ROSAS S.R., KANE M. (2012), “Quality and rigor of the concept mapping methodology: a pooled study analysis”, *Evaluation and Program Planning*, vol. 35, n. 2, pp. 236-245.
- SMITH W., LEWIS M. (2011), “Toward a theory of paradox: A dynamic equilibrium model of organizing”, *Academy of Management Review*, vol. 36, n. 2, pp. 381-403
- STRODE D.E., SHARP H., BARROCA L., GREGORY P., TAYLOR K. (2022), “Tensions in organizations transforming to agility”, *IEEE Transactions on Engineering Management*, vol. 69, n. 6, pp. 3572-3583.
- TEECE D., PETERAF M., LEIH S. (2016), “Dynamic capabilities and organizational agility: Risk, uncertainty, and strategy in the innovation economy”, *California Management Review*, vol. 58, n. 4, pp. 13-35
- TROCHIM W.M. (1989), “An introduction to concept mapping for planning and evaluation”, *Evaluation and program planning*, vol. 12, n. 1, pp. 1-16.
- TROCHIM W.M. (2017), “Hindsight is 20/20: Reflections on the evolution of concept mapping”, *Evaluation and Program Planning*, vol. 60, pp. 176-185.
- TROCHIM W.M.K., CABRERA D. (2005), “The complexity of concept mapping”, *Emergence: Complexity and Organization*, vol. 7, n. 1, pp. 11-22.
- TROISE C., CORVELLO V., GHOBADIAN A., O'REGAN N. (2022), “How can SMEs successfully navigate VUCA environment: The role of agility in the digital transformation era”, *Technological Forecasting and Social Change*, vol. 174, 121227
- TRONVOLL B., SKLYAR A., SÖRHAMMAR D., KOWALKOWSKI C. (2020), “Transformational shifts through digital servitization”, *Industrial Marketing Management*, vol. 89, pp. 293-305
- UHL A., GOLLENIE L.A. (Eds.), (2016), *A handbook of business transformation management methodology*. Routledge.
- WARNER K.S.R., WÄGER M. (2019), “Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal”, *Long Range Planning*, vol. 52, n. 3, pp. 326-349
- ZAIRI M. (2012), *Measuring performance for business results*. Springer Science & Business Media.

Venture-Builders' Program Design and the creation of Scaleups

PAOLA BELINGHERI¹ CHRISTIAN LECHNER²

Abstract

The Venture-Building model has increasingly gained popularity in recent years across Europe as a promising model of innovation and entrepreneurship that can help mitigate the risks of startup creation and maximize the chances of success. In contrast with traditional business acceleration programs that support existing startups - who already have a founding team and a somewhat developed idea - with resources and networks, Venture-Builders are concerned with creating or building new startups starting only from an idea. They typically aim to create scalable companies or scaleups from the outset, drawing on the expertise of entrepreneurs-in-residence who have previous entrepreneurial successes under their belt.

As Venture-Builders have gained in popularity and success, a host of different actors, such as venture capitalists and business angels, universities, private companies and public sector institutions, have started to develop and implement their own Venture-Builders. These differ in various aspects, such as the infrastructure they make available to the startups, the degree of control they exercise, the extent to which they focus on specific sectors or technologies, where they seek ideas, how many ventures they build at the same time, and their relationship to funding sources. These aspects are, however, also connected with the ability of firms to scale and grow. Different Venture-Building models may thus be more, or less, suited to fulfilling the promise of creating scaleup companies, that exhibit sustainable growth, consistently over time.

Therefore, the paper attempts to shed light on the previously unexplored link between the features of the Venture Building process and the creation of scaleup companies.

Through a series of interviews conducted on Venture-Builders across Europe, set up by different types of actors, we create different archetypes of Venture-Builders and discuss their suitability to producing scaleups.

Key words: Venture-building model; Startup Studio model; Venture-building process; Entrepreneurship; Scaleup

Framing of the research. *The Venture-Building model has increasingly gained popularity in recent years across Europe and beyond. In contrast with traditional business acceleration programs, that support existing startups - that already have a founding team and an idea - with resources and networks, Venture-Builders are concerned with creating new startups from scratch, starting only from an idea (Kohler and Baumann, 2015; Pauwels et al., 2016). They often use a Factory metaphor to symbolize the churning out of startups - that they have "built" - consistently over time. The business ideas that are transformed into startups are either developed internally or sourced from external ideators. Startup execution is guided by a team of Entrepreneurs-in-Residence selected by the Venture-Builder that typically have had previous entrepreneurial or domain experience (i.e. marketing, sales, business design, talent acquisition, etc.) (Lesage, 2022). The startup stage follows rigorously outlined processes, where the Venture-Building team supervises and actively engages within the start-ups through thorough idea and solution validation steps to mitigate potential failures and de-risk the startup process (Sgambati, 2022). In addition, the newly minted startup teams are provided with resources and networking opportunities. In this way, Venture-Builders boast that they can create companies that will move more quickly from the startup to the scaleup phase.*

Venture-builders cultivate large talent pools that they can draw on to build capable teams for each startup idea. Building several ideas at a time in a repeatable fashion improves resource allocation for talent and capital, which can be redistributed between different startups as the projects advance and either fail, pivot, or continue. In addition to the team, which is an essential resource for any startup success, Venture-Builders also provide financial resources, attracting them both through their network and through their reputation in the funding (and founding) landscape. Finally, repeatable processes, that typically follow a lean startup methodology or a stage-gate process with multiple reviews, help to keep the startups on track towards achieving product-market fit (Kohler and Baumann, 2015).

Venture-builders are thus a promising model of innovation and entrepreneurship that can help mitigate the risks of startup creation and maximize the chances of success (Sgambati, 2022). Thanks to the success rates of this model, coupled with an increasing attention on entrepreneurship as a driver of economic growth, in the past years the creation of new

¹ LUISS
e-mail: pbelingheri@luiss.it

² LUISS Business School
e-mail: christian.lechner@luissbusinessschool.it

Venture Builders has risen rapidly, with 560 active venture-builders globally in 2021, expected to double to 1200 by 2023 (Alhokail et al., 2023, 2019). By 2019 Europe caught up with the USA in terms of the number of Venture Builders, and these had collectively raised as much Venture Capital as was available to traditional start-ups exiting accelerators (Alhokail et al., 2019).

This proliferation of Venture-Builders has created a large heterogeneity in the actors who are engaging in venture-building, which encompass venture capitalists, business angels, private companies, universities, and government institutions. In addition, the different Venture-Builders encompass a variety of design features that differ according to the vision of their founders. This has created a proliferation of models and terms, such as Startup Studio, Startup Factory, Company Builder, Venture Studio, Startup Foundry, and Startup Nursery (Lawrence et al., 2019). These different models may have an impact on the growth rates and the ambitions of start-ups that are born through the venture-Building model, thus impacting the number of scaleups that can emerge and thrive in the market.

Scaleups are defined as companies that achieve both high growth and wealth creation, and who thereby create a virtuous cycle where the wealth that is created can be used to fuel further growth. This happens thanks to a scalable business model, where scalability implies that the value proposition can be replicated such that revenues increase faster than costs (Monteiro, 2019). The transition from a startup to a scaleup is typically visible when the startup starts to harvest its first few clients, known as gaining market traction. At this stage, the more loosely structured startups need to acquire a more formal structuring that can support rapid growth (Picken, 2017).

Venture-Builders' Design

Examining Venture-Building models, Alhokail et al., (2019) identified six dimensions which can be used to describe different archetypes that have emerged over the years. These six dimensions are named: The Guild, The Control, The Idea, The Funding, The Volume, and The Focus.

The Guild: The Guild is the infrastructure package that Venture-Builders supply to their startup companies. It includes the Entrepreneurs-in-residence, technological know-how, finance, and physical spaces. The Guild may be shared horizontally between different startups in the portfolio to increase cost-effectiveness, or it can be distributed vertically for each business.

The Control: Venture-Builders have different rules governing the equity they hold in startups, according to their coaching intensity and required degree of control. Venture Builders who own significant amounts of equity, also have a higher control over their startups' decisions and may coach the startup for longer periods even beyond graduation from the Venture-Builder program itself. According to Alhokail et al., (2019), founders' equity stakes could range from 1% to 90%, which creates some very different conditions for the start-ups themselves.

The Focus: Venture-Builders can choose to operate across different sectors, covering a wide spectrum of technologies and markets, or they may operate vertically in a specific sector or on a specific technological solution (e.g. Artificial Intelligence or Deep Tech). The first approach is called the "Generalist" while the second is called "Specialist" (Alhokail et al., 2019). The first approach creates a critical mass of diversified investments that can mitigate overall risk, while the second approach benefits from a strong specialization of resources and know-how that leads to synergies that can be exploited by all startups in the program.

The Idea: Idea generation is a critical component of the Business Model of Startup Studios. Sourcing might be done externally or internally. External sourcing may take two forms: fostering external early-stage firms or scanning the market for the best venture to produce a Copycat (Sgambati, 2022). Internal idea sourcing, on the other hand, is a procedure that involves the commitment of Startup Studio specialized employees to generate new ideas.

The Volume: Startup studios can develop a few or many businesses concurrently. This is likely the most challenging choice to make when designing a Venture-Builder's Business Model. On the one hand, undertaking a small number of ventures, lessens the benefits and the synergies of the studio model, while on the other hand, overseeing too many initiatives concurrently degrades both the quality and number of human resources available to the guild for individual ventures. As a result, being able to balance resources and the number of ventures is a Key Success Factor for startup studios.

Funding: Startup studios can choose to finance their portfolio with their own resources or can choose external funding. Hybrid solutions are common, with external partners piggybacking onto the funding that the Venture-Builder makes available for the start-ups.

These dimensions are also very much related to startup growth once it reaches the market and may result in very different success rates in creating companies that rapidly advance towards the scaleup stage. This paper thus maps the different models of Venture-Builders in Europe and relates their model to the effective capability of building scaleup companies.

Purpose of the paper. Literature has emphasized how, from the outset, Venture-Builders aim to create startups with scalable business models. Indeed, Venture-Builders themselves also broadcast the objective of creating scale-ups rather than traditional start-ups. A comparison of the top 21 companies to emerge from Venture-Builders with the top 21 companies that graduated from acceleration programs revealed that companies from accelerators raise 105% more money, but companies from Venture-Builders have a 26% higher growth (Szigeti, 2016). This would imply that Venture-Builders are indeed more adapted to creating scale-ups. However, an analysis on outliers cannot be considered representative of the overall success rate of Venture-Building, which, similarly to startup creation, follows a power-law distribution with a very long tail of unsuccessful cases and a few very successful ones (Clauset et al., 2009). We contend that there are design features of Venture-Builders that are more or less effective in producing scaleup companies and attempt to investigate this further.

Methodology. The research is based on multiple case studies through desk research of 32 Venture-Builders in Germany, The Netherlands, The UK and Spain, and interviews conducted between 2023 and 2024 of 6 venture-builders in Italy and Greece, where we used the owners and managers of the venture-building programs as key informants. The desk research and interviews enabled us to explore the different components of the actors' Venture-Building model following Sziget (2016). From the individual cases, we derived different archetypical models of venture-builders. Considering differing contexts, the case conclusions develop propositions that express which of these models are more suited to producing scaleups rather than startups, presenting some case studies to illustrate the theory.

Results

Venture-Building Models

The following descriptions were derived from the interviews and the desk research, and they concern different venture-building models according to the different types of actors that created the Venture-Builders. The Venture-Builders used to create these models are spread across Europe, both in highly innovative and low innovating regions. They typically concern high-tech industries and digital technologies (Daunfeldt et al., 2016), although there are also some generalists that have no particular focus.

Universities

Guild: Universities tend to compose teams from internal affiliates only (students, researchers, faculty, alumni), without providing external or expert CEOs and other key staff.

Control: Universities typically hold no control over the startups they create through venture-building

Idea: Idea generation is generally internal and is deputized to the students

Funding: Universities typically provide no funding for the startups, beyond some small awards (sometimes from external partners).

Volume: Universities tend to produce many businesses concurrently, to accommodate all the students with an entrepreneurial vocation. Out of all the groups built, there is an award at the end for a handful of the best ideas and executions.

Focus: Universities tend to be generalists in their focus, in line with their vocation as multidisciplinary institutions, but mirroring the disciplinary areas where their research efforts are present or strong.

Additional information: Universities often create these programs as part of their third mission. The key metrics they mentioned were the number of startups created, the number of students participating in the program, and the market cap of all the startups created over time.

Institutions

Guild: Institutions rely on external participants to form teams, without providing key staff

Control: Institutions typically hold no control over the startups they support

Idea: Idea generation is typically external and is entirely up to the startups

Funding: Institutions may provide funding, but it's generally limited to seed capital or capital to sustain the acceleration phase.

Volume: Institutions tend to produce several businesses concurrently

Focus: Institutions tend to be generalist, while focusing on broad issues for the municipality or region where they are embedded (e.g. smart cities, transportation, tourism)

Additional information: Institutions reported wanting to accelerate local innovation and inject new technologies into the current ecosystem as their main motivation for creating a venture-builder. They rely on partnerships with key actors from the local ecosystem to create the entrepreneurial ecosystem.

Corporations

Guild: Corporations tend to provide all the staff internally from their company

Control: Corporations tend to maintain at least partial control over the startups they create through venture-building

Idea: Ideas are created internally by employees and managers

Funding: Corporations typically provide seed funding for the startups and further funding for a subset.

Volume: Corporations typically focus on small to medium volumes

Focus: Corporations tend to have a more specialized outlook with a focus on their key markets and technological areas

Additional information: Corporations are looking to capitalize on internal under-used knowledge to open up new markets and new revenue streams. They often rely on external partners for the Venture-building program at least at the

outset, because specialized knowledge is necessary to create a successful venture-builder. They fund the venture-building programs themselves.

Venture-Capitalists and Angel Investors (VCs)

Guild: VCs often provide the CEO and other key personnel in the venture. They typically look for professionals or researchers with technical expertise who need the complementary management expertise. They either personally participate in the ventures or look for capable managers within their personal network.

Control: VCs take a percentage of control of the final idea, to sustain their business model.

Idea: Ideas are typically scouted from the external landscape, both the professional world and the research and university sector.

Funding: VCs may provide their own funding to start-ups and seek to attract external funding from other VCs. In this case, credibility of the venture-building staff is critical to attract and retain funding sources. Credibility implies having already created successful businesses in the sectors they focus on.

Volume: VCs typically go for very low volumes, as the venture-building staff is personally invested in each venture and is part of the founding team.

Focus: VCs are often sector-specific and pursue a sectoral or even more narrow focus, where they are the most knowledgeable and credible.

Additional information: VCs and Angel Investors treat venture-building as a business, in which they obtain returns by providing all the building blocks to sustain great ideas. Their credibility is thus on the line with each new startup. They use their own funding, however, may also resort to external investors such as other VCs, banks, and private companies.

Venture-Building Models and Scaleups

Literature has examined several conditions that are important in the creation of scaleups. First, when companies reach the scaleup phase, they have a significant increase in the resources they need to fuel their growth. These resources must come from the broader entrepreneurial ecosystem in which the company is embedded, to which they typically get access through the Venture-Builder itself and the networks in which it is embedded (Mohr et al., 2014). In addition, the Board of directors and the managers of such a scaleup also play a role in this search for resources, through their personal networks but also increase the ability of scaleups to capitalize on the resources they receive (Zahra et al., 2009). Scaleups also often need human resources, that must be hired and trained. In this context, both the networks of the startups but also the mentorship and guidance from top management can be of great importance in this process. This is even more important in the event that the startups are in high-tech sectors and need advanced expertise for their further development, which seems to be often the case (Daunfeldt et al., 2016).

From this point of view, the different Venture-Building models have distinct advantages. On one hand, the more specialized models such as those of VCs/Angels and Corporations have in-depth domain knowledge and networks of human resources they can tap into, as well as providing specialized founders and managers through the guild. In addition, they can usually mobilize more capital. Universities can mobilize specialized human resources but have less to offer in terms of entrepreneurial experience and access to funding. Public institutions rely on external actors to mobilize all necessary resources, and thus seem to be in a weaker position to provide these essential assets.

Literature also focuses on the amount of control that the scaleup founders have over the company. In particular, control is expressed as a currency that may be exchanged for external resources including funding (Wasserman, 2017). Thus, the more the scaleups are dependent on external resources, the more they will have to relinquish control over their firm in exchange for these. Venture-Builders who retain a large amount of control over their startups, such as the VC/Angel models and the corporate models, may in future hamper the businesses' ability to acquire precious resources at the scaleup phase. The university and public institution model, by hardly taking any control, may leave more flexibility to the startups in this sense.

Finally, the power-law distribution would imply that creating scaleups is also a numbers game. Therefore, those Venture-builders who create many tens of startups at the same time, i.e. typically those of universities, have higher probabilities of producing scalable businesses that ultimately see above-average returns.

Research limitations. The paper is based on an analysis of venture-builders in Europe. This is original w.r.t previous literature which has focused more on the US market, however European conditions for entrepreneurship are significantly different than in other global regions and could give rise to Venture-building models that are not easily replicable elsewhere. There are also country-level indicators that influence the dynamism and thus the potential for producing scaleups of the business environment (Bravo-Biosca et al., 2016), and these could in future be factored into the discussion.

Managerial implications. The results of this research could help inform Venture Capitalists to understand the potential returns they could receive by backing a Venture-Builder. It could help innovators who are considering pursuing the Venture-Building route or the Accelerator route to understand tradeoffs between the support they are receiving and the capital they are relinquishing. Finally, it could support policymakers who are considering promoting or supporting these types of initiatives as part of regional and national innovation strategies.

Originality of the paper. The paper attempts to shed light on the previously unexplored link between Venture Studio Design and the creation of scaleup companies. As the Venture Builders or Venture Studio model becomes more popular, different actors are experimenting with different designs according to their specific roles, objectives and experiences, we assess on a theoretical basis which of these models may be more suited to producing scaleups.

References

- ALHOKAIL M., CELEN A., TILAN R. (2023), "Startup Studio Map, the Most Comprehensive List of Startup Studios Around the World. Enhance Ventur. URL <https://www.enhance.online/startup-studio-map/> (accessed, 2.14.24).
- ALHOKAIL M., CELEN A., TILANI R. (2019), Startup Studios - Innovating Innovation (White Paper). Enhance, Dubai.
- BRAVO-BIOSCA A., CRISCUOLO C., MENON C. (2016), "What drives the dynamics of business growth?", *Econ. Policy*, vol. 31, pp. 703-742.
- CLAUSET A., SHALIZI C.R., NEWMAN M.E.J. (2009), "Power-Law Distributions in Empirical Data", *SIAM Rev.*, vol. 51, pp. 661-703.
- DAUNFELDT S.-O., ELERT N., JOHANSSON D. (2016), "Are high-growth firms overrepresented in high-tech industries?", *Ind. Corp. Change*, vol. 25, pp. 1-21.
- KOHLER R., BAUMANN O. (2015), "Organizing a Venture Factory: Company Builder Incubators and the Case of Rocket Internet.", *SSRN Electron. J.* <https://doi.org/10.2139/ssrn.2700098>
- LAWRENCE J., FULTON K., NAROWSKI P., HURWITZ J. (2019), The rise of startup studios (White Paper). Global Startup Studio Network.
- LESAGE D. (2022), "The Startup Studio Guide to the "Entrepreneur In Residence" role. Medium. URL <https://roamy.medium.com/the-startup-studio-guide-to-the-entrepreneur-in-residence-role-45e12d02006c> (accessed, 2.14.24).
- MOHR V., GARNSEY W., THEYEL G. (2014), "The role of alliances in the early development of high-growth firms", *Ind. Corp. Change*, vol. 23, pp. 233-259.
- MONTEIRO G.F.A. (2019), "High-growth firms and scale-ups: a review and research agenda", *RAUSP Manag. J.*, vol. 54, pp. 96-111.
- PAUWELS C., CLARYSSE B., WRIGHT M., VAN HOVE J. (2016), "Understanding a new generation incubation model: The accelerator", *Technovation, Technology Business Incubation*, vol. 50-51, pp. 13-24.
- PICKEN J.C. (2017), "From startup to scalable enterprise: Laying the foundation", *Bus. Horiz.*, vol. 60, pp. 587-595.
- SGAMBATI S. (2022), The copycat business model in the venture building sector: a comparative analysis [WWW Document]. URL <http://tesi.luiss.it/33946/> (accessed, 2.14.24).
- SZIGETI A. (2016), Anatomy of Startup Studios: A behind the scenes look at how successful venture builders operate, Kindle Edition.
- WASSERMAN N. (2017), "The throne vs. the kingdom: Founder control and value creation in startups", *Strateg. Manag. J.*, n. 38, vol. 255-277.
- ZAHRA S.A., FILATOTCHEV I., WRIGHT M. (2009), "How do threshold firms sustain corporate entrepreneurship? The role of boards and absorptive capacity", *J. Bus. Ventur., Special Issue Corporate Entrepreneurship*, vol. 24, pp. 248-260.

Entrepreneurial Ecosystems: exploring the Italian Tech Scaleups scenario

SERENA VALENTE¹ ALESSIA PISONI²

Abstract

The ecosystem approach has increasingly attracted the interest of management scholars starting from Moore's contribution of 1993. Ecosystem literature has developed over time, differentiating ecosystems on the basis of attributes and goals. Among these, entrepreneurial ecosystems (EE) have recently emerged as a novel domain of research.

After the seminal work of Cohen (2006), EE research has been complemented by an increasing number of contributions. Based on extant literature reviews (Wurth et al., 2022), it took almost a decade for research focused on EE to flourish. Contributions span from theoretical work aimed at understanding what ecosystems are (Isenberg, 2010; Mason and Brown, 2014; Stam, 2015; Audretsch et al., 2019), which conceptual boundaries and goals they have (Stam, 2015; Stam and Spigel, 2016; Spigel, 2017; Cobben et al., 2022), how complementarities and interdependencies are managed (Feld, 2012; Stam, 2015; Spigel and Harrison, 2018), to empirical research aimed mainly at highlighting level and typologies of output (Brown and Mason, 2017; Audretsch et al., 2019; Stam and van de Ven, 2021).

A recently published systematic analysis of the EE literature stress the importance of "re-orienting research on entrepreneurship and economic development toward productive entrepreneurship" (Wurth et al., 2022: 731). The concept of productive entrepreneurship is sought to capture both EE output (entrepreneurship) and outcome (aggregate value creation). As stated by Stam and van de Ven (2021: 817), "there are no perfect measures of either entrepreneurship or aggregate value creation". In this respect, understanding the dimensions and indicators to be used to study productive entrepreneurship in this rapidly emerging research field represents a crucial issue (Cobben et al., 2022).

On this basis, we aim at contributing to this research need by focusing on scaleups as a proxy of productive entrepreneurship. Leveraging the privileged access to the Mind the Bridge proprietary database, we focus the analysis on the Italian tech scaleups scenario (Mind the Bridge Tech Scaleup Italy Report, 2023). We aim to provide an overview of its main characteristics with descriptive statistics and statistical analysis, by thoroughly investigating the scaleups' economic-financial performance, innovation performance, and markets served. Variables related to the founding team characteristics, such as founders' background and evolution over time are also considered. We also aim to identify common growth patterns both at national and regional level and their evolution over time.

Future research implies extending the study at the international level, with a preliminary focus on the European scaleup scenario.

At the time of writing the study is still in progress.

Key words: entrepreneurship; entrepreneurial ecosystems; productive entrepreneurship; scaleup.

Framing of the research. Besides the fact that entrepreneurial ecosystems (EEs) have gained increasing popularity, a common definition agreed upon by researchers and practitioners does not yet exist (Stam and van de Ven, 2021; Wurth et al., 2022). The EE concept has two components. On the one hand, "entrepreneurial" refers to "a process in which opportunities for creating new goods and services are explored, evaluated and exploited" (Stam and van de Ven, 2021: 811, based on Schumpeter, 1934; Shane and Venkataraman, 2000). On the other hand, the "ecosystem" component is a transdisciplinary concept arising from the biology field (Stam and van de Ven, 2021; Theodoraki et al., 2022) characterized by three core features: co-evolution, mutualistic interdependence and a complex system of interactions among actors. Accordingly, EEs are defined as "a set of interdependent actors and factors" (Stam, 2015: 1765). These actors co-evolve, making the ecosystem of actors a complex interactive system (Stam and van de Ven, 2021).

EEs consist of different typologies of actors, which can be traced back to the following categories: governmental organizations, financial actors as venture capitalists and investors, universities and support organizations such as incubators and accelerators, and independent orchestrators as individual entrepreneurs (Cobben et al., 2022). Each actor has a prominent role, depending on the stage of development of the specific EE (Guéneau et al., 2023). According

¹ University of Insubria
e-mail: svalente@uninsubria.it

² University of Insubria
e-mail: alessia.pisoni@uninsubria.it

to Auerswald and Dani (2017), there are four main stages of EE development, embedded in an adaptive life cycle, as ecosystems are dynamic and constantly adapt their structures. The development of EEs begins with the exploitation phase and matures into the conservation phase. At this point, the structure of the ecosystem becomes denser and more interconnected, i.e., more rigid. If a strong shock occurs, EEs enter the release phase, which is immediately followed by a reorganization phase.

Actors within an EE have two different perspectives and two main objectives: at the micro level, each individual ecosystem actor behaves in a way that maximizes its own economic growth, while at the macro level, each ecosystem actor seeks to maximize the economic development of the entire ecosystem, be it a nation, region or local area (Acs et al., 2018; Cobben et al., 2022). Both levels influence each other, as ecosystem actors are interdependent.

Actors and factors organized within EEs enable productive entrepreneurship (Stam and Spigel, 2016; Stam, 2015). Any entrepreneurial initiative is considered as productive when its net effect on productivity is positive, i.e., if it contributes to increase the overall output of the economy or improves its ability to produce more goods and services, either directly or indirectly (Baumol, 1993). Productive entrepreneurship contributes to economic growth by fostering innovation and technological improvements, the accumulation of human and entrepreneurial capital, and the replication of successful products and process innovations (Minniti et al., 2023).

According to Stam and van de Ven (2021: 817), an “entrepreneurial ecosystem is said to produce entrepreneurship as an output and ultimately aggregate value as an outcome”. However, “there are no perfect measures of either entrepreneurship or aggregate value creation”. According to Wurth et al. (2022: 731) the EE concept can contribute to policy making, by “re-orient[ing] research on entrepreneurship and economic development toward productive entrepreneurship”. In this respect, the concept of productive entrepreneurship (Stam, 2015) is sought to capture both EE output (entrepreneurship) and outcome (aggregate value creation).

Based on the evidence that startups and scaleups are seen as sources of innovation, productivity growth and employment (Mason and Brown, 2014; Autio et al., 2018), productive entrepreneurship is often narrowed down to high-growth entrepreneurship (Autio and Ranniko, 2016; Wurth et al., 2022). Accordingly, a high-quality EE is more likely to produce high-quality entrepreneurship (Stam and van de Ven, 2021; Minniti et al., 2023).

To date, empirical studies have proxied productive entrepreneurship with either innovative new firms/startups (Leendertse et al., 2022), high-growth firms (Stam and van de Ven, 2021), gazelles (Stam, 2018) and unicorns (Leendertse et al., 2022). Nevertheless, additional empirical research needs to be done (Minniti et al., 2023).

Purpose of the paper. The study attempts to investigate the performance/quality of entrepreneurial ecosystems, by specifically proxying productive entrepreneurship with scaleups. Despite the importance of “scaling-up” in contributing to improve national competitiveness (Audretsch and Acs, 1994; Gilbert et al., 2006; Audretsch et al., 2015; Mind the Bridge, 2019; Piaskowska et al., 2021), the definition of scaleup is still controversial (Coviello, 2019) and lacks of a common understanding (Pisoni and Onetti, 2023). Coviello (2019) argues that too often scaleups have been confused with “high-growth firms” (Demir et al., 2017) and that “scaling is not just about high-growth” (Tippmann et al., 2018; Coviello, 2019). Besides the definition, scholars agree on the fact that “scalability” is to be considered as a crucial aspect (Autio, 2016). For the purpose of our research, we adopt the definition of scaleup as “a development-stage business, specific to high technology markets, that is looking at growth in terms of market access, revenues, and number of employees, adding value by identifying and realizing win-win opportunities for collaboration with established companies” (Onetti, 2014; Startup Europe Partnership (SEP), 2015; Autio, 2016). Specifically, Startup Europe suggests a tangible definition for a scaleup: a new venture that has attracted 1 Million USD or more of venture capital funding. Besides the ongoing debate on the definition of scaleups, it is acknowledged the role they play in introducing technologies into the market (Coutu, 2014). Also, for their potentials to disrupt innovation- and entrepreneurial ecosystems in which they are embedded (Marcon and Ribeiro, 2021; Autio et al., 2018), they have been increasingly attracting the interest of scholars, practitioners and policymakers (Coutu, 2014; Onetti, 2014; SEP, 2015; Autio, 2016; Autio et al., 2018).

Methodology. To contribute to the study of the performance of EEs and leveraging the privileged access to the Mind the Bridge³ proprietary database, we focus the analysis on the Italian tech scaleup scenario with the aim to understand which are scaleups’ characteristics (either at the firm and team-levels), their growth path and the relationships established to conduct their innovative activities. The Italian context is particularly noteworthy for our analysis since it is currently experiencing a new big wave of productive entrepreneurship thanks to the Italian policy maker attention (Giraud, 2019; Matricano, 2020, 2022; Cavallo et al., 2021; Biancalani et al., 2022). By issuing the “Italian Startup Act”, the Italian policy maker aimed to provide a comprehensive legislative framework to foster the creation and growth of its entrepreneurial ecosystem, by providing benefits to all those entrepreneurial activities recognized as innovative and therefore productive (Italian Startup Act, 2019).

By thoroughly investigating the Italian scaleup scenario, we aim to provide an overview of its main characteristics with descriptive statistics and statistical analysis. With this purpose, we are investigating the scaleups’ economic-financial performance (either considering their fundraising path and their growth in terms of turnover, employees and

³ Mind the Bridge is a global organization that provides innovation advisory services for corporates and startups. In 2014, Mind the Bridge has been selected by the European Commission to lead Startup Europe Partnership (SEP). Established in January 2014 at the World Economic Forum in Davos, SEP is a Startup Europe initiative dedicated to support the growth and sustainability of European startups able to compete and raise funds internationally. Based on its proprietary database, Mind the Bridge regularly produce reports with the goal of sharing insights and data about startup/scaleup ecosystems in order to give relevant parties a macro overview of the current landscape (<https://mindthebridge.com/research/>).

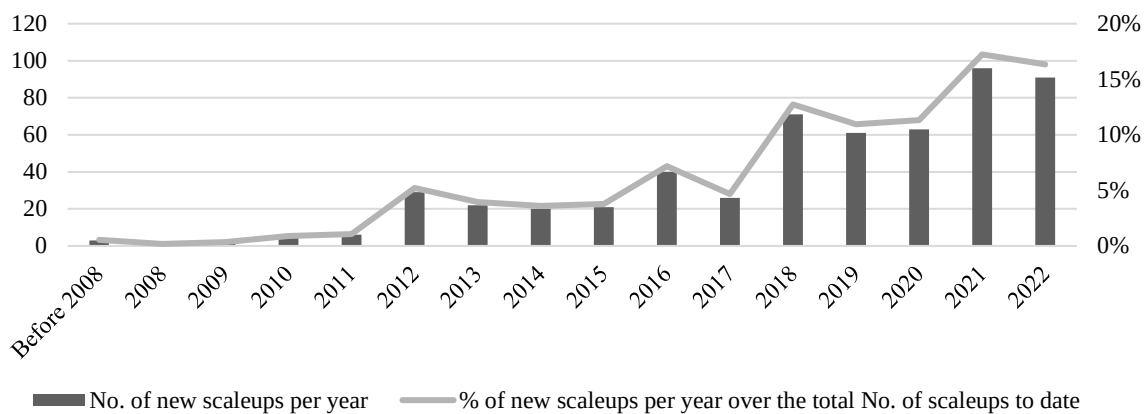
profitability margins), innovation performance (in terms of R&D, collaborations with universities/incubators etc., and the use of digital technologies), and markets served (in terms of customer segment and geographic scope). Variables related to the founding team characteristics, such as founders' background and evolution over time are also considered.

In doing so, we also aim to identify common growth patterns both at national and regional level and their evolution over time. Furthermore, the analysis of the Italian scaleup scenario represents the basis of future research extending this study at the international level, with a preliminary focus on the European scaleup scenario.

Results. At the time of writing, research is still ongoing. A preliminary analysis by focusing on the overall population of Italian tech scaleups has been conducted. As of December 2022, Italy is home to 557 tech scaleups (Mind the Bridge Tech Scaleup Italy Report, 2023).

Figure 1 shows the distribution of Italian tech scaleups by year. Prior to 2018, the Italian scaleup scenario was relatively small, with an average of approximately 20 new scaleups per year. However, from 2018 to 2020, Italy experienced significant growth, with an average of 65 new scaleups per year. In the last two years (2021-2022), the Italian scaleup scenario has continued to expand, producing nearly 100 new scaleups annually.

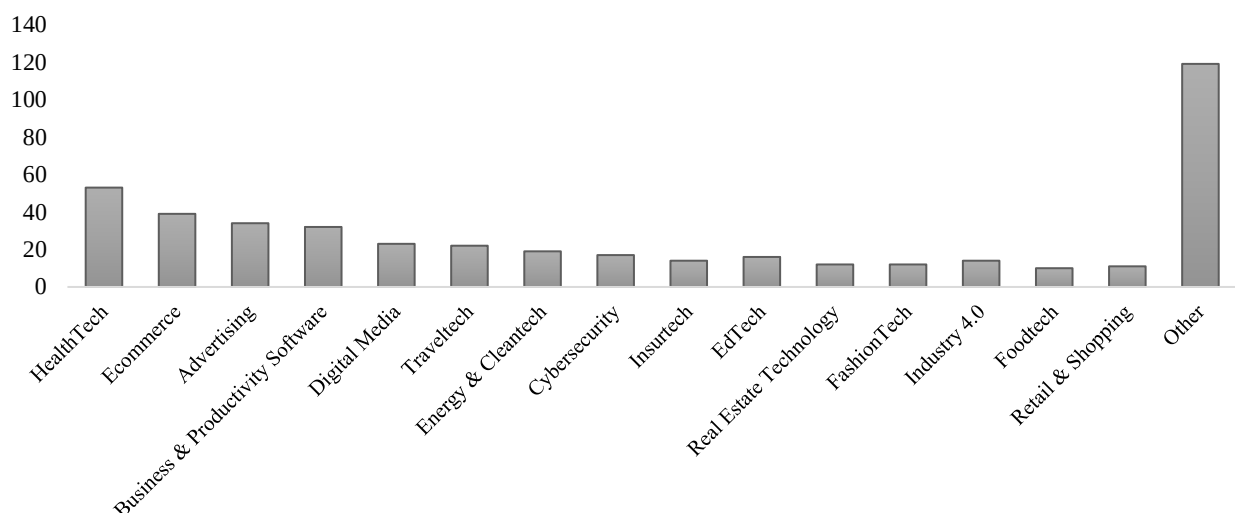
Figure 1: Distribution of Italian tech scaleups by year of establishment



Source: Personal elaboration based on MtB data (2023)

A tech scaleup is a company operating in the tech and digital industries (excluding biotech, life sciences, and pharma, as well as semiconductor industry verticals); founded in the new millennium, have had at least one funding event since 2010, and have raised more than 1 Mio USD in funding (Mind the Bridge, 2023). The concentration of Italian tech scaleups is significant in a few strategic industry verticals (Figure 2). The vast majority of scaleups focus in Healthtech, in Ecommerce, in Business & Productivity Software, and in Advertising. The 'Other' column groups industry verticals with scaleup frequencies lower than 10 (e.g., Aerospace, Agritech, Autotech, Fintech, Gaming, HR Tech, Logistics, Smart City/Home, etc.).

Figure 2: Italian tech scaleups industry specialization



Source: Personal elaboration based on MtB data (2023)

Italian tech scaleups have raised over 7 Bio USD. The vast majority of scaleups have had so far mainly 1-3 funding

event(s), raising on avg. 9 Mio USD. Sources of funding can vary considerably. They may include venture capital investments, which can come from private funds, public-supported equity funding vehicles, and corporates. Scaleups may opt also to go public - and retrieve funding from the stock market through an Initial Public Offering (IPO) - or issue cryptocurrencies in exchange for legal tender, through an Initial Coin Offering (ICO). Data show how Venture Capital (VC) is the main source of funding for Italian scaleups; while ICOs are uncommon, IPOs are increasingly considered as a viable option for scaleups to raise growth capital (i.e., 11% of total funding made available to Italian scaleups comes from the stock market). It is also worth noting how scaleups that opt for an IPO, rarely also raise VC money. Specifically, only 20% of scaleups that go public had previous VC rounds of financing (having raised on avg. 4.5 Mio USD); intuitively the vast majority of capital was raised during the IPO (on avg. 16 Mio USD, with a huge variability among). Thus, signaling how the IPO has been properly planned to secure funds to support the scaleup growth path.

It is also worth analyzing the distribution of the total funding over the lifespan of the scaleup. Intuitively, it is way different to have only one financing round when the scaleup is young compared to having only one financing round as a mature scaleup. Considering the scaleup older than 10 years (those who have experienced some history, and survived the lack of funding characterizing the Italian private equity market), we can draw some interesting considerations. The oldest among the scaleups considered had a limited number of funding events, but raised larger amount of funding, who allowed them to survive longer. The youngest (among the same considered scaleups) had more funding events, but relatively smaller in terms of amount raised, thus signaling a more fragmented fundraising path.

Results are in line with the so-called “dual companies” phenomenon (Onetti and Pisoni, 2021), i.e. scaleups that move their HQs abroad, while keeping relevant operations in their country of origin (usually R&D and product development). The main reason to relocate the HQs was to get access to capital, mainly later stage funding. Dual companies appear to be less widespread in countries where the venture capital industry is more developed, while it is a more frequent phenomenon in new emerging entrepreneurial/startup ecosystems (Onetti, 2017). Although a lot of progress has been made with regards to early-stage financing, the phenomenon is evolving in parallel with the growth of the venture capital industry in various regions and countries and needs to be monitored closely (Onetti and Pisoni, 2021)

The Italian scaleup landscape is mainly made of small companies. Firms can be classified based on their size, with the number of employees being one of the most common criteria (OECD, 2024). This allows for the identification of four size categories and corresponding company size definitions: micro, small, medium, and large enterprises⁴. As shown in Table 1, to date 85% of Italian tech scaleups are micro and small enterprises. Medium-sized enterprises account for only around 13%, while large enterprises account for just 2%.

Table 1: Italian tech scaleups by size (no. of employees)

No. of employees*	Size category	Percentage of scaleups (on the overall amount considered) per size category
0 - 4	Micro enterprise	25%
5 - 9	Micro enterprise	15%
10 - 19	Small enterprise	22%
20 - 49	Small enterprise	23%
50 - 249	Medium enterprise	13%
More than 250	Large enterprise	2%

Source: Personal elaboration based on MtB data (2023)

Note*: last year available

When evaluating the performance of Italian tech scaleups, we use the total sales. Table 2 shows that most scaleups have a turnover between 0 and 5 Mio euros, with peaks for those with a turnover between 0 and 100,000 euros. It is also worth noting a promising growth path for scaleups with a turnover higher than 2 Mio euros. Data show an interesting 11% of Italian tech scaleups with a revenue size between 10 and 50 Mio euros. However, only the 3% of overall Italian tech scaleups have a turnover exceeding 50 Mio euros.

We can thus conclude that the vast majority of Italian scaleups are still quite small (Table 1 and 2).

Table 2: Italian tech scaleups by total sales

Scaleups' turnover (thousands euros)*	Percentage of scaleups (on the overall amount considered) per category of turnover
0-100	19%
100.001-500	15%
500.001-1,000	12%
1,000.001-2,000	14%
2,000.001-5,000	17%
5,000.001-10,000	9%
10,000.001-50,000	11%
More than 50,000,001	3%

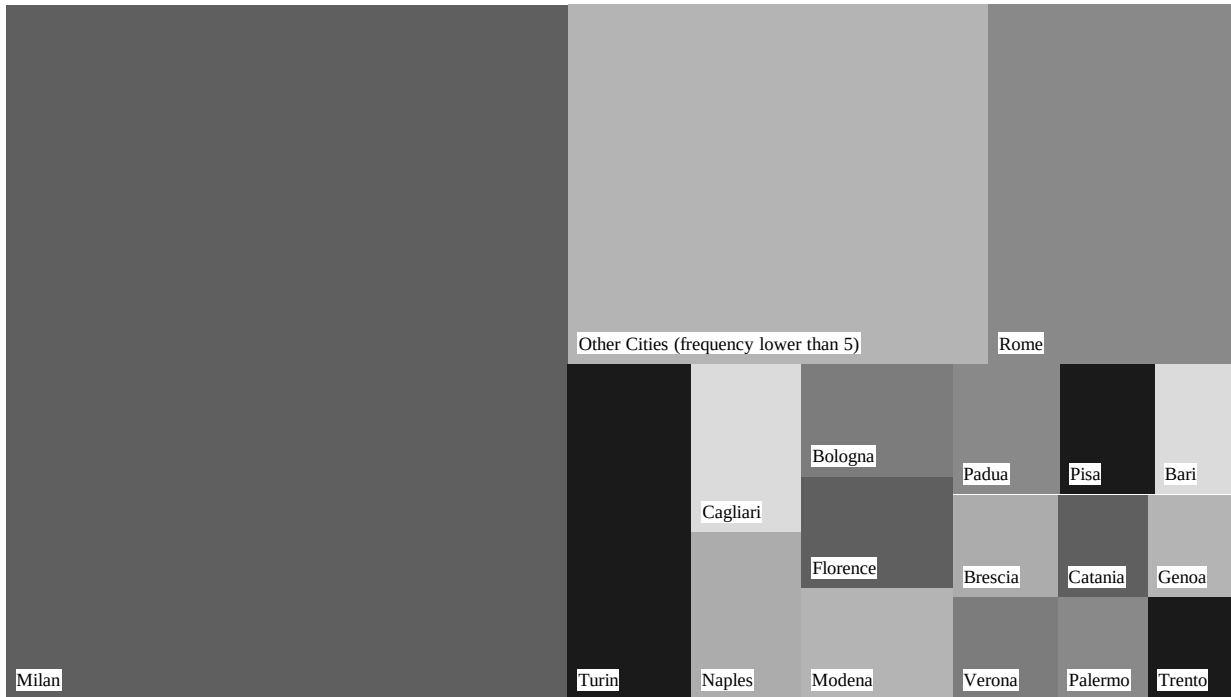
Source: Personal elaboration based on MtB data (2023)

⁴ A micro enterprise is a company with fewer than 10 employees, while a small enterprise has between 10 and 50 employees. A medium enterprise has between 50 and 250 employees, and a large enterprise employs more than 250 people.

Note*: last year available

By considering data at geographical level, it appears that scaleups tend to cluster around major financial centers. Accordingly, Figure 3 shows that the majority of Italian tech scaleups are headquartered in Milan, accounting for approximately 45% of the total population. A significant percentage of scaleups are located in various cities across the Italian peninsula. Specifically, 10% are in Rome, 5% in Turin, and approximately 2% in Cagliari, Naples, Bologna, Florence, and Modena. In Southern Italy three scaleup hubs are emerging around Naples, Cagliari and Bari. In Sicily, scaleups are concentrated around Palermo and Catania.

Figure 3: Italian tech scaleups geographic concentration



Source: Personal elaboration based on MtB data (2023)

It is also worth noting that some Italian local ecosystems are trying to leverage outside-in and inside-out initiatives to fuel their growth at scale. Examples are the innovation antennas in Silicon Valley by Sardinia Region (ASPAL) and Emilia-Romagna (ART-ER) as well as the ORA! initiative - the first territorial Venture Client scheme deployed in the broader Ravenna oil & gas, chemistry and waste management cluster.

As anticipated in the abstract, at the time of writing research is still ongoing. Variables related to the founding team characteristics, such as founders' background and evolution over time will be also considered in relation to scaleup characteristics and performance. Common growth patterns both at national and regional level and their evolution over time will also be highlighted.

Research limitations. Research is still ongoing. The focus on the Italian tech scaleup scenario might limit the generalizability of findings to other contexts or industries. Factors specific to the Italian ecosystem may not be applicable to other regions or sectors.

Managerial implications. Our study aims to improve the understanding of entrepreneurial ecosystems by using a data-driven approach that focuses on scaleups as their productive outcome. This study sets the stage for advancing our understanding of the role of scaleups in entrepreneurial ecosystems. In this regard, we focus on the underexplored topic of productive entrepreneurship in line with the research need highlighted by Wurth et al. (2022), i.e. to reorient entrepreneurship research towards productive entrepreneurship, and we stimulate the ongoing debate among practitioners and policymakers about scaleups and entrepreneurial ecosystems' policies development.

Originality of the paper. The novelty of this study lies in employing scaleups as a proxy of productive entrepreneurship in entrepreneurial ecosystems. By analyzing data from the Italian tech scaleup scenario, the study aims at providing empirical evidence on the characteristics, growth trajectories, and performance of scaleups within a specific context, addressing the call for more empirical evidence on EEs. Besides, being at an early stage of development, the study aims at providing useful insights for policymakers and practitioners.

References

- ACS Z.J., ESTRIN S., MICKIEWICZ T., SZERB L. (2018), "Entrepreneurship, institutional economics, and economic growth: an ecosystem perspective", *Small Business Economics*, vol. 51, pp. 501-514.
- AUDRETSCH D.B., ACS Z.J. (1994), "New-firm startups, technology, and macroeconomic fluctuations", *Small Business Economics*, 6, pp. 439-449.
- AUDRETSCH D.B., CUNNINGHAM J.A., KURATKO D.F., LEHMANN E.E., MENTER M. (2019), "Entrepreneurial ecosystems: economic, technological, and societal impacts", *The Journal of technology transfer*, vol. 44, pp. 313-325.
- AUDRETSCH D.B., HEGER D., VEITH T. (2015), "Infrastructure and entrepreneurship", *Small Business Economics*, vol. 44, pp. 219-230.
- AUERSWALD P.E., DANI L. (2017), "The adaptive life cycle of entrepreneurial ecosystems: the biotechnology cluster", *Small Business Economics*, vol. 49, pp. 97-117.
- AUTIO E. (2016), "Entrepreneurship support in Europe: Trends and challenges for EU policy", *Policy Reports. Brussels: European Commission*.
- AUTIO E., NAMBIAN S., THOMAS L.D., WRIGHT M. (2018), "Digital affordances, spatial affordances, and the genesis of entrepreneurial ecosystems", *Strategic Entrepreneurship Journal*, vol. 12, n. 1, pp. 72-95.
- AUTIO E., RANNIKKO H. (2016), "Retaining winners: Can policy boost high-growth entrepreneurship?", *Research policy*, vol. 45, n. 1, pp. 42-55.
- BAUMOL W.J. (1993), "Formal entrepreneurship theory in economics: Existence and bounds", *Journal of business venturing*, vol. 8, n. 3, pp. 197-210.
- BIANCALANI F., CZARNITZKI D., RICCABONI M. (2022), "The Italian start up act: A microeconomic program evaluation", *Small Business Economics*, vol. 58, n. 3, pp. 1699-1720.
- BROWN R., MASON C. (2017), "Looking inside the spiky bits: a critical review and conceptualisation of entrepreneurial ecosystems", *Small business economics*, vol. 49, pp. 11-30.
- CAVALLO A., GHEZZI A., ROSSI-LAMASTRA C. (2021), "Small-medium enterprises and innovative startups in entrepreneurial ecosystems: exploring an under-remarked relation", *International Entrepreneurship and Management Journal*, vol. 17, pp. 1843-1866.
- COBBEN D., OOMS W., ROIJAKKERS N., RADZIOW A. (2022), "Ecosystem types: A systematic review on boundaries and goals", *Journal of Business Research*, vol. 142, pp. 138-164.
- COHEN B. (2006), "Sustainable valley entrepreneurial ecosystems", *Business strategy and the Environment*, vol. 15, n. 1, pp. 1-14.
- COUTU (2014), The scale-up report on UK economic growth. The ScaleUp Institute.
- COVIELLO N. (2019), "Is a high-growth firm the same as a 'scale-up'", *Lazaridis Institute for the Management of Technology Enterprises, Wilfrid Laurier University, Waterloo, Canada*.
- DEMIR R., WENNBERG K., MCKELVIE A. (2017), "The strategic management of high-growth firms: A review and theoretical conceptualization", *Long range planning*, vol. 50, n. 4, pp. 431-456.
- FELD B. (2012), *Startup communities: Building an entrepreneurial ecosystem in your city*. Hoboken, NJ: John Wiley.
- GILBERT B.A., MCDUGALL P.P., AUDRETSCH D.B. (2006), "New venture growth: A review and extension", *Journal of management*, vol. 32, n. 6, pp. 926-950.
- GIRAUDO E., GIUDICI G., GRILLI L. (2019), "Entrepreneurship policy and the financing of young innovative companies: Evidence from the Italian Startup Act", *Research Policy*, vol. 48, n. 9, pp. 103801.
- GUENEAU G., CHABAUD D., SAUVANNET M.C.C. (2023), "Sticky ties: Quest for structural inter-organizational configurations in entrepreneurial ecosystems", *Technological Forecasting and Social Change*, vol. 190, 122416.
- ISENBERG D.J. (2010), "How to start an entrepreneurial revolution", *Harvard business review*, vol. 88, n. 6, pp. 40-50.
- LEENDERTSE J., SCHRIJVERS M., STAM E. (2022), "Measure twice, cut once: Entrepreneurial ecosystem metrics", *Research Policy*, 51, n. 9, pp. 104336.
- MARCON A., RIBEIRO J.L.D. (2021), "How do startups manage external resources in innovation ecosystems? A resource perspective of startups' lifecycle", *Technological Forecasting and Social Change*, vol. 171, 120965.
- MASON C., BROWN R. (2014), "Entrepreneurial ecosystems and growth oriented entrepreneurship", *Final report to OECD, Paris*, 30, n. 1, pp. 77-102.
- MATRICANO D. (2020), "Economic and social development generated by innovative startups: Does heterogeneity persist across Italian macro-regions?", *Economics of Innovation and New Technology*, vol. 31, n. 6, pp. 467-484.
- MATRICANO D. (2022), "The influence of gender on technology transfer processes managed in Italian Young Innovative Companies: A stochastic frontier analysis", *Technovation*, vol. 111, 102383.
- MIND THE BRIDGE (2019), Tech scaleup Europe. Available at: <https://mindthebridge.com/research/>
- MIND THE BRIDGE (2023), Tech scaleup Italy. Available at: <https://mindthebridge.com/research/>
- MINISTRY OF ECONOMIC DEVELOPMENT (2019), The Italian Startup Act. Available at: <https://www.mimit.gov.it/>
- MINNITI M., NAUDÉ W., STAM E. (2023), Is Productive Entrepreneurship Getting Scarcer? A Reflection on the Contemporary Relevance of Baumol's Typology, IZA Discussion Papers, No. 16408, Institute of Labor Economics (IZA), Bonn
- OECD (2024), Enterprises by business size (indicator), "doi: 10.1787/31d5eeaf-en
- ONETTI A. (2014), Scaleups. when does a startup turn into scaleup? Available at: <https://startupeuropepartnership.eu/>
- ONETTI A. (2017), *Study on Transatlantic Dynamics of New High Growth Innovative Firms*. DG for Research and Innovation - European Commission.
- ONETTI A., PISONI A. (2021), "Fundraising strategies for early internationalizing startups. The dual model approach", in Etemad H., Evers N., Kock S. (Eds), 2021, *Entrepreneurial Internationalization in Increasingly Digitized and Networked World Economy*, Edward Elgar Publishing, UK (Chapter 5, pp. 83-102) (ISBN 9781788976800 | E-ISBN 9781788976817)
- PIASKOWSKA D., TIPPIMANN E., MONAGHAN S. (2021), "Scale-up modes: Profiling activity configurations in scaling strategies", *Long Range Planning*, vol. 54, n. 6, 102101.
- PISONI A., ONETTI A. (2023), "Startups and the hurdles of scaling-up", *Processes in the Era of Digital Transformation*, 145.
- SCHUMPETER J.A., NICHOL A.J. (1934), "Robinson's economics of imperfect competition", *Journal of political economy*, vol. 42, n. 2, pp. 249-259.

- SEP (STARTUP EUROPE PARTNERSHIP) (2015), SEP Monitor “From Unicorns to Reality, A Five- Country Comparison of European ICT Scaleups”. Available at: <https://startupeuropepartnership.eu/>
- SHANE S., VENKATARAMAN S. (2000), “The promise of entrepreneurship as a field of research”, *Academy of management review*, 25, n. 1, pp. 217-226.
- SPIGEL B. (2017), “The relational organization of entrepreneurial ecosystems”, *Entrepreneurship theory and practice*, vol. 41, n. 1, pp. 49-72.
- SPIGEL B., HARRISON R. (2018), “Toward a process theory of entrepreneurial ecosystems”, *Strategic Entrepreneurship Journal*, 12, n. 1, pp. 151-168.
- STAM E. (2015), “Entrepreneurial ecosystems and regional policy: a sympathetic critique”, *European planning studies*, vol. 23, n. 9, pp. 1759-1769.
- STAM E. (2018), “Measuring entrepreneurial ecosystems”, *Entrepreneurial ecosystems: Place-based transformations and transitions*, pp. 173-197.
- STAM E., SPIGEL B. (2016), *Entrepreneurial ecosystems* (Vol. 16, No. 13, pp. 1-15), “USE Discussion paper series.
- STAM E., VAN DE VEN A. (2021), “Entrepreneurial ecosystem elements”, *Small business economics*, vol. 56, pp. 809-832.
- THEODORAKI C., DANA L.P., CAPUTO A. (2022), “Building sustainable entrepreneurial ecosystems: A holistic approach”, *Journal of Business Research*, vol. 140, pp. 346-360.
- TIPPMANN E., REUBER R.A., MONAGHAN S. (2018), “Global scaling: An inherent paradox and its navigation”, *Academy of Management Global Proceedings*, (2018), 187.
- WURTH B., STAM E., SPIGEL B. (2022), “Toward an entrepreneurial ecosystem research program”, *Entrepreneurship Theory and Practice*, vol. 46, n. 3, pp. 729-778.

Innovazione e imprenditorialità femminile nelle PMI: un'analisi fuzzy dei driver della performance

ANTENOZIO LUDOVICA¹ DI BERARDINO DANIELA²

Abstract

Il presente studio si propone di esaminare quali combinazioni di attività e risorse promotrici dell'innovazione consentono di conseguire alte performance finanziarie nelle PMI innovative, discriminando tra PMI a conduzione femminile ed altre. Nel crescente dibattito sulla trasformazione delle PMI, l'innovazione riveste un ruolo sempre più centrale nello sviluppo di tali imprese le quali, contribuiscono in modo significativo alla crescita economica e alla competitività nazionale. Le attività innovative interne e le risorse riconducibili al capitale umano, ai brevetti e alla R&S vengono considerate come driver di innovazione capaci di influenzare le performance aziendali, ma non sempre garantiscono un impatto positivo nel lungo termine né una relazione lineare. Utilizzando una metodologia di analisi qualitativa comparativa del tipo fuzzy-set (fs-QCA), innovativa e adeguata allo studio di fenomeni caratterizzati da incertezza, i risultati preliminari dello studio suggeriscono che diverse combinazioni di investimenti in R&S, capitale umano qualificato e proprietà intellettuale, possono determinare una performance positiva per le PMI innovative, mentre l'imprenditorialità femminile non assume un ruolo preponderante e discriminante. Questo studio contribuisce alla comprensione della relazione complessa tra innovazione, imprenditorialità femminile e performance nelle PMI e offre importanti implicazioni manageriali e teoriche.

Key words: innovazione, PMI innovative, fs-QCA, genere, performance, R&S, imprenditorialità femminile, brevetti, capitale umano

Inquadramento della ricerca. L'innovazione sta assumendo oggi un forte interesse come fattore guida della crescita delle imprese (Arcuri et al., 2023; Audretsch, Coad, et al., 2014), e svolge un ruolo cruciale nel ridisegnare il vantaggio competitivo delle piccole e medie imprese (PMI) (Arcuri et al., 2023; Montani et al., 2023), che, da una lato, si caratterizzano per la scarsità di mezzi (Costa et al., 2023; Vagnani & Proietti, 2023) e risorse (Antenzio & Di Berardino, 2023; Costa et al., 2023), dall'altro contribuiscono alla crescita economica e alla competitività nazionale (Albis Salas et al., 2023; Audretsch, 2002; Audretsch et al., 2023; Vagnani & Proietti, 2023) rappresentando il 99% delle imprese europee nella maggior parte dei Paesi (OECD, 2021). L'innovazione diventa per le PMI un requisito imprenditoriale necessario per il conseguimento di un solido vantaggio competitivo, determinando solitamente la creazione di una proposta di valore unica e distintiva (Schumpeter, 1934), che a sua volta consente alla PMI di agire come motore per la competitività nazionale (Albis Salas et al., 2023; Antenzio et al., 2023; Audretsch, 2002). Pertanto, le PMI si trovano spesso a reinventare le proprie attività e a ridefinire le proprie risorse (Albis Salas et al., 2023; Antenzio et al., 2023), per alimentare nel continuo l'innovazione e rispondere adeguatamente ai cambiamenti tecnologici (Montani et al., 2023).

Le attività interne di promozione dell'innovazione risultano essere dei driver che consentono di ottenere risultati ad alta performance anche nelle PMI (Arcuri et al., 2023; Matricano, 2023). Adottando la lente teorica della resource-based view, si rileva che gli investimenti in ricerca e sviluppo (R&S) costituiscono risorse interne strategicamente rilevanti, che agiscono come driver dell'innovazione (Albis Salas et al., 2023; Arcuri et al., 2023) e che favoriscono l'ottimizzazione dei processi, determinando un incremento della produttività delle PMI (Albis Salas et al., 2023). Tuttavia, atteso che tali risultati positivi non sempre si rivelano o si manifestano nel lungo termine, gli investimenti in R&S possono drenare lungamente le risorse finanziarie nelle PMI, agendo quindi negativamente sulla complessiva efficienza produttiva e sulla performance finanziaria e reddituale (Lee et al., 2019). Pertanto, gli investimenti in R&S possono non essere sufficienti per promuovere elevate performance, né la loro relazione con la sopravvivenza aziendale si qualifica sempre come lineare (Ugur et al., 2016). Per questi motivi è opportuno considerare altri indicatori di attività generatrici dell'innovazione e promotrici della performance, come la presenza di risorse uniche ed inimitabili tutelate da diritti di proprietà intellettuale (Audretsch, Segarra, et al., 2014). In letteratura tale variabile è utilizzata come parametro del grado di originalità e unicità della proposta di valore (Athreye et al., 2021) e la sua "esclusività" tutelata legalmente la rende una risorsa rilevante per il duraturo sviluppo della PMI (Matricano, 2023). Tuttavia, i brevetti di per sé, pur

¹ Università "G. d'Annunzio" Chieti - Pescara
e-mail: ludovica.antenzio@unich.it

² Università "G. d'Annunzio" Chieti - Pescara
e-mail: daniela.diberardino@unich.it

costituendo una condizione necessaria per qualificare una PMI come innovativa, necessita della combinazione di altri processi e risorse per condurre la PMI ad elevate performance e, sovente, la redditività generata da tale investimento tarda a manifestarsi (Tagliatala & Barontini, 2024). Alcuni studi evidenziano come misurazioni quantitative basate esclusivamente sul numero di brevetti non sono sufficienti per valutare adeguatamente l'impatto sulla performance delle PMI (Burrone, 2005; Macdonald, 2004), essendo necessaria una variabile qualitativa che descriva il tipo di innovazione tutelata (Agostini et al., 2015). Inoltre, appare incerta la direzione della relazione tra brevetti e performance finanziaria della PMI: taluni autori rilevano la presenza di relazioni positive (Agostini et al., 2015; Maresch et al., 2016), altri rilevazione relazioni negative (Power & Reid, 2021), taluni nessuna associazione (Griliches et al., 1991).

In letteratura anche il capitale umano emerge come un fattore chiave per il vantaggio competitivo delle PMI (Kiefer et al., 2022) e per la redditività aziendale (Xu & Li, 2019), impattando positivamente sugli utili e sull'efficienza operativa delle imprese (Kiefer et al., 2022; Xu & Li, 2019). Tuttavia, risultati contrastanti nell'interazione tra innovazione e performance nelle PMI sono stati riscontrati in alcuni studi. Sebbene studi manageriali riconoscano all'innovazione una valenza propulsiva, per elevare la capacità competitiva (Audretsch, Coad, et al., 2014; Porter, 1980), sviluppare capacità dinamiche (Eisenhardt & Martin, 2000) e, favorire la sopravvivenza delle imprese (Audretsch et al., 2020), specialmente nelle PMI (Arcuri et al., 2023), si rileva, d'altro canto, che il processo di innovazione può portare ad elevati tassi di insuccesso, compromettendo la performance e aumentando il profilo di rischio dell'impresa (Li & Atuahene-Gima, 2001; Scherer & Harhoff, 2000). Lo studio delle relazioni tra attività di innovazione e performance rivela una rinnovata attenzione alla diversità di genere nel top management team aziendale. Diversi studi dimostrano che tale requisito della governance contribuisce all'innovazione (Lee & Chung, 2022; Talke et al., 2010; Xie et al., 2020), alla performance dell'impresa (Talke et al., 2010; Yang et al., 2019) e ad un orientamento strategico multistakeholders (Talke et al., 2010). Tuttavia, studi recenti dimostrano che le imprese con un maggior numero di donne nel board direzionale generano meno innovazioni d'impatto e sono capaci di generare una crescita cumulativa e sistemica nel mondo produttivo (Lee & Chung, 2022), atteso che una prevalenza della componente femminile nel board, si correla ad una minore propensione al rischio rispetto alle imprese con un maggior numero di dirigenti uomini (Yang et al., 2019).

Nonostante l'innovazione ed il genere costituiscano un filone di crescente interesse, mancano ancora studi che mirano a comprendere quali fattori, inclusa la componente di genere, e quali risorse nella PMI rappresentino condizioni necessarie e sufficienti per promuovere un'adeguata performance economico-finanziaria.

Obiettivo del paper. Questo studio mira a investigare la relazione tra gli input di innovazione e le performance reddituali nelle PMI innovative, osservando quali combinazioni di investimenti in R&S, capitale umano qualificato e proprietà intellettuale sono in grado di generare elevata redditività delle vendite. Al fine di comprendere anche la valenza discriminante della variabile di genere, l'analisi esplora tali combinazioni distinguendo le PMI innovative a conduzione femminile dalle altre PMI innovative. Lo studio si pone l'obiettivo di offrire contributi empirici al dibattito accademico sulle determinanti dello sviluppo delle piccole e medie imprese innovative, con particolare riferimento all'imprenditorialità femminile. Inoltre, esplorando l'interazione tra i driver dell'innovazione, lo studio mira a indirizzare verso l'adeguata implementazione delle attività e delle risorse ritenute necessarie e sufficienti al raggiungimento di un determinato outcome.

I risultati forniranno preziose informazioni sulla promozione dell'innovazione nel contesto delle PMI innovative femminili mirando a far avanzare la discussione teorica su (i) gli input di innovazione (investimenti in R&S, capitale umano qualificato, proprietà intellettuale), (ii) l'avanzamento dello sviluppo delle PMI innovative, e (iii) l'imprenditorialità femminile, offrendo anche implicazioni manageriali.

Metodologia. Questo lavoro utilizza il metodo fuzzy-set qualitative comparative analysis (fs-QCA) per investigare il fenomeno in esame. Questa tecnica differisce dai metodi statistici convenzionali (Pappas & Woodside, 2021; Ragin, 2008; Woodside, 2013) poiché esplora come vari fattori causali contribuiscono a un risultato specifico, fondato sull'idea che quest'ultimo dipenda dalla combinazione di caratteristiche causali, piuttosto che sui valori isolati di tali caratteristiche (Ragin, 2008). Questo processo consente di avere un insieme effettivamente conciso di driver, quali fattori di input di innovazione tecnologica che influenzano in modo significativo il risultato finale (outcome).

In accordo con Ragin (2008), sono state calibrate le condizioni o input (investimenti in R&S, capitale umano e proprietà intellettuale) e la variabile di risultato o outcome (performance misurata dal ROS). In secondo luogo, è stata condotta l'analisi delle condizioni necessarie distinguendo il cluster delle PMI femminili dalle altre PMI e, infine, sono state sviluppate la tabella di verità e l'analisi delle condizioni sufficienti seguendo le linee guida proposte da Schneider and Wagemann (2012). Nel presente studio, i termini "presenza" o "assenza" di condizioni sono stati adottati per semplicità come equivalenti di appartenenza e non appartenenza a condizioni o insiemi di risultati (Torres & Augusto, 2020; Zoppelletto & Bullini, 2022) sia per le PMI femminili che per le PMI non femminili. Pertanto, l'analisi delle condizioni necessarie verifica se la presenza o l'assenza di una condizione è necessaria per la presenza (ROS) dell'esito. Per l'analisi delle condizioni sufficienti viene presa in considerazione la soluzione intermedia. Infine sono state effettuate analisi di robustezza modificando le soglie di calibrazione (Skaaning, 2011) e impiegando l'analisi delle condizioni sufficienti e la tabella di verità per l'assenza dei risultati (Zoppelletto & Bullini, 2022).

In particolare, il campione utilizzato si riferisce alle 2.695 PMI innovative italiane con un time-frame di 10 anni (2013-2022) che permette una maggiore comprensione dell'andamento delle performance negli anni. L'imprenditorialità femminile viene evidenziata nel campione considerando la composizione in prevalenza femminile nel capitale sociale e nel consiglio d'amministrazione se superiore al 50% del totale, utilizzando i dati forniti da ciascuna PMI innovativa al momento dell'estrazione (Arcuri et al., 2023).

La scelta del contesto italiano deriva dalla forte caratterizzazione del tessuto produttivo nazionale ancorato al

modello della PMI (Antenozio & Di Berardino, 2023; Matricano, 2023; Vrontis et al., 2020), che nel territorio nazionale trova un solido riconoscimento normativo proprio grazie alla presenza di risorse riconducibili agli investimenti di R&S, proprietà intellettuale e capitale umano qualificato (Matricano, 2023). Inoltre, nel più ampio dibattito sull'imprenditoria innovativa e femminile (Antenozio et al., 2023; Arcuri et al., 2023; D'Angelo, 2012; Vagnani & Proietti, 2023), l'Italia presenta un elevato livello di impegno nello sviluppo dell'innovazione grazie anche alle differenziate politiche di investimento locale che impattano diversamente sulla crescita delle PMI e del capitale umano (Antenozio et al., 2023; Matricano, 2023).

Le variabili presenti all'interno del modello derivano da due diverse fonti: (i) sezione speciale del "Registro delle Imprese" contenente l'elenco di tutte le PMI Innovative operanti in Italia al momento della consultazione secondo la letteratura (Antenozio & Di Berardino, 2023; Arcuri et al., 2023; Cavallo et al., 2020; Matricano, 2023) per il capitale umano qualificato e la proprietà intellettuale; (ii) database AIDA (database del Bureau van Dijk), comunemente impiegato per ricercare, analizzare ed elaborare informazioni economiche, finanziarie e commerciali, tutte le imprese italiane, comprese le PMI innovative (Antenozio & Di Berardino, 2023; Arcuri et al., 2023; Muhammad et al., 2021) per gli investimenti in R&S e ROS.

In particolare, il modello prevede tre variabili di input "Investimenti in R&S", "Capitale umano qualificato", "Proprietà intellettuale". Nello specifico la variabile "Investimenti in R&S" è stata costruita come rapporto tra il totale delle immobilizzazioni immateriali e gli assets totali dell'impresa (Arcuri et al., 2023). Questa variabile è strettamente legata al livello di innovatività di un'impresa (Hervas-Oliver et al., 2021) e ampiamente utilizzata in letteratura (Arcuri et al., 2023; Matricano, 2023). La variabile "Capitale umano qualificato" è misurata attraverso una dummy (0-1) ed è associata positivamente agli utili, redditività ed efficienza operativa dell'impresa (Xu & Li, 2019). La tipologia di interazione tra capitale umano e tecnologia rende le PMI competitive e attraenti, riuscendo a superare le barriere dovute alle risorse limitate e ai fondi scarsi. La "proprietà intellettuale" invece, misurata anch'essa da una dummy (0-1) è riferita all'unicità dell'azienda che porta un vantaggio competitivo, in accordo con la letteratura (Hervas-Oliver et al., 2021; Liu et al., 2023). Infine, l'outcome preso in considerazione è il ROS, indice di performance aziendale espresso in punti percentuali. Questo è indicatore della redditività estraibile dalle vendite ed è sintomo della forza competitiva della proposta di valore emergente dall'innovazione, legalmente tutelata nei mercati di sbocco, nonché rappresenta una proxy delle risorse autogenerate dalle vendite come autofinanziamento (Arcuri et al., 2023) e profitto (Caputo et al., 2022), utili per il futuro sviluppo della PMI.

Risultati. Risultati preliminari evidenziano un'interessante relazione tra le attività di innovazione e la performance reddituale, confutando le premesse teoriche del presente studio. Per gli investimenti in R&S, capitale umano e proprietà intellettuale quali input di innovazione, i due cluster non mostrano differenze specifiche in termini di condizioni necessarie e sufficienti andando a sottolineare come il genere della leadership non sembra influenzare la relazione tra queste condizioni e la performance finanziaria misurata dal ROS. Inoltre, da un lato, nessuna delle attività di innovazione è in grado di spiegare da sola un alto livello di performance e, al contrario, gli investimenti in R&S sono una condizione che da sola non produce efficienza; dall'altro, esistono due percorsi per ciascun cluster che combinano le differenti attività innovative per il raggiungimento di una performance elevata. Il primo percorso accosta gli investimenti in R&S con il capitale umano mentre, nel secondo percorso il capitale umano si combina con la proprietà intellettuale. In questo modo sia le PMI innovative femminili che quelle non femminili possono raggiungere elevate performance finanziarie. Questi risultati sono in linea con la letteratura attuale, confermando l'importanza della concatenazione di attività innovative per il raggiungimento di un risultato ottimale.

Limiti della ricerca. Questo studio presenta alcune limitazioni legate alla natura quantitativa della ricerca. Innanzitutto, lo studio si concentra su un solo paese, una limitazione comune alla maggior parte degli studi quantitativi, che risentono ampiamente dei fattori presenti nei diversi contesti istituzionali, i quali potrebbero limitarne la generalizzabilità delle conclusioni. Tuttavia, l'Italia è considerata un contesto adeguato a indagare la relazione tra PMI e sviluppo innovativo grazie alla considerevole variazione e distribuzione del campione su eterogenei clusters geografici aventi tassi di sviluppo socio-economico differenziati. In secondo luogo, la comprensione attuale degli input di innovazione risulta ancora frammentata, per cui utilizziamo solo tre variabili di innovazione quali dati quantitativi, trascurando l'analisi della dimensione qualitativa di tali risorse, in termini di contenuti del brevetto, tipologia di capitale umano, ambito degli investimenti in R&S, elementi che potrebbero indirizzare futuri sviluppi della ricerca. In terzo luogo, ci sono diversi modi per calibrare le variabili nel modello della fs-QCA analisi che potrebbero portare a risultati diversi. Studi futuri potrebbero esplorare differenti dimensioni della governance, quali le forme di imprenditorialità giovanile e straniera, nonché ulteriori elementi di innovazione generando nuovi risultati e arricchendo la letteratura accademica sull'argomento.

Implicazioni manageriali. Le due principali implicazioni teoriche di questo studio si riferiscono, da un lato, all'evoluzione della misura tradizionale dell'input di innovazione come gli investimenti in R&S, in quanto, oggi, questa variabile è da considerarsi non sufficientemente esplicativa dell'innovazione, soprattutto nelle PMI. Di conseguenza, abbiamo proposto altre variabili utili a valutare tale fenomeno, che potranno essere utilizzate in futuri studi empirici per valutare l'innovazione nelle PMI innovative, contribuendo alla RBT e alla comprensione delle risorse strategiche interne per l'innovazione. D'altro canto, proponiamo di studiare l'innovazione nelle PMI con un approccio metodologico innovativo come la fs-QCA. Inoltre, questo studio mira a offrire anche diverse implicazioni manageriali relative all'innovazione e alla performance delle PMI. In primo luogo, suggerisce che gli investimenti delle PMI in R&S non sono

più sufficienti da soli a migliorare la capacità delle PMI femminili e non femminili di generare un livello importante di performance. In secondo luogo, da un punto di vista strategico, le PMI devono indirizzare le proprie scelte di investimento verso un combinato sviluppo delle attività di R&S, formazione e valorizzazione del capitale umano e tutela della proprietà intellettuale.

Originalità del paper. L'interesse verso la trasformazione tecnologica e l'avanzamento digitale e innovativo del mondo attuale ha spinto molte imprese, di piccole e grandi dimensioni a perseguire queste iniziative. Tuttavia, gran parte della ricerca si è concentrata principalmente sulle grandi imprese e, studi sulla performance delle piccole e medie innovative, trascurano la visione sistemica della interazione tra input diversi dell'innovazione. D'altro canto, studi specifici sulle piccole e medie imprese innovative a conduzione femminile necessitano di maggiori approfondimenti proprio per la dimensione dei driver di innovazione. In questo articolo, proponiamo di colmare queste lacune nella letteratura andando ad indagare la relazione tra le attività innovative perseguite e performance finanziarie, concentrandoci sul ruolo dell'imprenditorialità femminile all'interno delle PMI innovative. Dato il background teorico, lo studio si propone di indagare la presente relazione con una metodologia di crescente attenzione (fs-QCA), che differisce dai modelli statistici convenzionali e che cerca di esplorare come diversi fattori contribuiscano ad un risultato atteso e specifico, fondando la sua struttura sull'idea che uno specifico risultato dipenda dalla combinazione di caratteristiche causali piuttosto che sui singoli valori. In particolare, questo studio è tra i primi che indaga il modo in cui diverse combinazioni di attività innovative portino ad elevate performance finanziarie nelle PMI innovative con una ulteriore focus sull'imprenditorialità femminile.

Bibliografia

- AGOSTINI L., CAVIGGIOLI F., FILIPPINI R., NOSELLA A. (2015), "Does patenting influence SME sales performance? A quantity and quality analysis of patents in Northern Italy", *European Journal of Innovation Management*, vol. 18, n. 2, pp. 238-257.
- ALBIS SALAS N., MORA HOLGUIN H., LUCIO-ARIAS D., SÁNCHEZ E.C., VILLARREAL N. (2023), "Innovation and productivity in small and medium-sized enterprises: evidence from the Colombian manufacturing sector", *Journal of Small Business and Enterprise Development*, vol. 30, n. 5, pp. 1011-1034.
- ANTENOZIO L., DI BERARDINO D. (2023), "Exploring the interplay between digital implementation and SMEs' performance: an empirical study", *Sinergie-SIMA 2023 Management Conference*. <https://doi.org/10.7433/srecp.ea.2023.01>
- ANTENOZIO L., DI BERARDINO D., MIGLIORI S., CONSORTI A. (2023), "Can smart cities strategies attract high-tech SMEs? The geography of innovative entrepreneurship in Italy", *XL Convegno Nazionale AIDEA 2023 L'azienalismo Crea Valore!*
- ARCURI M.C., GANDOLFI G., RUSSO I. (2023), "Exploring the impact of innovation intensity on the growth of female-led entrepreneurial firms" *Journal of Small Business and Enterprise Development*, vol. 30, n. 5, pp. 947-966.
- ATHREYE S.S., FASSIO C., ROPER S. (2021), "Small firms and patenting revisited", *Small Business Economics*, vol. 57, n. 1, pp. 513-530.
- AUDRETSCH D.B. (2002), "The dynamic role of small firms: Evidence from the U.S", *Small Business Economics*, vol. 18, n. 1-3, pp. 13-40.
- AUDRETSCH D.B., BELITSKI M., CAIAZZA R., CHOWDHURY F., MENTER M. (2023), "Entrepreneurial growth, value creation and new technologies", *Journal of Technology Transfer*, vol. 48, n. 5, pp. 1535-1551.
- AUDRETSCH D.B., COAD A., SEGARRA A. (2014), "Firm growth and innovation", *Small Business Economics*, vol. 43, n. 4, pp. 743-749.
- AUDRETSCH D.B., COLOMBELLI A., GRILLI L., MINOLA T., RASMUSSEN E. (2020), "Innovative start-ups and policy initiatives", *Research Policy*, vol. 49, n. 10, 104027.
- AUDRETSCH D.B., SEGARRA A., TERUEL M. (2014), "Why don't all young firms invest in R&D?", *Small Business Economics*, vol. 43, n. 4, pp. 751-766.
- BURRONE E. (2005), "Intellectual Property Rights and Innovation in SMEs in OECD Countries", *Journal of Intellectual Property Rights*, vol. 10(January), 34-43.
- CAPUTO F., FIANO F., RISO T., ROMANO M., MAALAOUI A. (2022), "Digital platforms and international performance of Italian SMEs: an exploitation-based overview", *International Marketing Review*, vol. 39, n. 3.
- CAVALLO A., GHEZZI A., COLOMBELLI A., CASALI G.L. (2020), "Agglomeration dynamics of innovative start-ups in Italy beyond the industrial district era", *International Entrepreneurship and Management Journal*, vol. 16, n. 1, pp. 239-262.
- COSTA A., CRUPI A., DE MARCO C.E., DI MININ A. (2023), "SMEs and open innovation: Challenges and costs of engagement", *Technological Forecasting and Social Change*, vol. 194. <https://doi.org/10.1016/j.techfore.2023.122731>
- D'ANGELO A. (2012), "Innovation and export performance: A study of Italian high-tech SMEs", *Journal of Management and Governance*, vol. 16, n. 3, pp. 393-423.
- EISENHARDT K.M., MARTIN J. A. (2000), "Dynamic capabilities: What are they?", *Strategic Management Journal*, vol. 21, n. 10-11, pp. 1105-1121.
- GRILICHES Z., HALL B.H., PAKES A. (1991), "R&D, patents, and market value revisited: is there a second (technological opportunity) factor?", *Economics of Innovation and New Technology*, vol. 1, n. 3, pp. 183-201.
- HERVAS-OLIVER J.L., SEMPERE-RIPOLL F., BORONAT-MOLL C. (2021), "Technological innovation typologies and open innovation in SMEs: Beyond internal and external sources of knowledge", *Technological Forecasting and Social Change*, vol. 162, (September 2020), 120338.
- KIEFER K., HEILEMAN M., PETT T.L. (2022), "Does gender still matter? An examination of small business performance", *Small Business Economics*, vol. 58, n. 1, pp. 141-167.
- LEE J., CHUNG J. (2022), "Women in top management teams and their impact on innovation", *Technological Forecasting and Social Change*, vol. 183, (June), 121883.

- LEE J., KWON H.B., PATI N. (2019), “Exploring the relative impact of R&D and operational efficiency on performance: A sequential regression-neural network approach”, *Expert Systems with Applications*, vol. 137, pp. 420-431.
- LI H., ATUAHENE-GIMA K. (2001), “Product Innovation Strategy and the Performance of New Technology Ventures in China”, *Academy of Management Journal*, vol. 44, n. 6, pp. 1123-1134.
- LIU Y., DONG J., MEI L., SHEN R. (2023), “Digital innovation and performance of manufacturing firms: An affordance perspective”, *Technovation*, vol. 119, 102458.
- MACDONALD S. (2004), “When means become ends: Considering the impact of patent strategy on innovation”, *Information Economics and Policy*, vol. 16, n. 1, pp. 135-158.
- MARESC D., FINK M., HARMS R. (2016), “When patents matter: The impact of competition and patent age on the performance contribution of intellectual property rights protection”, *Technovation*, 57-58, pp. 14-20.
- MATRICANO D. (2023), “Designing policy based on entrepreneurial venture type: the effects of innovation, hiring practices and patent ownership on enterprise development”, *Journal of Small Business and Enterprise Development*, vol. 30, n. 7, pp. 1377-1395.
- MONTANI F., STAGLIANÒ R., SOMMOVIGO V., SETTI I., GIORGI G. (2023), “Managers’ compassionate goals, innovation, and firm performance: an examination of mediating processes, and boundary conditions in small- and medium-sized enterprises”, *R and D Management*, vol. 53, n. 1, pp. 97-114.
- MUHAMMAD H., MIGLIORI S., MOHSNI S. (2021), “Capital structure and firm performance: the role of corporate governance”, *International Journal of Business Governance and Ethics*, vol. 15, n. 4, pp. 436-458.
- OECD. (2021), “The Digital Transformation of SMEs”, *OECD Publishing, Paris (ed.); OECD Studi. OECD*. <https://doi.org/10.1787/bdb9256a-en>
- PAPPAS I.O., WOODSIDE A.G. (2021), “Fuzzy-set Qualitative Comparative Analysis (fsQCA): Guidelines for research practice in Information Systems and marketing”, *International Journal of Information Management*, vol. 58, (January), 102310.
- PORTER M. E. (1980), *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. Free Press, New York, NY.
- POWER B., REID G.C. (2021), “The impact of intellectual property types on the performance of business start-ups in the United States”, *International Small Business Journal: Researching Entrepreneurship*, vol. 39, n. 4, pp. 372-400.
- RAGIN C.C. (2008), *Redesigning Social Inquiry: Fuzzy sets and beyond*. In University of Chicago press.
- SCHERER F.M., HARHOFF D. (2000), “Technology policy for a world of skew-distributed outcomes”, *Research Policy*, vol. 29, n. 4-5, pp. 559-566.
- SCHNEIDER C.Q., WAGEMANN C. (2012), *Set-Theoretic Methods for the Social Sciences: A Guide to Qualitative Comparative Analysis Strategies for Social Inquiry*. Cambridge University Press.
- SCHUMPETER J.A. (1934), *The Theory of Economic Development*. Harvard University Press, Cambridge, MA.
- SKAANING S.E. (2011), “Assessing the robustness of crisp-set and fuzzy-set QCA results”, *Sociological Methods and Research*, vol. 40, n. 2, pp. 391-408.
- TAGLIALATELA J., BARONTINI R. (2024), “SMEs and patents: Is it worth it? A longitudinal analysis of the patent-performance relationship”, *Journal of Economics and Business*, vol. 128, (December 2022), 106147.
- TALKE K., SALOMO S., ROST K. (2010), “How top management team diversity affects innovativeness and performance via the strategic choice to focus on innovation fields”, *Research Policy*, vol. 39, n. 7, pp. 907-918.
- TORRES P., AUGUSTO M. (2020), “Digitalisation, social entrepreneurship and national well-being”, *Technological Forecasting and Social Change*, vol. 161(June), 120279.
- UGUR M., TRUSHIN E., SOLOMON E., GUIDI F. (2016), “R&D and productivity in OECD firms and industries: A hierarchical meta-regression analysis”, *Research Policy*, vol. 45(10), pp. 2069-2086.
- VAGNANI G., PROIETTI L. (2023), “Founder-Involvement in R&D and SMEs performance: an expanded mediated-moderated framework”, *Sinergie Italian Journal of Management*, vol. 41, n. 2, pp. 223-246.
- VRONTIS D., BASILE G., ANDREANO M.S., MAZZITELLI A., PAPASOLOMOU I. (2020), “The profile of innovation driven Italian SMEs and the relationship between the firms’ networking abilities and dynamic capabilities”, *Journal of Business Research*, vol. 114, (April), pp. 313-324.
- WOODSIDE A. G. (2013), “Moving beyond multiple regression analysis to algorithms: Calling for adoption of a paradigm shift from symmetric to asymmetric thinking in data analysis and crafting theory”, *Journal of Business Research*, vol. 66, n. 4, pp. 463-472.
- XIE L., ZHOU J., ZONG Q., LU Q. (2020), “Gender diversity in R&D teams and innovation efficiency: Role of the innovation context”, *Research Policy*, vol. 49, n. 1.
- XU J., LI J. (2019), “The impact of intellectual capital on SMEs’ performance in China: Empirical evidence from non-high-tech vs. high-tech SMEs”, *Journal of Intellectual Capital*, vol. 20, n. 4, pp. 488-509.
- YANG P., RIEPE J., MOSER K., PULL K., TERJESEN S. (2019), “Women directors, firm performance, and firm risk: A causal perspective”, *Leadership Quarterly*, vol. 30, n. 5, 101297.
- ZOPPELLETTO A., ORLANDI L.B. (2022), “Cultural and digital collaboration infrastructures as sustainability enhancing factors : A configurational approach”, *Technological Forecasting & Social Change*, vol. 179, (March), 121645.

Track 2
Innovation & Technology Management

Beyond Words: Leveraging Language for Strategic Decision-Making in Innovation

FRANCESCA CAPO¹ MARIA RUCSANDRA STAN² FRANCESCA DI PIETRO³

Abstract

This short paper is a work in progress in which we aim at investigating the role of language in how teams make sense of disruptions and cope with uncertainty during strategic or innovative-related decision-making. Lately, scholars have been focused on the influence of temporal structure on how teams restore action after disruptive events and retrospectively make sense of the disruptions (Awati & Nikolova, 2022; Sandström & Schildt, 2022). In this body of literature, we propose an emphasis to understand how language affects the decision-making of teams in uncertain circumstances using the theoretical lenses of sensemaking. To do so, by collaborating with a leading strategic innovation company based in Switzerland, we aim at performing a research experiment at the team level using video ethnography observations and open-ended questionnaires to collect feedback. We believe our work can contribute to literature on strategic innovation and decision-making, as well as providing interesting insights for managers and companies operating in international markets.

Key words: innovation; decision-making; uncertainty; research experiment.

Framing of the research. Language is a multifaceted and complex construct (Brannen et al., 2014) that is essential in “the process of constructing organisational, social, and global realities” (Lauring & Klitmøller, 2015: 47). Scholars have demonstrated how foreign language can have a significant influence on an individual's cognitive abilities (Baddeley, 2003), decision-making (Keysar et al., 2012), and attitudes towards innovation (Hadjichristidis et al., 2017). Language diversity within teams can be acknowledged through several indicators, including the number of languages spoken, the level of proficiency, and the influence of diverse backgrounds on interpretation (Kassis-Henderson, 2005). Moreover, it is important to differentiate between language and communication, as both have distinct implications and play key roles in the diffusion of information. Language skills refer to the ability to use specific sounds and grammatical structures of a particular language to convey meaning (Brannen, 2004), while communicative competence involves the ability to establish deeper and more effective agreements and understanding through discussion (Leung, 2005). Language skills are embedded in individuals (Angouri & Piekkari, 2018), and can influence team dynamics (Welch et al., 2005), whereas communicative competencies depend on both the sender and receiver of the message (Karhunen et al., 2018). The complementarity between language and communication enables individuals and teams to create shared meaning (Cohen & Kassis-Henderson, 2012).

According to research, using a variety of linguistic resources to create meanings and exchange knowledge about strategic and innovative solutions during the development of new ventures can have significant consequences for decision-making (Snihur et al., 2021). In the context of decision-making, language also serves as an advantage in team power dynamics where linguistic factors (e.g., proficiency disparities) influence the members' ability to use power sources, including hierarchical positions (Tenzer & Pudelko, 2017), which in turn affect collaboration and decision-making. Additionally, studies have shown how individuals engage in continuous sensemaking and feedback integration to navigate the uncertainty surrounding decision-making, particularly when undertaking decisions related to innovative solutions (Pryor et al., 2016). This integration involves ongoing language use and social interaction among team members as they attempt to understand ambiguous situations and new events.

A recent review by Whittle et al. (2023) categorised the sensemaking literature, discussing how the organisational meaning-construction process is linked to the distinct functions of the different linguistic forms, based on three approaches: language and cognition, language and discourse, and language and social practice. The cognitive linguistic approach highlights the role of language in reflecting and shaping the mental structures and in understanding how people interpret circumstances and actions (Hill & Levenhagen, 1995). This area of research defines the frame as a mental

¹ University of Milano Bicocca
e-mail: francesca.capo@unimib.it

² University of Milano Bicocca
e-mail: mariarucsandra.stan@unimib.it

³ University of Milano Bicocca
e-mail: francesca.dipietro@unimib.it

template through which individuals make sense of their environment (Walsh, 1995). The second line of research is the critical discursive perspective that focuses on the structures of meaning through which individuals comprehend and exert power, where discourses incorporate the “systems of thought” (Phillips et al., 2004). The third line of research is that of language and social practices that cover different perspectives, including narratives, rhetorical, and interactionist perspectives. The narrative perspective views language as a storytelling tool that structures discursive forms to support individuals in understanding their experiences (Brown et al., 2015). From this perspective, language is pivotal in shaping a new reality for organisational members (Dunford & Jones, 2000). The rhetorical approach highlights the persuasive nature of language in shaping the “sense-making” of different stakeholders (Maitlis & Lawrence, 2007). This persuasive use of language, also known as “sense-giving” (Gioia and Chittipeddi, 1991), aims to influence other individuals’ interpretation and understanding of information in shaping a desired perception of reality. Strategies of persuasion include lexical choices, content, and tone of language (Bilgili et al., 2017). The interactionist perspective views language as a tool for observing real-time interpretations and actions that shape social organisation within a group (Weick, 1995). This approach highlights various forms of interaction, including strategic decision-making (Rouleau & Balogun, 2011), power dynamics (Tourish & Robson, 2006), cue interpretation using frames (Bolander & Sandberg, 2013), work group coordination and collaboration (Einola & Alvesson, 2019), and technology and material artefacts (Cornelissen & Werner, 2014). Within the interactionist approach numerous methodologies have been employed, including the micro-ethnographic technique of analysing video recordings of healthcare teams (Christianson, 2019), grounded analysis primarily in observational data (video-audio recordings and transcripts) (J. S. Liu & Lu, 2012), and ethnomethodologically informed discourse analysis of tape-recorded meetings (Whittle et al., 2016).

Purpose of the paper. Until the early part of the 21st century, language in the realm of business and management lacked the formal recognition it deserved, unlike the closely associated concepts of culture and communication. While occasional mentions of language might have surfaced in subdisciplines like marketing, communication, and international business (IB), there was no cohesive research community or significant focus on the subject. The publication of special issues in *International Studies of Management and Organization* in 2005 (see Piekkari and Zander, 2005) and the *Journal of World Business* in 2011 (see Piekkari and Tietze, 2011) marked pivotal moments in highlighting the emergence of active researchers in this area. Finally, in 2014, the *Journal of International Business Studies* (JIBS) (see Brannen et al., 2014), renowned as the leading IB journal and the sole publication used by the *Financial Times* for its global journal rankings, released its inaugural special issue dedicated to this topic, further solidifying the significance of language in business and management literature.

This study aims to contribute to the field of innovation by highlighting the influence of language diversity (i.e., variety of languages spoken within a group of people) on team strategic or innovation-related decision-making using the theoretical lenses of sensemaking. Both ‘sensemaking’ and ‘language’ are dominated by the concept of uncertainty, as sensemaking helps actors navigate uncertain situations and make decisions in rapidly changing contexts as innovative ones (Sandström & Schildt, 2022), while language involves a degree of uncertainty and change in how it is used and understood (Degen, 2023). Research defines sensemaking as the process of creating meaning and understanding in complex and uncertain settings, while decision-making involves the selection of a course of action based on this understanding (Brown et al., 2015; Parmar, 2014). On the one hand, sensemaking lays the foundation for decision-making by shaping how individuals perceive and interpret their surroundings (Winch & Maytorena, 2009). On the other hand, decision-making provides feedback and new information that can influence future sense-making (Lipshitz et al., 2006). These interconnected processes mutually influence each other in organisational settings such as teams.

To advance the literature within the realm of management, in particular in entrepreneurship and innovation, we make use of different literatures that have dealt with the role of language diversity in team decision-making, including international business research (Brannen et al., 2014; Hadjichristidis et al., 2017; Tenzer & Pudielko, 2020; Volk et al., 2014) and organisational studies (Brannen, 2004; Kassis-Henderson, 2005; Lockwood et al., 2019; Rouleau & Balogun, 2011; Tourish & Robson, 2006; Whittle et al., 2016, 2023). However, our paper aims to contribute to the role of language diversity in innovative and entrepreneurial decision making, hence, we also integrate with emerging literature from strategy and entrepreneurship (Pryor et al., 2016; Welch et al., 2005), as well as linguistics (Degen, 2023; Leung, 2005), and psychology (Keysar et al., 2012) when appropriate. We employ an experimental method to replicate the decision-making procedure using a software designed to enhance innovation skills in organisational settings (e.g., Sparkademy). The feedback module (i.e., proxy for the decision-making process) within this software also includes the feature to record real-time interactions among team members. With our methodological approach, we respond to the call for contributing to the field of sensemaking by examining the relationship between language and decision-making processes through multimodal analysis (e.g., video-ethnography) (Whittle et al., 2023). This study is grounded in the interactionist perspective, which seeks to examine real-time decision-making processes within a multilingual team. However, we recognise the cognitive linguistic approach as a foundation for understanding how individuals interpret situations and actions, as well as the role of language in conveying meaning and information from team members. Hence, we aim to explore how language diversity is integrated into social interactions, while being mindful of the cognitive processes as antecedents of our results (Baddeley, 2003; Volk et al., 2014).

Methodology. Recent literature in entrepreneurship and innovation have highlighted the need to further empirical research in these fields using research experiments (Stevenson and Josefy, 2019; Williams et al., 2019; Grégoire et al., 2019; Morales et al., 2017). We answer this call by employing a research experiment to understand how language diversity influences a team’s innovation decision-making process. The research experiment at the team level will be supported by using video ethnography observations and open-ended questionnaires to collect feedback. At first, we aim

to conduct a pre-pilot test and non-intrusive observations with PhD-level students (around 16 individuals) to collect preliminary results and improve our experiment. Subsequently, once adjustments have been made, a pilot with master-level students from innovation and entrepreneurship courses. We plan of involving in the pilot around 90 master-level students, who will be divided into groups of three people for a total of 30 groups, where 15 groups speak the same language (i.e. common language is the individual's native tongue) and the other 15 groups were language-mixed (e.g. lingua franca is English). In particular, the control group will be the Italian-speaking group (i.e., native language group), whereas the mixed language groups include both those groups where the lingua franca is no one's mother tongue, as well as groups that will be able to capture the relative majority of language choice. This setting allows us to have at least three iterations of interaction among team members. Students will be recruited from master level course in an Italian university that includes both native and Erasmus students. Hence, participants will speak a different language, as well as they will have different levels of English proficiency (students will be assessed on their proficiency using the LexTALE test⁴). The experiment will be conducted in a virtual space. We modelled our pilot test research design based on previous studies using business students as proxies in business decision-making contexts (Song et al., 2022) to evaluate the launch of a new product (i.e., innovation setting).

To simulate the decision-making process, we collaborate with Sparkademy (a leading strategic innovation company based in Switzerland) which gave us access to part of their three-part module (aimed to tackle corporate innovation), in particular, they offered us the feedback module. We envision feedback as a proxy for the decision-making process of team members. In this module, participants are required to evaluate their team members on their LinkedIn CV. The completion of the module is approximately 1.5 hours. In the introduction, the Sparkademy module instructs the participant on how to provide constructive feedback through an interactive video. Subsequently, team members will have to introduce themselves, including their country of origin, and share stories about the great feedback they have received. Once instructions and introductions have been performed, the module then develops into four exercises: i) preparing for constructive feedback, in which participants exchange their LinkedIn profiles and then proceed to deliver written feedback (individual task); ii) sharing feedback with the team (team task); iii) reflecting on the received feedback (individual task); and iv) asking for further feedback (team task). All these parts are performed on the Sparkademy platform, which has the option of recording the video of team dynamics when exchanging feedback. Subsequently, an individual questionnaire will be used as a follow-up to map the decisions taken following the received feedback.

Expected results. The current study aims to understand which and how language characteristics (i.e., language choice, language structures, or frames) that are critical for teams when engaging into sensemaking and trigger peculiar mechanisms of decision-making in innovative contexts. The preliminary results of non-intrusive observations have shown how the feature of language diversity that defines our sample, influences those groups where their native language is spoken, leading to a smoother team interaction and enhanced intra-team comprehension. In contrast, we expect that in teams where English is the lingua franca, sensemaking may be hindered due to misinterpretations and difficulties of comprehension leading to understandings and decisions that might not be shared and fully comprehended by all team members. In fact, interacting with team members in English and thinking in their native language affects how individuals understand problems, feel emotions, and therefore make decisions (Keysar et al., 2012). The difference lies in how foreign and native language processing varies regarding instinct and conscious thought (Costa et al., 2014), and approach towards innovation (Hadjichristidis et al., 2016). Moreover, as a result of the distinct language structures present in the languages of team members, variations in reactions and final decisions following feedback are anticipated. This is because language structures have an impact on perceptions, thoughts, and actions (Chen, 2013; Hechavarria et al., 2017). This is a work in progress and the final results will be available following the research experiment and online survey.

Research limitations. Our work in progress entails some limitations. First, it focuses on a sample of students, and this choice may limit research's generalisability. Second, decision-making related to strategic innovation usually involves several factors, as a complex set of values and characteristics may play a role in this kind of decisions; however, empirically we were limited in the choice of factors (and variables) we could include in the experiment. Future research may address these limitations by replicating the experiment in other settings and including different variables which may influence the relationship between language and decision-making.

Managerial implications. This research aims to provide entrepreneurs and managers with recommendations to leverage language as a strategic tool in organisational activities to undertake innovative decisions. Indeed, the role played by language-structure in different firm's activities point to potential applications in terms of value creation, competitiveness, creativity, innovative outcomes and the creation of a more inclusive environment. Alongside language-structure, also language choices have key implications for organisations: a multilingual environment within firms may foster diversity in activities related to goal-definition and resource allocation, allowing for a more informed strategic planning, with positive returns for firms and for the economy in general. Indeed, research has shown that multilingualism may spur economic growth (World Economic Forum, 2018 - [ps://www.weforum.org/agenda/2018/02/speaking-more-languages-boost-economic-growth/](https://www.weforum.org/agenda/2018/02/speaking-more-languages-boost-economic-growth/)), in that it tears down not only language boundaries within the firm but also in its communication flows with stakeholders, customers and investors.

⁴ Lemhöfer, K., & Broersma, M. (2012). Introducing LexTALE: A quick and valid Lexical Test for Advanced Learners of English. *Behavior Research Methods*, 44, 325-343. See also: <https://www.lextale.com/whatislextale.html>

Originality of the paper. Our research aim at contributing to several streams of the scientific literature. First, results will inform strategic and management literature by fine graining the mechanisms through which language impacts on innovative decision-making. Second, our research project will inform entrepreneurship literature, which has started investigating the role of language in shaping investors' perceptions and triggering specific financial measures (e.g., earnings management; precautionary cash holdings). However, we lack a deep understanding of how these perceptions are shaped and how language can be leveraged when undertaking decisions about entrepreneurial and innovative ideas. Finally, we also contribute to refine the use of research experiments in empirical studies within the fields of entrepreneurship and innovation, as well as we respond to the call for contributing to the field of sensemaking by examining the relationship between language and decision-making processes through multimodal analysis (e.g., video-ethnography).

References

- ANGOURI J., PIEKKARI R. (2018), "Organising multilingually: Setting an agenda for studying language at work", *European Journal of International Management*, vol. 12, n. 1-2, pp. 8-27.
- AWATI K., NIKOLOVA N. (2022), "From ambiguity to action: integrating collective sensemaking and rational decision making in management pedagogy and practice", *Management Decision*, vol. 60, n. 11, pp. 3127-3146.
- BADDELEY A. (2003), "Working memory: looking back and looking forward", *Nature Reviews Neuroscience*, vol. 4, n. 10, pp. 829-839.
- BERGER P.L., LUCKMANN T. (1966), *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*, Doubleday & Company.
- BILGILI H., TOCHMAN CAMPBELL J., ELLSTRAND A.E., JOHNSON J.L. (2017), "Riding off into the Sunset: Organizational Sensegiving, Shareholder Sensemaking, and Reactions to CEO Retirement", *Journal of Management Studies*, vol. 54, n. 7, pp. 1019-1049.
- BOLANDER P., SANDBERG J. (2013), "How Employee Selection Decisions are Made in Practice", *Organization Studies*, vol. 34, n. 3, pp. 285-311.
- BRANNEN M.Y. (2004), "When Mickey Loses Face: Recontextualization, Semantic Fit, and the Semiotics of Foreignness", *The Academy of Management Review*, vol. 29, n. 4, pp. 593.
- BRANNEN M.Y., PIEKKARI R., TIETZE S. (2014), "The multifaceted role of language in international business: Unpacking the forms, functions and features of a critical challenge to MNC theory and performance", *Journal of International Business Studies*, vol. 45, n. 5, pp. 495-507.
- BROWN A.D., COLVILLE I., PYE A. (2015), "Making Sense of Sensemaking in *Organization Studies*", *Organization Studies*, vol. 36, n. 2, pp. 265-277.
- CHRISTIANSON M.K. (2019), "More and Less Effective Updating: The Role of Trajectory Management in Making Sense Again", *Administrative Science Quarterly*, vol. 64, n. 1, pp. 45-86.
- COHEN L., KASSIS-HENDERSON J. (2012), "Language use in establishing rapport and building relations: implications for international teams and management education", *Management & Avenir*, n° 55, n. 5, pp. 185-207.
- CORNELISSEN J.P., MANTERE S., VAARA E. (2014), "The contraction of meaning: The combined effect of communication, emotions, and materiality on sensemaking in the stockwell shooting", *Journal of Management Studies*, vol. 51, n. 5, pp. 699-736.
- CORNELISSEN J.P., WERNER M.D. (2014), "Putting Framing in Perspective: A Review of Framing and Frame Analysis across the Management and Organizational Literature", *The Academy of Management Annals*, vol. 8, n. 1, pp. 181-235.
- DEGEN J. (2023), "The Rational Speech Act Framework. <https://doi.org/10.1146/Annurev-Linguistics-031220-010811>, vol. 9, vol. 519-540.
- DUNFORD R., JONES D. (2000), "Narrative in strategic change", *Human Relations*, vol. 53, n. 9, pp. 1207-1226.
- EINOLA K., ALVESSON M. (2019), "The making and unmaking of teams", *Human Relations*, vol. 72, n. 12, pp. 1891-1919.
- GIOIA D.A., CHITTIPEDDI K. (1991), "Sensemaking and sensegiving in strategic change initiation", *Strategic Management Journal*, vol. 12, n. 6, pp. 433-448.
- HADJICHRISTIDIS C., GEIPEL J., SURIAN L. (2017), "How foreign language affects decisions: Rethinking the brain-drain model", *Journal of International Business Studies*, vol. 48, n. 5, pp. 645-651.
- HILL R.C., LEVENHAGEN M. (1995), "Metaphors and Mental Models: Sensemaking and Sensegiving in Innovative and Entrepreneurial Activities", *Journal of Management* (Vol. 21, Issue 6).
- IEDEMA R. (2007), *On the Multi-modality, Materiality and Contingency of Organization Discourse*. <http://dx.doi.org/10.1177/0170840607075264>, vol. 28, n. 6, pp. 931-946.
- KARHUNEN P., KANKAANRANTA A., LOUHIALA-SALMINEN L., PIEKKARI R. (2018), "Let's Talk about Language: A Review of Language-Sensitive Research in International Management", *Journal of Management Studies*, vol. 55, n. 6, pp. 980-1013.
- KASSIS-HENDERSON J. (2005), "Language Diversity in International Management Teams", *International Studies of Management & Organization*, vol. 35, n. 1, pp. 66-82.
- KEYSAR B., HAYAKAWA S.L., AN S.G. (2012), The Foreign-Language Effect. <https://doi.org/10.1177/0956797611432178>, vol. 23, n. 6, pp. 661-668.
- LAURING J., KLITMØLLER A. (2015), "Corporate language-based communication avoidance in MNCs: A multi-sited ethnography approach", *Journal of World Business*, vol. 50, n. 1, pp. 46-55.
- LEUNG C. (2005), "Convivial communication: recontextualizing communicative competence", *International Journal of Applied Linguistics*, vol. 15, n. 2, pp. 119-144.
- LIPSHITZ R., KLEIN G., CARROLL J.S. (2006), "Introduction to the special issue. Naturalistic decision making and organizational decision making: Exploring the intersections", *Organization Studies*, vol. 27, n. 7, pp. 917-923.

- LIU F., MAITLIS S. (2014), "Emotional Dynamics and Strategizing Processes: A Study of Strategic Conversations in Top Team Meetings", *Journal of Management Studies*, vol. 51, n. 2, pp. 202-234.
- LIU J.S., LU L.Y.Y. (2012), "An integrated approach for main path analysis: Development of the Hirsch index as an example", *Journal of the American Society for Information Science and Technology*, vol. 63, n. 3, pp. 528-542.
- LOCKWOOD C., GIORGI S., GLYNN M.A. (2019), "How to Do Things With Words": Mechanisms Bridging Language and Action in Management Research", *Journal of Management*, vol. 45, n. 1, pp. 7-34.
- MAITLIS S., LAWRENCE T.B. (2007), "Triggers and Enablers of Sensegiving in Organizations", *Source: The Academy of Management Journal*, vol. 50, n. 1, pp. 57-84.
- PARMAR B. (2014), "From Intrapsychic Moral Awareness to the Role of Social Disruptions, Labeling, and Actions in the Emergence of Moral Issues", *Organization Studies*, vol. 35, n. 8, pp. 1101-1126.
- PHILLIPS N., LAWRENCE T.B., HARDY C. (2004), "Discourse and Institutions", *Source: The Academy of Management Review*, vol. 29, n. 4, pp. 635-652.
- PRYOR C., WEBB J.W., IRELAND R.D., KETCHEN D.J. (2016), "Toward An Integration of the Behavioral and Cognitive Influences on the Entrepreneurship Process", *Strategic Entrepreneurship Journal*, vol. 10, n. 1, pp. 21-42.
- ROULEAU L., BALOGUN J. (2011), "Middle Managers, Strategic Sensemaking, and Discursive Competence", *Journal of Management Studies*, vol. 48, n. 5, pp. 953-983.
- SANDSTRÖM E., SCHILDT H. (2022), "Temporal Structuring in Sensemaking - How an Entrepreneurial Team Deals with Radical Uncertainty. <https://doi.org/10.5465/AMBPP.2022.17886abstract>, 2022 n. 1.
- SONG Y., ARNOTT D., GAO S. (2022), "Graduate students as surrogates for managers in business intelligence and analytics research: a preliminary study", *Journal of Decision Systems*, vol. 31, n. 3, pp. 280-304.
- TENZER H., PUDELKO M. (2017), "The influence of language differences on power dynamics in multinational teams", *Journal of World Business*, vol. 52, n. 1, pp. 45-61.
- TENZER H., PUDELKO M. (2020), "The Impact of Language Diversity on Multinational Teamwork", *Managing Multilingual Workplaces*, vol. 88-104.
- TOURISH D., ROBSON P. (2006), "Sensemaking and the Distortion of Critical Upward Communication in Organizations", *Journal of Management Studies*, vol. 43, n. 4, pp. 711-730.
- VOLK S., KÖHLER T., PUDELKO M. (2014), "Brain drain: The cognitive neuroscience of foreign language processing in multinational corporations", *Journal of International Business Studies*, vol. 45, n. 7, pp. 862-885.
- WALSH J.P. (1995), "Managerial and Organizational Cognition: Notes from a Trip Down Memory Lane. <https://doi.org/10.1287/Orsc.6.3.280>, vol. 6, n. 3, pp. 280-321.
- WEICK K.E. (1995), *Sensemaking in Organizations, Foundations for Organizational Science*, Sage publications. SAGE Publications, Thousand Oaks.
- WELCH D., WELCH L., PIERKKARI R. (2005), "Speaking in Tongues : The Importance of Language in International Management Processes", *International Studies of Management & Organization*, vol. 35, n. 1, pp. 10-27.
- WHITTLE A., MUELLER F., GILCHRIST A., LENNEY P. (2016), "Sensemaking, Sense-Censoring and Strategic Inaction: The Discursive Enactment of Power and Politics in a Multinational Corporation", *Organization Studies*, vol. 37, n. 9, pp. 1323-1351.
- WHITTLE A., VAARA E., MAITLIS S. (2023), "The Role of Language in Organizational Sensemaking: An Integrative Theoretical Framework and an Agenda for Future Research", *Journal of Management*, vol. 49, n. 6, pp. 1807-1840.
- WINCH G.M., MAYTORENA E. (2009), "Making good sense: Assessing the quality of risky decision-making", *Organization Studies*, vol. 30, n. 2-3, pp. 181-203.
- KRAUS S., MEIER F., NIEMAND T. (2016), "Experimental methods in entrepreneurship research: the status quo", *International Journal of Entrepreneurial Behaviour and Research* (Vol. 22, Issue 6, pp. 958-983), Emerald Group Publishing Ltd.
- HSU D.K., SIMMONS S.A., WIELAND A.M. (2017), "Designing Entrepreneurship Experiments: A Review, Typology, and Research Agenda", *Organizational Research Methods*, vol. 20, n. 3, pp. 379-412.
- MORALES A.C., AMIR O., LEE L. (2017), "Keeping it real in experimental research-understanding when, where, and how to enhance realism and measure consumer behavior", *Journal of Consumer Research*, vol. 44, n. 2, pp. 465-476.
- GRÉGOIRE D.A., BINDER J.K., RAUCH A. (2019), "Navigating the validity tradeoffs of entrepreneurship research experiments: A systematic review and best-practice suggestions", *Journal of Business Venturing*, vol. 34, n. 2, pp. 284-310.
- WILLIAMS D.W., WOOD M.S., MITCHELL J.R., URBIG D. (2019), "Applying experimental methods to advance entrepreneurship research: On the need for and publication of experiments", *Journal of Business Venturing*, vol. 34, n. 2, pp. 215-223.
- STEVENSON R.M., JOSEFY M. (2019), "Knocking at the gate: The path to publication for entrepreneurship experiments through the lens of gatekeeping theory", *Journal of Business Venturing*, vol. 34, n. 2, pp. 242-260.
- PIEKKARI R., TIETZE S. (2011), "A world of languages: Implications for international management research and practice", *Journal of World Business*, Vol. 46, n. 3, pp. 267-269,
- BEELER B., COHEN L., DE VECCHI D., KASSIS-HENDERSON J., LECOMTE P. (2017), "Special issue on language in global management and business", *International Journal of Cross Cultural Management* (Vol. 17, Issue 1, pp. 3-6), SAGE Publications Ltd.
- PIEKKARI R., ZANDER L. (2005), "Preface : Language and Communication in International Management", *International Studies of Management & Organization*, vol. 35, n. 1, pp. 3-9.
- BRANNEN M.Y., PIEKKARI R., TIETZE S. (2014), "Special Issue: The Multifaceted Role of Language in International Business: Unpacking the Forms, Functions and Features of a Critical Challenge to MNC Theory and Performance", *Source: Journal of International Business Studies* (Vol. 45, Issue 5), www.jibs.net
- PRESBITERO A., FROESE F.J., PELTOKORPI V., PUDELKO M., TENZER H. (2023), "Language in international human resource management: current state of research and future research directions", *International Journal of Human Resource Management* (Vol. 34, Issue 21, pp. 4027-4045), Routledge.

Websites

<http://www.societamanagement.it>

<http://www.sinergiejournal.it>

Combining innovation and business networks for resource mobilization in the meat sector: a case study

ALESSANDRO PAGANO¹ ELISA CARLONI²

Abstract

This study explores how SMEs in the meat sector mobilize resources for innovation, focusing on the intertwining of business and innovation networks. The research adopts a qualitative approach, based on an exploratory case study methodology, and relies on the business network perspective as the theoretical and analytical lens. The innovative setting under investigation is related to the “Suino della Marca” project in the Marche Region, Italy. Preliminary findings reveal a non-linear project trajectory marked by bureaucratic hurdles and strategic shifts. The startup Impronta Verde emerges as a key actor orchestrating business and innovation networks and addressing challenges such as financial constraints and market uncertainty. The study underscores the importance of resource mobilization, including financial and human resources, and the role of governmental support in fostering collaborative initiatives. While limitations include the preliminary nature of findings and reliance on one round of interviews, the research holds the potential to offer insights into resource mobilization through both business and innovation networks, using creative approaches and establishing new connections among key emerging actors, with implications for theory and practice.

Key words: innovation networks; meat industry; SMEs; ARA framework

Framing of the research. The meat sector has undergone significant transformations in recent years due to emerging challenges and changing factors, such as increased consumer demand for sustainable and ethically sourced products, new technologies advancing production and distribution processes, new markets, and stricter safety requirements (Maples et al., 2019; Golini et al., 2017; FAO, 2017). Such an evolving business landscape requires firms active in the industry to adapt and change strategies and organizational configurations to maintain their competitiveness and pursue new paths in their markets. This implies investing resources in innovative activities, adopting new organizational forms and mechanisms and involving other actors in the supply chain.

While large firms - often with a multinational dimension - have developed over time adequate capabilities to cope with market uncertainty and changes, small and medium-sized enterprises (SMEs) in the meat supply chain, usually located in rural settings, might face additional hurdles, and suffer a negative impact due to such unexpected new evolutions (Peón and Martínez-Filgueira, 2020). Indeed, SMEs suffer from limited resources in terms of skills, funding, and knowledge, which are essential for the pursuit of innovation processes (Mersico et al., 2023; Radas and Bozic, 2012).

The literature has widely demonstrated that SMEs might recur to networking and collaborative agreements with other firms and organizations, increasingly facilitated by collective initiatives and projects, to obtain access to resources and upgrade their innovative profile to remain competitive (Radas and Bozic, 2012; Ortega-Argilés et al., 2009). Despite the benefits of such collaborative efforts, there is a gap in the literature regarding the mechanisms and outcomes of networking and partnership initiatives among SMEs in the meat sector, particularly concerning resource mobilization for innovation.

Purpose of the paper. The main objective of this study is to gain a better understanding of the main processes concerning resource mobilization by SMEs active in the meat supply chain while pursuing innovative projects. This analysis will emphasize two distinctive and interrelated aspects:

- i) the co-existence and intertwining of business and innovation networks, where the business networks are described as the result of informal and emerging interactions between organizations, while innovation networks have a deliberate and conscientious nature, and are guided by consensus among members regarding specific objectives to be achieved (Rubach et al., 2017; Mota et al., 2023);
- ii) the main patterns concerning resource access, development, and combination (Baraldi et al., 2012; Bocconcelli et al., 2020), in the light of SMEs' limited capabilities.

In order to address these research objectives this ongoing research adopts the Business Network perspective (Håkansson et al., 2009) and notably its main conceptual underpinnings concerning the nature of business and innovation

¹ University of Brescia
e-mail: alessandro.pagano@uniurb.it

² University of Brescia
e-mail: elisa.carloni@unibs.it

networks (Rubach et al., 2017) and the resource development and mobilization processes, as emerging from the actors-resource-activities framework (Håkansson & Snehota, 1995).

Methodology. The study applies a qualitative case study methodology (Yin, 2003; Halinen & Törnroos, 2005). The case study in focus concerns the “Suino della Marca” innovation project, which has been implemented in the Marche Region, shaped by the initiatives of firms, supply chain stakeholders and organizations of producers, with the aim to create a local quality product based on a genetic line from the Marche Region.

Data collection is ongoing and is based on a combination of primary and secondary data sources. As the primary source of data, semi-structured interviews (Kvale & Brinkmann, 2009) have been conducted to account for the perspective of the main actors involved in the project: Baldi Carni, a local firm active in the agri-food sector which has taken the lead of the project, and Impronta Verde, the newly created startup taking care of brand management and committed to carry through the innovation path by providing resources and know-how. Preliminary interviews have been conducted with (1) the CEO of Baldi Carni and co-founder of Impronta Verde; (2) the Project Manager in charge of the “Suino della Marca” project; (3) the Manager of Impronta Verde. Project factsheets, the companies’ websites, the Marche Region official platforms as well as articles from local newspapers, constitute secondary data sources and have been used to track the project’s process and phases, interdependencies, key facts, and main results.

Data analysis follows a systematic combining approach (Dubois & Gadde, 2002), highlighting the interplay between the research object, methodology, and theory. The empirical analysis relies on the business network approach, and it has been guided by the ARA framework (Håkansson & Snehota, 1995). The ARA framework describes the content of business interaction in three interrelated layers: actors’ bonds, resource ties, and activity links. The three layers are highly interconnected as activities are performed by actors, who use resources and what happens in a specific relationship impacts not only the individual organization but also its relationships and the wider network. The framework appears suitable for investigating the role of key actors, both existing and emerging ones, the nature of activities carried out within and beyond the project’s boundaries, and the relevant resource mobilization processes.

Results.

1. Empirical findings

The “Suino della Marca” project started in the early 2000s with the primary aim of developing an autonomous Marche genetic type, a new breed of pig. The project’s trajectory has not followed a linear path over time and has been marked by significant shifts and challenges over time. Initially launched in 2006, the project underwent an experimental phase but was nearly abandoned shortly after due to bureaucratic hurdles. The project gained renewed attention in 2021 and is now back on track, moving towards full-fledged breeding. Overall, two main phases of the project can be highlighted: the first experimental phase from 2006 to 2009 and the second one from 2021 and still ongoing, where a new key actor, Impronta Verde, has taken the lead.

The first phase saw the setting up of the project, sponsored by the Marche Region following the increasing requests of the producer associations (i.e., Consorzio del Salame di Fabriano) and aimed to create a new genetic line - a rustic pig since the region was lacking a native breed - possessing the characteristics of Italian breeds and good zootechnical performance. The main partners of the project were the Marche Region, Università Politecnica delle Marche of Ancona, Università di Camerino, and Assam (now AMAP), which is the Agency for Innovation in Agribusiness and Fisheries “Marche Agricoltura Pesca”.

The universities involved designed and conducted the “hybridisation plan” by developing a crossbreeding program aimed to maximize heterosis and the degree of combinability, using five Cinta Senese boars and twenty Italian Large White sows. The hybridisation plan and crossbreeding program eliminated any risk of inbreeding and provided a high degree of combinability. However, as mentioned above, the hybridization process and the overall project have been stopped due to bureaucratic hurdles, and especially due to the failure of the breeders’ association that was formally the owner of the animals. The project therefore came to a halt in 2009 and remained at a standstill until 2021.

In more recent times, the Marche Region started to search for a firm or organization willing to continue the genetic program already approved by the Ministry of Agricultural Food and Forestry Policies within the national register of hybrid producers of pigs. Emiliano Baldi, owner of the medium-sized company Baldi Carni, expressed interest in taking the lead of the project, aligning with the vision of the company. This led to the creation of the startup Impronta Verde, with ownership of the herd and the involvement of a zootechnical entrepreneur.

However, embarking on such a project entailed major risks for Baldi due to the legacy of the project and of the sow farm and because it implied a substantial change and transition for the company, engaging in a new upstream phase of the supply chain, thus requiring comprehensive management of the pork supply chain. Impronta Verde faced high costs and operational challenges in managing new assets without a market presence, feedback, and economic return and with the need to enlarge the sow farm to reach the economic break-even point.

Impronta Verde has then signed a new agreement with the universities of Ancona and Camerino for the completion of selection and technical assistance in the early stages of breeding and has recently managed to involve two farmers for fattening located in the Marche Region. Marketing and promotion activities, including tests to understand the right sales and distribution strategy to be applied, have been undertaken. To date, B2C channels (Baldi’s shop, butcher’s stores...) are providing a better response, due to the reputation and legitimacy that Baldi has gained in the territory. The long-term objective of the project is to introduce the “Suino della Marca” as raw material in the production processes of other chains and expand genetic efforts by creating a configuration to transfer the breeding while protecting the intellectual property and ownership of the genetics.

Baldi Carni is a founding partner of Impronta Verde and aims to become the orchestrator of a network of breeders to promote a collective actor who is also competitive in accessing public funding, participating in bids, and can acquire critical mass and relevance in the eyes of the public stakeholders. With this objective in mind, Baldi has promoted the creation of a network thanks to the involvement of a consultant active in the setting up of a cooperative organization and the search for breeders in specific territories and marginal areas. The search for new partners is implemented through the involvement of local producers in training sessions concerning key innovative themes in pork farming. This activity is carried out autonomously, in cooperation with the local veterinary services and the Zooprophyllactic Institute, generating positive results in terms of interest and public recognition in the local breeders' community. However, at this stage, the active involvement of farmers and breeders in the project is impaired by the uncertainties related to normative and bureaucratic hurdles at the local, regional, and European levels, the diffusion of the African swine plague which requires substantive investments in biosecurity, the changes in prices due to the exacerbated costs of the raw materials following the war and the post-COVID period, and the significant changes in meat consumption.

The "Suino della Marca" innovation project shows synergies with other regional complementary projects, such as "SAImarche", an itinerant slaughtering project, addressing logistical challenges associated with the lack of slaughterhouses in the Marche Region and of non-full loads. By addressing logistic relationships, it is aimed at small livestock farmers but also agro-tourism farms that want to take advantage of extensive breeding opportunities, but do not know how to transport the animals to slaughterhouses. The project solves the problem linked to the lack of a structured relationship between the various actors (extensive breeders, farms, transporters, slaughtering...) by means of a container to be transported to an area close to a small number of farms for slaughtering purposes. Finally, Impronta Verde is also promoting a project aimed at providing free veterinary services to small farmers to provide them with the requirements to get involved in the "Suino della Marca" project. Summing up, the underlying objective of the "Suino della Marca" project is to provide the region with its own genetic prototype, with a wider horizon to create a stable network of farmers around this new genetic line.

2. Preliminary discussions of findings

Three primary insights emerge for further reflection that can be filtered through the three dimensions of the ARA framework (Håkansson & Snehota, 1995). First, the analysis provides insights into the characteristics of the innovation networks in the meat sector around the new genetic type, especially in terms of the plurality of actors involved, from business to governmental institutions, and universities, and highlighting the emergence of new actors for the purpose of innovation. A key actor in the "Suino della Marca" innovation project is Impronta Verde, an entrepreneurial initiative that formally owns the project, takes care of the brand management, and is committed to bringing the project to an end. This new actor, which interacts with firms (such as Baldi Carni), small farmers, and institutions such as public universities, is also in charge of the creation of a supply chain built around the new genetic line, the coordination of activity between supply chain actors and their aggregation under a common supply chain project. Impronta Verde represents a case of creative entrepreneurship in a complex supply chain context; this actor could play the role of orchestrator, effectively combining and connecting business and innovation networks (Andresen, 2021; Rubach et al., 2017).

The second insight concerns the main patterns of resource mobilization and interaction in place, in terms of access, development, and combination (or lack of integration). When looking at resource development and access in SMEs active in innovation processes, the pivotal role of financial resources emerges: the strengthening of business and innovation networks is a key evolution for gaining access to government support and funding. Also, the importance of organizational resources, in terms of human resources, is highlighted, as shown by Impronta Verde. The role of "orchestrator" is shaped by the availability of adequate personnel as technical complexities emerge and a wider variety of networks and projects have to be coordinated. Finally, synergies among projects and projects' resources are increasingly pursued, in light of the high interdependence among the different phases and actors of the meat supply chain. Such interdependencies and synergies represent an opportunity for fostering collaboration among different actors for the purpose of innovation.

Third, pursuing and implementing resource mobilization and development across business and innovation networks in the meat sector is further constrained by the structural market uncertainty and variability affecting many value chain activities, such as the one related to genotype development, activation of production partners, and marketing and distribution. The development of an innovative project such as "Suino della Marca" could therefore show a nonlinear evolution, shaped by changes of various nature - technological, business, institutional - and by the subsequent "networking" behavior by key actors in business and innovation networks.

Research limitations. This paper is a work in progress and, therefore, presents various limitations in terms of data collection at this stage. The empirical analysis is based on a first round of interviews with key informants belonging to the leading actors in the business and innovation networks, that is Baldi Carni and Impronta Verde. In the next phases of the research, additional interviews will be planned with informants belonging to other firms and organizations active in both business networks - particularly around the meat value chain - and innovation networks, such as universities and regional governments.

Managerial implications. The results of this research have relevant managerial implications. For small- and medium-sized firms and organizations, the pursuit of an innovative project in the meat sector is a very complex challenge for the variety of settings and contexts to be dealt with, increasing the uncertainty concerning both the process and the

final outcome. Overcoming obstacles and unexpected changes requires i) a careful assessment of the features and combination and business and innovation networks to be involved and/or set up; ii) the ability to effectively mobilize resources through such business and innovation networks, using creative approaches - as shown by the set-up of Impronta Verde - and establishing new connections among key emerging actors.

Originality of the paper. This ongoing study aims to enhance our comprehension of the main processes underlying innovation-related business relationships and networks of SMEs in the meat supply chain, using the “Suino della Marca” project as an explorative case study. The development of this specific area of research seems appropriate in light of the increasing interdependences and newly emerging challenges in the meat sector (Golini et al., 2017; Caccialanza, 2023), such as the abuse and misuse of antibiotics (Van Boeckel et al., 2017; Waluszewski et al., 2021), which require innovative measures (at the product, process, and organizational level) for mitigation and imply the adoption of coordination structures and governance mechanisms within networks.

This paper brings to the forefront the co-existence of business networks and innovation networks, showing different characteristics and only partially overlapping and intertwining with each other (Mota et al., 2023). While the business network appears more consolidated, the innovation networks surrounding the innovative initiative under investigation struggle to emerge and develop. Such difficulties underscore the importance, on the one hand, of fostering SMEs’ propensity to undertake cooperative initiatives promoted by public institutions (Munksgaard & Medlin, 2014) and, on the other hand, highlight the need for the regional government to include well-defined strategies that actively supports the establishment and interaction of business and innovation networks in its policymaking.

References

- ANDRESEN E. (2021), “Orchestrator’s interaction in hub-teams facilitating innovation network co-creation”, *Journal of Business & Industrial Marketing*, vol. 36, n. 9, pp. 1706-1718.
- BARALDI E., GRESSETVOLD E., HARRISON D. (2012), “Resource interaction in inter-organizational networks: Foundations, comparison, and a research agenda”, *Journal of Business Research*, vol. 65, n. 2, pp. 266-276.
- BOCCONCELLI R., CARLBORG P., HARRISON D., HASCHE N., HEDVALL K., HUANG L. (2020), “Resource interaction and resource integration: Similarities, differences, reflections”, *Industrial Marketing Management*, vol. 91, pp. 385-396.
- CACCIALANZA A., CERRATO D., GALLI D. (2023), “Sustainability practices and challenges in the meat supply chain: a systematic literature review”, *British Food Journal*, vol. 125, n. 12, pp. 4470-4497.
- DUBOIS A., GADDE L.E. (2002), “Systematic combining: an abductive approach to case research”, *Journal of Business Research*, vol. 55, n. 7, pp. 553-560.
- FAO. (2023), “Animal production”, Retrieved from <https://www.fao.org/animal-production/en>
- GOLINI R., MORETTO A., CANIATO F., CARIDI M., KALCHSCHMIDT M. (2017), “Developing sustainability in the Italian meat supply chain: an empirical investigation”, *International Journal of Production Research*, vol. 55, n. 4, pp. 1183-1209.
- HÅKANSSON H., SNEHOTA I. (1995), *Developing relationships in business networks*, Routledge, London
- HÅKANSSON H., FORD D., GADDE L.E., SNEHOTA I., WALUSZEWSKI A. (2009), *Business in networks*, John Wiley & Sons.
- HALINEN A., TÖRNROOS J.Å. (2005), “Using case methods in the study of contemporary business networks”, *Journal of Business Research*, vol. 58, n. 9, pp. 1285-1297.
- KVALE S., BRINKMANN S. (2009), *Learning the craft of qualitative research interviewing*, Sage publications, Los Angeles.
- MAPLES J.G., LUSK J.L., PEEL D.S. (2019), “Technology and evolving supply chains in the beef and pork industries”, *Food Policy*, vol. 83, pp. 346-354.
- MERSICO L., CARLONI E., BOCCONCELLI R., PAGANO A. (2023), “From knowledge broker to solution provider in the Industry 4.0 setting: the innovation path of a small consulting firm”, *Journal of Business & Industrial Marketing*, vol. 38, n. 6, pp. 1390-1406.
- MOTA J., SANTOS J.N., ALENCAR R. (2023), “Intertwining innovation and business networks for sustainable agricultural systems: A case study of carbon-neutral beef”, *Technological Forecasting and Social Change*, vol. 190, 122429.
- MUNKSGAARD K.B., MEDLIN C.J. (2014), “Self-and collective-interests: Using formal network activities for developing firms’ business”, *Industrial Marketing Management*, vol. 43, n. 4, pp. 613-621.
- ORTEGA-ARGILÉS R., VIVARELLI M., VOIGT P. (2009), “R&D in SMEs: a paradox?”, *Small Business Economics*, vol. 33, pp. 3-11.
- PEÓN D., MARTÍNEZ-FILGUEIRA X. (2020), “Determinants of investing in innovative activities by agri-food and KIBS firms in rural areas: An exploratory analysis”, *Journal of Small Business Management*, vol. 58, n. 6, pp. 1155-1186.
- RADAS S., BOZIC L. (2012), “Overcoming failure: Abandonments and delays of innovation projects in SMEs”, *Industry and Innovation*, vol. 19, n. 8, pp. 649-669.
- RUBACH S., HOHOLM T., HÅKANSSON H. (2017), “Innovation networks or innovation within networks”, *IMP Journal*, vol. 11, n. 2, pp. 178-206.
- VAN BOECKEL T.P., GLENNON E.E., CHEN D., GILBERT M., ROBINSON T.P., GRENFELL B.T., LEVIN S.A., BONHOEFFER S., LAXMINARAYAN R. (2017), “Reducing antimicrobial use in food animals”, *Science*, vol. 357, n. 6358, pp. 1350-1352.
- WALUSZEWSKI A., CINTI A., PERNA A. (2021), “Antibiotics in pig meat production: Restrictions as the odd case and overuse as normality? Experiences from Sweden and Italy”, *Humanities and Social Sciences Communications*, vol. 8, n. 1, pp. 1-1.
- YIN R.K. (2003), “Designing case studies”, *Qualitative Research Methods*, vol. 5, n. 14, pp. 359-386

The role of purpose in digital companies: a study on Exponential Organizations

FRANCESCO DERCHI¹ NICOLETTA BURATTI² FRANCESCO VITELLARO³

Abstract

The significance of purpose in business cannot be overstated. It acts as a guiding force, steering organisations towards meaningful societal contributions beyond mere profit maximisation. Scholars increasingly highlight its diverse implications for effective management amidst evolving societal expectations and digital transformation. Purpose-driven strategies align organisational goals with broader societal objectives, fostering shared identities among stakeholders. Articulating and centralising purpose within organisational culture and values significantly influences corporate brand identity. In the dynamic digital landscape, purpose emerges as a pivotal element for corporate branding, amplifying credibility, fostering customer engagement, and fortifying organisational resilience. Despite its acknowledged importance, a gap remains in understanding purpose's influence on corporate brand identity, particularly within digital companies. Therefore, this paper aims to address this gap by focusing on the case of Exponential Organizations (ExOs). ExOs leverage digital business models and technologies to grow exponentially while incorporating Massive Transformative Purpose (MTP) as a distinctive characteristic. This study explores how the MTP influences the brand identity dimensions of ExOs through qualitative analysis. The Corporate Brand Identity Matrix (CBIM) model is applied to analyse primary data gathered from in-depth interviews conducted with managers of two selected ExOs, supplemented by secondary data from internal and external sources related to the chosen cases. The paper contributes to the academic discourse on the impact of purpose on corporate brand identity, offering insights into brand differentiation, stakeholder engagement, and strategic alignment in the digital age. Additionally, this research provides managerial implications for brand purpose management, offering valuable insights for managers of digital companies.

Key words: purpose; digital business model; corporate brand identity; ExO; MTP

Framing of the research. *The incorporation of qualitative and creative elements within the organisational framework is inherently intertwined with fundamental concepts such as “vision”, “mission”, “values”, “purpose”, and “brand image” (Collins & Porras, 1991; Urde, 2013). This amalgamation is intricately linked to the firm's essence, serving as a strategic asset in management and collectively playing a pivotal role in shaping the organisation's identity (Henderson, 2021). The contemporary academic discourse has again brought this topic to the forefront, echoing sentiments expressed nearly 80 years ago. Indeed, Drucker (1974) characterised the management's neglect of business purpose and mission as a critical factor in business frustration and failure. However, in the present scenario, there remains a persistent challenge in understanding these qualitative elements, often deemed as “fuzzy”, necessitating deeper exploration to grasp their implications for business management. Younger et al. (2020) propose a model that establishes a hierarchical structure, positioning each concept from the core to the periphery of the organisation, progressively encompassing the others. The vision represents the “where” dimension, signifying the organisation's ultimate aim. This overarching level frames the other three dimensions, namely “what” (mission) the firm does/produces, “how” (values) it operates, and “why” (purpose) the organisation exists. The purpose stands at the core of the conceptual framework, emerging as a foundational driver for business growth and reflecting a notable resurgence of interest within the management literature (Henderson, 2021).*

Henderson and Van den Steen (2015) conceptualise purpose as a specific objective for a firm that extends beyond the pursuit of profit maximisation. Mayer (2018) posits that the purpose is rooted in the company's fundamental reason for existence and meaningful contribution to society, shaping its goals and strategic direction (Jimenez et al., 2021). However, the renewed interest in purpose among scholars highlights the intricate diversity of this concept entwined in exploring its implications for business management, particularly in the context of new digital businesses (George et al., 2021; Jimenez et al., 2021).

¹ e-mail: fderchi@gbsge.com

² University of Genova
e-mail: buratti@economia.unige.it

³ University of Genova
e-mail: francesco.vitellaro@unige.it

George et al. (2021) present two perspectives to harmonise definitions of purpose. The “goal-based purpose” focuses on organization-specific aspects, delving into corporate mission, vision, and strategies. Meanwhile, the “duty-based purpose” centres on moral and ethical values, with recent studies exploring company values and organisational engagement in social and environmental initiatives. In this regard, Porter and Kramer (2006) assert that businesses carry a moral imperative, explicitly tying the creation of competitive advantage to their societal responsibilities. This implies crafting a solution beyond corporate philanthropy, emphasising a sustained commitment to generate value for all stakeholders. The overarching goal is to bolster productivity and foster prosperity within the community. Building on this perspective, Aßländer & Curbach (2014) contend that corporations must undergo a transformative evolution, transitioning into a new role as active contributors to the community. This shift involves a departure from a self-centric focus, urging corporations to assume the role of societal actors and exhibit responsible behaviours.

According to Hollensbe et al. (2014), an organisation's purpose involves cultivating a shared identity that aligns shareholder value with broader societal goals. The nexus between corporate and social purposes becomes pivotal, facilitating the alignment of business objectives with heightened political awareness and increased social engagement (Lawton et al., 2020; Patriotta, 2021). Accordingly, Vredenburg et al. (2020) delineate purpose-driven strategy as a deliberate stance on socio-political issues, intending to effect social change and achieve marketing success. Furthermore, Mayer (2021) underscores the imperative for companies to meticulously identify, articulate, and centralise their purpose within their operations. This exertion substantially shapes organisational identity, culture, and values, highlighting the critical significance of delineating how companies present themselves to customers and employees. This strategic process assumes a pivotal role in the creation and effective communication of image and value.

In light of these considerations, the purpose has recently assumed a central role in shaping the corporate brand identity (Urde & Greyser, 2016), primarily due to its ability to make the company's societal impact visible (Annweiler, 2018). Hajdas and Kleczek (2021) advocate purpose-driven branding initiatives, emphasising their potential to empower users, stimulate transformative processes, and contribute to social and cultural impact. This strategic approach is an impetus for developing innovative managerial practices, allowing brands to broaden their societal influence, sway customer perceptions, actively contribute to social change, and enhance their value. The current dynamic landscape of consumer expectations underscores the imperative for brands to provide functional benefits and exhibit a clearly defined social purpose (Henderson, 2021). Therefore, credibility, considered a pivotal factor by stakeholders, can be enhanced through purpose, manifesting the organisation's essence (Cullinan et al., 2021). Calder (2022) also advocates for the seamless integration of a brand into its positioning, affirming its integral status within the larger context. Hence, embracing a defined purpose confers substantial advantages to a brand and is crucial in enhancing community outreach (Hsu, 2017). This perspective resonates with Bonchek's (2013) emphasis on customers actively seeking inclusion, a sense of belonging, and opportunities for meaningful engagement.

The prominence of corporate brand identity and purpose has heightened with the onset of the digital era, especially among born-digital companies (Mingione & Abratt, 2020). Digital technologies offer unparalleled opportunities and challenges in today's business environment. Nevertheless, the field of branding has yet to fully adopt the dynamic mindset essential for navigating this rapidly evolving landscape (Von Wallpach et al., 2017). Emerging brands leverage the digital wave, utilising digital business models to create value with consumers while prominently highlighting their values. Within this context, a brand identity rooted in a solid and credible purpose enhances the customer experience and is a strategic differentiator in the competitive digital landscape (Filho et al., 2024). It also amplifies the effectiveness of digital marketing efforts and employee engagement (Birkinshaw, 2019). Veloutsou and Guzman (2017) underline technology's significant impact on daily consumer lives, highlighting the pivotal role of social media in consumer empowerment. Therefore, a prominent online presence that aligns with the corporate purpose cultivates transactional trust and ensures the brand is recognised and valued across diverse digital platforms (Veloutsou & Guzman, 2017). Additionally, a well-defined brand purpose empowers digital companies to swiftly adapt to rapid changes and emerging trends while maintaining a distinctive core brand identity.

Purpose of the paper. Purpose emerges as a pivotal factor in shaping brand identity, providing stakeholders with heightened clarity regarding their affiliations and the brand's overarching commitment to social and environmental issues (Cullinan et al., 2021). The purpose becomes a pertinent component of brand identity (Mirzaei et al., 2021) and is intricately linked to its inspirational aspects, extending beyond mere profit considerations. Thus, the brand purpose can elicit specific perceptions and profoundly impact consumers (Filho et al., 2024). Notwithstanding advancements in the study of brand purpose, the academic inquiry remains incipient (Narayanan and Das, 2021). Recent exploratory investigations suggest the potential of brand purpose to engender value for consumers and contribute to brand equity (Hsu, 2017; Annweiler, 2018; Hajdas & Kleczek, 2021; Williams et al., 2022; Filho et al., 2024). However, a gap exists in the literature, as extant research has not explicitly delved into the ramifications of purpose on brand identity. Specifically, there is a dearth of studies into how and to what extent purpose influences the various dimensions of brand identity, particularly the implications for value creation stemming from consumers' and companies' perceived value of purpose. Furthermore, although significant expertise has been cultivated in comprehending product/service brands, the same level of understanding is lacking regarding corporate brands and related issues (Urde & Greyser, 2016). The lack of studies focusing on companies adopting a digital business model encompassing both born-digital and transformative digital enterprises appears notable, given the anticipated substantial benefits of integrating purpose into brand identity management.

Hence, this paper seeks to contribute to the nascent academic literature on brand purpose management by addressing the following research question:

RQ: How does the integration of purpose influence the building of corporate brand identity in companies implementing a digital business model?

The paper aims to comprehend the mechanisms and extent to which purpose can influence and yield benefits for corporate brand identity across all dimensions. Specifically, the study explores how declaring and adopting purpose as a core brand value can enhance the value proposition.

Methodology. Two primary considerations guide the selection of the research methodology. First and foremost, the nature of the research question significantly shapes the choice of methodology, favouring a qualitative research approach as the most suitable means to examine this complex phenomenon thoroughly. Secondly, qualitative methodology is considered a preferred research option for scholars investigating business identity, particularly the “softer aspects of management” that include the purpose (Henderson, 2021). Balmer (2001) also underscores the importance of case study research, recommending naturalism in investigating business identity management. Applying case study methodology is also considered indispensable in the early stages of theory development (Gill & Johnson, 1991). This is notably pertinent in analysing the case surrounding the scrutiny of brand purpose.

In this qualitative investigation, we focus on Exponential Organizations (ExOs) as they present a substantial case study to address the research question. ExOs represent a contemporary phenomenon with disruptive implications stemming from the digital revolution. Coined by Ismail et al. (2014) in their seminal work, “Exponential Organizations: Why New Organizations Are Ten Times Better, Faster, and Cheaper than Yours”, the ExO concept delineates a distinct category of digital enterprises “whose impact or output is disproportionately large - at least 10 times larger - compared to its peers because of new organisational techniques that leverage accelerating technologies”. Prominent examples of ExOs include Airbnb, Google, and Spotify, exemplifying the success achievable within this unique category of digital firms. Since the book's publication by Ismail et al. (2014), a robust community of practitioners has coalesced, evolving into what is now recognised as the OpenExO Community. This community has burgeoned into a global movement, encompassing more than 6,500 individuals from 130 countries (Allen, 2020). This growth has facilitated Ismail's establishment of a business consultancy grounded in ExO principles, harnessing practitioners as a dynamic community capable of serving as a reservoir of on-demand personnel.

From an academic standpoint, Marchese et al. (2020) undertook a comprehensive literature review to delineate the key elements characterising ExOs. Their work identified three primary strands within the literature contributing to understanding the ExO concept: organisational design, strategy, and technological innovation. According to their findings, an ExO is defined as an entity that can enhance its dynamic capabilities by amalgamating digital technologies, experimentation, and autonomy in organisational models. This adaptability allows the ExO to align with its context and achieve exponential results fully (Marchese et al., 2020). Pompa (2019) supplements this perspective by asserting that the success of an ExO hinges on two critical factors: access to information technologies and innovative organisational models. In this context, digital business models and technologies emerge as fundamental components that provide the framework for ExOs. Notably, digital platforms serve as the catalysts for exponential growth by effectively matching the demands and supplies of the market. Furthermore, digital platforms present opportunities for scalability, capitalising on positive network effects and fostering business prospects through value co-creation with customers. Each facet of their digital business model is pivotal in the accelerated growth that characterises ExOs.

Furthermore, our emphasis on ExOs stems from their purpose-driven characteristic. Ismail et al. (2014) explicitly incorporated the concept of Massive Transformative Purpose (MTP) as a central element defining an ExO. The MTP serves as the fundamental *raison d'être*, adhering to specific prerequisites, particularly uniqueness. In detail, for an MTP to be deemed Massive, it must possess a global scope and be linked to either a novel or pre-existing abundance (Ismail et al., 2018). The overarching idea is for the MTP to wield substantial influence, harnessing the exponential acceleration of technology. Moreover, the Transformative aspect of the MTP necessitates it to be highly aspirational and inspiring, identifying a dimension beyond current possibilities and contributing to positive global change. This underscores the interconnectedness of these businesses with society, recognising that their prosperity is intricately tied to the well-being of the larger community. Lastly, the Purposeful criterion dictates that the MTP should elucidate the *raison d'être* of the organisation (Ismail et al., 2018), aligning seamlessly with the earlier definition of purpose we discussed previously. In addition to this definition, Dimitrov (2022) has recently contributed to understanding MTP by identifying its core as a cherished culture that engenders significant impact within and beyond the organisational sphere. This culture catalyses effecting profound change, leveraging operational excellence and business innovation as critical mechanisms. Through this lens, the MTP functions not only as a guiding principle but also as a dynamic force that drives continuous improvement and fosters innovation, ultimately leading to tangible outcomes that extend far beyond the confines of the organisation itself.

In light of the considerations above, ExOs emerge as compelling case studies due to their status as a burgeoning global phenomenon. They encapsulate the two focal aspects investigated in the current study: digital business models and purpose.

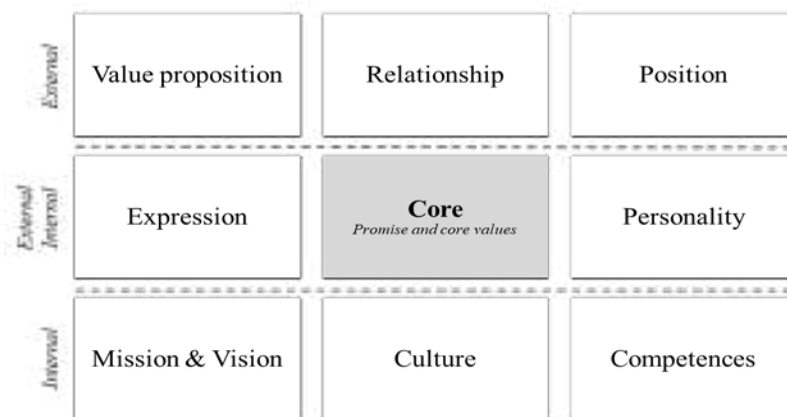
We strategically selected two prominent ExOs for in-depth examination: Airbnb, which illustrates the characteristics of a digital-native company, and Mylia, which embodies the outcome of a transformative digital evolution. These organisations operate within distinct sectors, with Airbnb prominent in the hospitality industry and Mylia specialising in learning and development consulting. A compelling and impactful purpose underpins each. Airbnb's MTP of "Belong

Anywhere" resonates globally, addressing the universal human experience and potentially reaching every destination worldwide. This MTP, fostering a sense of being "part of something larger", has been strategically positioned at the core of Airbnb's company culture, representing a significant competitive advantage. Furthermore, Airbnb holds a position in the Unicorn Club, having adopted a digital business model since its inception in 2007, solidifying its status as a digital-native company. This strategic alignment with digital principles has contributed to Airbnb's success and evolution. Conversely, Mylia was established with a fresh perspective and cultural ethos, crafting a new digital business model dedicated to training courses. Today, Mylia is one of the leading entities in the Italian training market. As a part of the Adecco Group, Mylia was launched in 2018 with the MTP of "Advancing Humanity". This MTP was identified during a transformative journey that commenced in 2016. This dual exploration of Airbnb and Mylia provides a comprehensive examination of ExOs operating in different sectors, each driven by a powerful purpose and embodying unique digital business models.

The development of our cases draws upon a combination of primary and secondary data, ensuring a comprehensive and in-depth analysis of the chosen ExOs. This dual-source approach enhances the robustness of our investigation, enabling us to glean valuable insights into the intricate dynamics of digital business models and purpose within the context of ExOs. A rigorous approach was adopted to identify, contact, and actively involve executives from Airbnb and Mylia in systematically investigating the chosen ExOs. Two in-depth interviews were conducted with key managers for Airbnb on April 9th, 2021, and March 17th, 2022. The first manager, a former advertising executive and brand specialist, played a pivotal role in defining Airbnb's corporate purpose, overseeing the Airbnb Community. The second manager holds the position of Country Manager for the Italian market. In the case of Mylia, seven interviews were conducted in April and May 2021. Four of these interviews involved leadership team members, while one manager was the Project Manager responsible for R&D and Innovation. All interviews were conducted remotely using Microsoft Teams as the collaborative platform, ensuring accessibility and efficiency in the data collection process. Simultaneously, primary data from interviews was complemented with information gathered from internal sources, such as corporate reports and documents. Additionally, external sources, including social networks and websites, were explored to augment the dataset. The data was coded systematically using the open-access tool Taguette.

This comprehensive methodology facilitated a meticulous and transparent analysis, adhering to the rigorous standards of academic research in terms of both precision and reproducibility. The interview questions were carefully structured, drawing inspiration from Urde's "guiding identity questions" explicitly tailored for probing the implementation of the Corporate Brand Identity Matrix (CBIM) model (Urde, 2013). We utilised the CBIM Urde (2013) to explore and analyse the collected data from the two case studies. Based on their impact, this matrix categorises dimensions into external, internal, and mixed, establishing interconnected relationships that influence the brand. The harmonious alignment of all nine dimensions and consistent interrelation fortify the brand (Figure 1).

Figure 1. Corporate Brand Identity Matrix (CBIM) model.



Source: Urde (2013)

Placed at the centre of CBIM, the "brand core" functions as an analytical tool and an operational guide (Urde, 2013). This dimension defines promises and core values that directly influence the other eight areas of the model. The other dimensions include "expression", which pertains to the verbal and visual manifestation of the brand, and "personality", which focuses on the brand's character. Both aspects simultaneously impact the organisation's internal (sender) and external (receiver) facets. The "mission and vision", "culture", and "competencies" constitute the internal dimension of the brand, closely tied to organisational values. On the other hand, the "value proposition", "relationship", and "position" represent the external dimensions of the brand, concentrating on interactions with both customers and non-customer stakeholders. Hence, the selection of the CBIM model stems from its capacity to offer a dynamic approach to delineating a firm's identity, presenting a comprehensive framework for exploring and comprehending the multifaceted impact of purpose on corporate brand identity. In this context, the MTP (i.e., purpose) is presumed to be integrated into the brand core, playing a pivotal role in shaping and influencing the other dimensions within the CBIM framework.

Results. From the collected information, we identify and describe the corporate brand identities of the two selected ExOs. We present the overall coherence between dimensions and use Urde's four dynamics (2013) to explain the role of the MTP in creating alignment between them.

The strategy diagonal involves the dimensions of Mission and Vision, Core, and Position. In the case of Airbnb (Figure 2), the MTP "Belong Anywhere" is present in the firm's mission statement and is often even used when discussing the vision. While also representing the promise of the brand, the MTP is key in clarifying Airbnb's position in the hearts and minds of customers, being used extensively in advertising and communication.

The horizontal communication requires the dimensions of Personality and Expression to be aligned with the Core. At Airbnb, the MTP has been visually translated into a symbol. The "Bélo" is an abstract figure defined as "a symbol of belonging". Similarly, Airbnb's corporate character is represented by its founders, particularly by the CEO, Brian Chesky. He was the first host to rent apartment beds and pioneer Airbnb's business model. Moreover, he often refers to the MTP when starting his public communication. Amidst the workforce adjustments prompted by the COVID-19 pandemic, he articulated the significant challenge of managing the situation, particularly for a company like theirs, whose mission is deeply invested in fostering a sense of belonging.

Figure 2. CBIM of Airbnb.



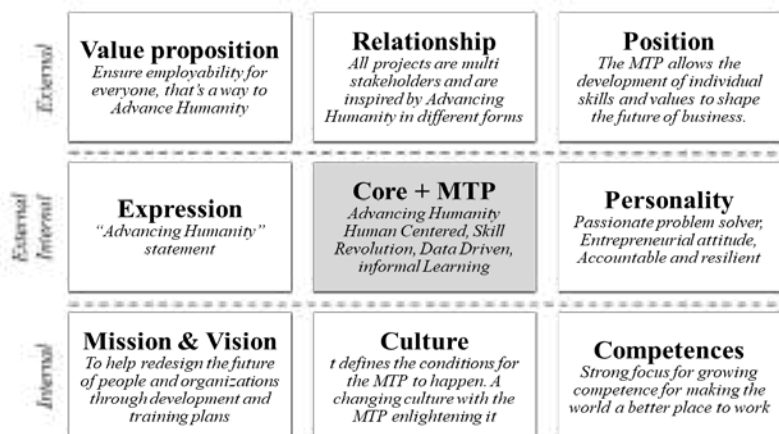
Source: Authors' elaboration

In the case of Mylia (Figure 3), the MTP "Advancing Humanity" emerges as an element of the Core, inspiring the other eight dimensions of the corporate brand identity.

The competition diagonal involves Competencies, Core and Value Proposition. Since its birth, Mylia has invested in developing internal competencies to improve the world. An example of this can be found in the job description for the role of Learning Designer (Focus on Green Transition). At the same time, the MTP also directly influences the value proposition. "Human Centered" is the first pillar of Mylia's proprietary L&D framework. As a result, Mylia's Product Change Academy won the "Prodotto Formativo 2021" Prize as the best learning and development product introduced in the market in 2021 (Polotti, 2021).

Finally, the relationship vertical concerns how the firm deals with various stakeholders. In different interviews, Advancing Humanity emerged as an indirect inspiration for shaping third-party relationships. Team collaboration and a holistic and collective approach to growth are defined as ways to advance humanity. This perspective has played a profound role in the firm's values. It also emerges in the culture dimension as "a changing culture that involves everyone in the organisation." The MTP is "a guide for our colleagues... for making this change effective."

Figure 3. CBIM of Mylia.



Source: Authors' elaboration

Research limitations.

Limitations are specific to each case study and related to the entire research.

First, the study is focused on two organisations only. While exploring this new topic is already useful, it should be considered a step towards a broader and more structured approach. As a second aspect, the two cases have been identified as representative of different industries. However, applying the same approach and extending the reach to two or more firms per industry would give us a valuable, broader perspective and include additional theoretical and managerial contributions. A third point is related to the study's industry coverage. Considering that only two sectors have been approached, it would be interesting to extend the study to a more significant number, for example, according to the digital vortex research (Wade et al., 2021). Fourth, every case study was designed to describe each organisation in a specific period, as identified in previous studies about the brand core (Urde, 2016). It would be interesting to study the ExOs with a longitudinal observation and the management of the MTP over time. A fifth point concerns the number of executives engaged in the research. In the case of Mylia, the number of managers interviewed could be significant, but the Airbnb case featured only two managers. Although they cover a relevant role in the organisation, this can be a limitation, considering the number of stakeholder groups involved in an ExO ecosystem. For this reason, a more inclusive study involving more internal and external perspectives should be undertaken in the future. Sixth, some limitations can be identified in the data types. All primary data have been collected through interviews. Due to restrictions related to COVID-19, some planned sessions for data collection through observations have been cancelled. Taking into account the importance of data diversity when it comes to qualitative research (Bryman, 2016; Yin, 2017), including the ones from observations, it would be valuable to extend the research with more data variety. Finally, a seventh point involves the nature of the work, supported by an inductive method. In the future, it would be interesting to extend the research following a different methodology, such as deductive (Bryman, 2016) or even abductive (Dubois & Gadde, 2002). This methodology, in particular, has already been applied to previous research about corporate brand identity (Urde & Greyser, 2016).

Lastly, when it comes to the definition of further studies, it could be interesting to extend the research to the different ExO attributes as dimensions of the impact of the MTP. The study has revealed that the CBIM cannot fully explain an Exponential Organization's identity. According to the existing literature on Corporate Brand Identity (Balmer, 2001, 2010), exponential attributes like Leveraged Assets or Staff on Demand should be analysed to understand their role as distinctive components of an ExO. It could lead to new considerations about the firm's corporate brand identity and relative dynamics.

Managerial implications. First, this study contributes to creating systematic knowledge of ExOs, particularly the MTP. ExO scholars have clearly defined this need (Pompa, 2019; Marchese et al., 2020; Dimitrov, 2022). Also, this work is a step forward in validating the MTP concept, addressing the gap between academics and practitioners, as Bansal et al. (2012) described. The MTP emerges as a vital intangible asset within an ExO. Integral to the brand's core, it establishes identity and offers a clear sense of direction, inspiring and challenging the organisation. Simultaneously, the MTP exerts influence across various dimensions: shaping the firm's culture and internal operations, defining the brand and its external engagements, and informing the ExO's competitive strategy.

Another significant finding from our study corroborates Ismail et al. (2014)'s assertion that the MTP is a fundamental prerequisite for an organisation to qualify as an ExO. According to Ismail et al. (2018), the MTP “defines the core purpose of the organisation's existence”, elucidating the company's aspirations. Therefore, the MTP must possess specific characteristics: it should address abundance, inspire transformation, and articulate the organisational purpose (Ismail et al., 2014). This is evident from our analysis of case studies. Both statements, such as Airbnb's “Belong Anywhere” (Chesky, 2014) and Mylia's “Advancing Humanity”, exhibit characteristics of being both Massive and Transformative.

The findings further indicate that the MTP constitutes a component of an ExO's brand core, as per Urde's model (2016). Our research illustrates that the MTP influences the brand's Promise and Core Values, which define the brand's essence, as outlined by Urde (2013). Therefore, the MTP is pivotal in shaping an ExO's corporate brand identity.

In conclusion, our study, employing the CBIM, has shed light on the significant role of the MTP in the value-creation process of ExOs. It becomes evident that coherence and alignment across various dimensions enable firms to effectively manage their corporate brand identity through the brand core, particularly in navigating diverse business challenges (Urde, 2013). Developing a specific value proposition for an ExO necessitates alignment with the brand promise, the brand core, and, consequently, the MTP. Scholars argue that this alignment is crucial for building reputation and fostering positive customer relationships, ultimately leading to revenue generation. Our research underscores corporate brand identity as a formidable management challenge (Urde, 2013). Furthermore, this aspect is highlighted by applying the competition diagonal, which delineates the managerial dynamic concerning how a firm operates in the market, employing differentiation based on market positioning and the organisation's competencies.

Originality of the paper. This research aims to elucidate the concept of the MTP, a relatively novel topic in academia (Dimitrov, 2022). Similarly, ExOs, defined as companies implementing a digital business model and technologies, is perceived as a new study area (Pompa, 2021). However, they are relevant to contemporary managerial challenges (Marchese et al., 2020). Consequently, there is a pressing need for dedicated and innovative research efforts in this domain (Pompa, 2019). Moreover, considering Ismail's projection that all businesses will evolve into ExOs within the next decade (Derchi, 2021), the urgency to explore innovative methodologies to study this phenomenon becomes even more apparent (Pompa, 2019).

In this context, there is a pressing need to develop innovative approaches for studying digital companies, particularly

ExOs, and recognise the practitioner-centric nature of the subject matter. Moreover, delving into the concept of purpose and its ramifications on corporate brand identity unveils potential new pathways for digital company leaders to foster increased mindfulness in their decision-making processes and amplify the effectiveness of their actions.

References

- ÅBLÄNDER M.S., CURBACH J. (2014), "The Corporation as Citizen? Towards a New Understanding of Corporate Citizenship", *Journal of Business Ethics*, vol. 120, pp. 541-554.
- ALLEN K. (2020, October 16), "Exponential organisations 2nd Edition: Your chance to participate. Pnewswire. Retrieved February 26, 2022, from <https://www.pnewswire.com/news-releases/exponential-organizations-2nd-edition--your-chance-to-participate-301153953.html>
- ANNWEILER B. (2018), "The purpose is at the core of branding", *Journal of Brand Strategy*, vol. 7, n. 3, pp. 214-224.
- BALMER J.M.T. (2001), "The three virtues and seven deadly sins of corporate brand management", *Journal of General Management*, vol. 27, n. 1, pp. 1-17.
- BALMER J.M.T. (2010), "Explicating corporate brands and their management: Reflections and directions from 1995", *Journal of Brand Management* vol. 18, n. 3, pp. 180-196.
- BIRKINSHAW J. (2018a), "How is technological change affecting the nature of the corporation?", *Journal of the British Academy*, vol. 6, n. s1, pp. 185-214.
- BONCHEK M. (2013), "The purpose is good. Shared purpose is better", *Harvard Business Review*. Retrieved March 12, 2023, from <https://hbr.org/2013/03/purpose-is-good-shared-purpose>
- BRYMAN A. (2016), "Social Research Methods. Fifth Edition. Oxford University Press.
- CALDER B.J. (2022), "Customer interaction strategy, brand purpose and brand communities", *Journal of Service Management*, Vol. 33 No. 4/5, pp. 747-757.
- COLLINS J.C., PORRAS J.I. (1991), "Organisational vision and visionary organizations", *California Management Review*, vol. 34, n. 1, pp. 30-52.
- CULLINAN J.A., ABRATT R., MINGIONE M. (2021), "Challenges of corporate brand building and management in a state-owned enterprise", *Journal of Product & Brand Management*, vol. 30, n. 2, pp. 293-305.
- DUBOIS A., GADDE L.E. (2002), "Systematic combining: an abductive approach to case research", *Journal of Business Research*, vol. 55, n. 7, pp. 553-560.
- CHESKY B. (2014, July 16), *Belong Anywhere*. Medium. Retrieved March 13, 2024, from <https://medium.com/@bchesky/ccf42702d010>
- CHESKY B. (2020, May 5), "A message from co-founder and CEO Brian Chesky. Airbnb Newsroom. Retrieved April 2, 2023, from <https://news.airbnb.com/a-message-from-co-founder-and-ceo-brian-chesky/>
- DERCHI F. (2021b), "Tra 10 anni Ogni Impresa sarà Una ExO", *Harvard Business Review Italia*. Supplemento al numero di Luglio/Agosto. Pp. 25- 28.
- DIMITROV K. (2022), "Organizational Leadership through the Massive Transformative Purpose", *Economic Alternatives*, ISSN 2367-9409, University of National and World Economy, Sofia, Vol. 28, Iss. 2, pp. 318-344.
- DRUCKER P.F. (1974), "Tasks, responsibilities, practices", *New Yorks Row*, pp. 121-122.
- GEORGE G., HAAS M.R., MCGAHAN A.M., SCHILLEBEECKX S.J., TRACEY P. (2021), "Purpose in the for-profit firm: A review and framework for management research", *Journal of Management*, vol. 49, n. 6, pp. 1841-1869.
- GILL J., JOHNSON P. (1991), *Research Methods for Managers*. Paul Chapman, London.
- GONÇALVES FILHO C., CHINELATO F.B., PRADO F.V. (2024), "The grounded theory approach to brand purpose equity drivers: the practitioner's perspective", *Journal of Marketing Analytics*, pp. 1-16.
- HAJDAS M., KŁECZEK R. (2021), "The real purpose of purpose-driven branding: consumer empowerment and social transformations", *Journal of Brand Management*, vol. 28, pp. 359-373.
- HENDERSON R.M. (2021), "Innovation in the 21st Century: Architectural Change, Purpose, and the Challenges of Our Time", *Management Science*, vol. 67, n. 9, pp. 5479-5488.
- HENDERSON R.M., VAN DEN STEEN E. (2015), "Why Do Firms Have "Purpose"? The Firm's Role as Carrier of Identity and Reputation", *American Economic Review*, vol. 105, n. 5, pp. 326-30.
- HOLLENSBE E., WOOKEY C., HICKEY L., GEORGE G., NICHOLS C.V. (2014), "Organizations with purpose", *Academy of Management Journal*, vol. 57, n. 5, pp. 1227-1234.
- HSU C.K.J. (2017), "Selling products by selling brand purpose", *Journal of Brand Strategy*, vol. 5, n. 4, pp. pp.373-394.
- ISMAIL S., LAPIERRE M., PALAO F. (2018), *Exponential Transformation: The Ultimate Playbook to Evolve Your Business and Change the World for the Better*. Diversion Books - Wiley.
- ISMAIL S., MALONE M.S., VAN GEEST Y. (2014), *Exponential Organizations: Why new Organizations are Ten Times Better Faster and Cheaper than Yours (and what to do about it)*. Diversion Books.
- ISMAIL S., PALAO F., LAPIERRE M. (2021), *Trasformazione esponenziale: La guida definitiva per trasformare la propria impresa in una organizzazione esponenziale*. Ulrico Hoepli Editore.
- JIMENEZ D., FRANCO I.B., SMITH T. (2021), "A review of corporate purpose: An approach to actioning the Sustainable Development Goals (SDGs)", *Sustainability*, vol. 13, n. 7, pp. 3899.
- LAWTON T.C., DOROBANTU S., RAJWANI T.S., SUN P. (2020), "The implications of COVID-19 for nonmarket strategy research", *Journal of Management Studies*, vol. 57, pp. 1732-36.
- MARCHESE S., GASTALDI L., CORSO M. (2020), "Taming VUCA with Exponential Organizational Models: A Literature Review", In *21st International Continuous Innovation Network (CINet) Conference "Practicing Continuous Innovation in Digital Ecosystems"*, Milan (Italy, September 20-22, pp. 466-479.
- MAYER C. (2018), *"Prosperity: Better Business Makes the Greater Good"*. Oxford: Oxford University Press.

- MAYER C. (2021), "The Future of the Corporation and the Economics of Purpose", *Journal of Management Studies*, vol. 58, n. 3, pp. 887-901.
- MINGIONE M., ABRATT R. (2020), "Building a corporate brand in the digital age: imperatives for transforming born-digital startups into successful corporate brands", *Journal of Marketing Management*, vol. 36, n. 11-12, pp. 981-1008.
- MIRZAEI A., WEBSTER C.M., SIUKI H. (2021), "Exploring brand purpose dimensions for non-profit organizations", *Journal of Brand Management*, vol. 28, pp.186-198.
- NARAYANAN S., DAS J.R. (2022), "Can the marketing innovation of purpose branding make brands meaningful and relevant?", *International Journal of Innovation Science*, vol. 14, n. 3/4, pp. 519-536.
- PATRIOTTA G. (2021), "The Future of the Corporation", *Journal of Management Studies*, vol. 58, n. 3, pp. 879-886.
- POLOTTI S. (2021, March 11), "È di Mylia il miglior prodotto formativo del 2021. Parole di Management. Retrieved April 4, 2023, from <https://www.paroledimanagement.it/e-di-mylia-il-miglior-prodotto-formativo-del-2021/>
- PORTER M.E., KRAMER M.R. (2006), "Strategy and society: the link between competitive advantage and corporate social responsibility", *Harvard Business Review*, vol. 84, n. 12, pp. 78-163.
- POMPA L. (2019), "Exponential Atlases: A Metaphysical Approach to the Organizational Rapid Growth", *International Journal of Business and Management*, vol. 14, n. 4, pp. 143-156.
- POMPA L. (2021), "Growing Thanks to Whom? The Impact of Staff on Demand on Organizational Growth Dynamics: Evidence from Sweden", *International Journal of Economics and Finance*, vol. 13, n. 1, pp. 80-88.
- URDE M. (2013), "The corporate brand identity matrix", *Journal of Brand Management*, vol. 20, n. 9, pp. 742-761.
- URDE M. (2016), "The brand core and its management over time", *Journal of Product & Brand Management*, vol. 25, n. 1, pp. 26-42.
- URDE M., GREYSER S.A. (2016), "The Corporate Brand Identity and Reputation Matrix-The Case of the Nobel Prize", *Journal of Brand Management*, vol. 23, n. 1, pp. 89-117.
- VELOUTSOU C., GUZMAN F. (2017), "The evolution of brand management thinking over the last 25 years is recorded in the Journal of Product and Brand Management", *Journal of Product & Brand Management*, vol. 26, n. 1, pp. 2-12.
- VREDENBURG J., KAPITAN S., SPRY A., KEMPER J.A. (2020), "Brands taking a stand: Authentic brand activism or woke washing? *Journal of public policy & marketing*, vol. 39, n. 4, pp. 444-460.
- YIN R. K. (2017), *Case study research and applications: Design and methods*. Sage publications.
- YOUNGER R., MAYER C., ECCLES R.G. (2020, September), "Enacting purpose within the modern corporation", In *Harvard Law School Forum on Corporate Governance*. Retrieved March 27, 2022, from <https://corpgov.law.harvard.edu/2020/09/02/enacting-purpose-within-the-modern-corporation/>
- WADE M., SHAN J., BJERKAN H., YOKOI T. (2021), "Digital Vortex 2021. Digital disruption in a COVID world. Global Inter for Digital Business Transformation", *IMD, Lausanne, Switzerland*, vol. 24.
- WILLIAMS P., ESCALAS J.E., MORNINGSTAR A. (2022), "Conceptualizing brand purpose and considering its implications for consumer eudaimonic well-being", *Journal of consumer psychology*, vol. 32, n. 4, pp. 699-723

Data Value Chain and Data Ecosystem through digital and traditional tools

LORIS SANTARELLI¹ FEDERICA CECI² MARIANNA SGAMMOTTA³

Abstract

The adoption of technologies based on data utilization and exploitation have led organizations to embrace new method of gathering information and insights. As data gain value throughout their journey from acquisition to usage, organizations must acknowledge each step of the Data Value Chain (DVC). This model, which forms the core of data ecosystem concept, helps organizations to fully unfold the potential of their data. Despite ecosystems literature have progressively gained importance, there is no common agreement on data ecosystem definition and terminology. Moreover, important core concepts such as relationships, roles, resources, or domain of data ecosystem may lack the required depth. The aim of this paper is to deepen our comprehension of the main characteristics of data ecosystems by focusing on their main component: the data value chain. We selected this unique contest since the national park is an attractive setting where digital and non-digital coexist. Indeed, this is an interesting phenomenon as this context shapes a data value chain fuelled by data coming from both traditional tools and advanced digital tool such as IoTs. By relying on the data value chain framework, this paper analyses how the National Park of Abruzzo, Lazio, and Molise managed the configuration of their data ecosystem. We developed the case study through content analysis of open-ended interviews and documental analysis. By analyzing the ecosystem at the micro level, we unpacked the data value chain examining interactions and technologies involved in each phase. We discuss the importance of both face-to-face and digitally mediated interactions along the data value chain. In addition, we found how technologies are implemented in each phase of the value chain and discussed about implications. We contribute to literature by deepening our understanding of concepts that organizations must configure while managing or participating in an ecosystem.

Key words: data ecosystem, data value chain, innovation, knowledge, communication tools, team.

Framing of the research. The ongoing spread and development of technologies are opening up new opportunities for organizations to collaborate, share resources, and operate in an increasing interconnected business environment (Dosi, 1982; Kapoor & Teece, 2021). The adoption of technologies based on data as strategic assets drives organizations into transformations, which may involve digitisations of traditional systems, change in management strategies or in decision making processes (Brynjolfsson & McElheran, 2016; Curry, 2016; Curry & Ojo, 2020; O. D. Watch, 2017). Data are increasingly rising in importance since organizations continuously acquire and exploit them from their context (Alaimo & Kallinikos, 2021). However, these advantages are obviously not immediate. In order to extract value from data, organizations must integrate and model them through specific phases that are described by data value chain framework. The data value chain highlights the activities related to data and technologies allowing organizations to catch value from their owned or acquired data (De Simone et al., 2023; O. Watch, 2017). The data value chain is a model that illustrates how the flow of information create value across a series of step: acquisition, analysis, curation, storage, usage (Curry, 2016). It describes the trajectory data taken from the acquisition to the usage (Curry, 2016; O. D. Watch, 2017). Data value chain has its roots in Porter's value chain (1985), a decision support model for those activities that organisations perform to deliver products or services to markets (Porter, 1985). Today, it is considered as a pivotal point of the future knowledge economy thanks to the opportunities it offers for the digital development of economic sectors (DG Connect, 2013). The huge amount of data is not only owned, but also produced, shared, consumed, and reused from various domains. The data value chain has been developed to analyse the activities related to data and technologies within organisational setting and it is placed to the core level of a data ecosystem (Curry, 2016; De Simone et al., 2023). While referring to data, the term ecosystem refers to a set of actors that generate and share data while interacting with each other (De Simone et al., 2023). This consideration of data as a commodity has led to the emergence of a new environment called data ecosystem (Oliveira et al., 2019; Oliveira & Lóscio, 2018). In this context, the term ecosystem relates to a set of actors that generate and share data while interacting with each other (De Simone et al., 2023).

Since Moore (1993) explored ecosystems in business strategies, the concept gained increasing importance in the academic literature. It is widely accepted that organisations participating the ecosystems can create more value than they

¹ University of Chieti
e-mail: loris.santarelli@unich.it

² University of Chieti
e-mail: f.cecici@unich.it

³ University of Chieti
e-mail: marianna.sgammotta@studenti.unich.it

would have by acting alone: they can foster innovation and they can achieve a position of competitive advantage (Adner & Kapoor, 2010, 2016; Cennamo & Santalo, 2018; Jacobides et al., 2018). Organizations become dependent on each other following their mutual benefit provided by the resources they are exchanging (Cavanillas et al., 2016). Curry et al. (2020, p. 20) described data ecosystem as follow: “a sociotechnical system enabling value to be extracted from data value chains supported by interacting organizations and individuals”. According to (Oliveira et al., 2019) the data ecosystem is a complex network formed by interacting actors that collaborate to find, share, or use data to foster innovation, create value, and support new businesses. Consequently, data ecosystems are composed by different relationships in a network of multiple actors that engage data sharing to contribute to a common purpose or value proposition. Thanks to this network, actors extract value from data value chains (Curry et al., 2022) and therefore they can create new value that no single participant can create (Cavanillas et al., 2016). Within data ecosystems, actors can be organizations or individuals taking part and assuming different roles. Key actors include data suppliers and consumers, data and technology providers, marketplace, and end users (Curry et al., 2022).

After its emergence, the ecosystem is supported by continuous interactions among actors who are engaged in data sharing activities. This could lead the ecosystem to a position of advantage within its sector or market (Blijleven et al., 2013). This stage is characterized by significant changes. Academic literature describes these dynamics as adjustments occurring from the inside or influences exerted from outside the ecosystem (Daymond et al., 2023). According to Holgersson et al. (2022) technological innovations and new style of management are two important drivers in ecosystem. Technological innovations ‘enable or are enabled’ ecosystems’ (Holgersson et al., 2022, p. 2). This implies that a new technology can profoundly influence the entire ecosystem. It may cause it to contract, expand, or undergo broader evolution or collapse. According to the authors, new style of management could impact the ecosystem in terms of coordination costs, level of collaborations, and further innovation. These two drivers model the interconnections and the design of the ecosystem (Holgersson et al., 2022b; Kapoor, 2018). As a consequence, interconnections between actors is ensured by the configuration of technologies and the role assumed by actors. As they can assume various roles with different functions, the ecosystem may be orchestrated by a keystone actor (who define and shape the trajectory of the ecosystem) or it could present a distributed configuration between members (Gawer, 2022; Kapoor & Klueter, 2021).

Based on interconnections and the roles of participants, these actors can develop a wide variety of different relationships and levels (Cavanillas et al., 2016; Curry, 2016). Accordingly, ecosystem literature considers three level of ecosystem: core value chain, extended value chain, and big data ecosystem (Cavanillas et al., 2016; Curry, 2016; Curry & Ojo, 2020). The core value chain represents the central element of a data ecosystem. It categorizes the value-adding activities of organizations, allowing them to extract value from their data. The core value chain models the interconnection between direct data suppliers and the data value distribution channels. (De Simone et al., 2023). The second level of the framework is the extended value chain. At this level actors have the potential to influence market dynamics. They are data and technology providers, data marketplace, and data end users (De Simone et al., 2023). Finally, the macro level of the framework is formed by the big data ecosystem. It is a data environment ‘supported by a community of interacting organisations and individuals’ (Curry, 2016, p. 5). According to the author, the big data ecosystems can surround organisations, technology platforms, or entire sectors.

Purpose of the paper. Despite ecosystems literature have progressively gained importance since Moore’s work (1993), our understanding of data ecosystem concept can be deepened (Oliveira et al., 2019). For example, there is no common agreement on data ecosystem terminology. Oliveira et al. (2019) highlighted the non-existence of a commonly accepted definition. In addition, several works often omit or only address the surface of important core concepts such as relationships, roles, resources, or domain of data ecosystems (Åkerman et al., 2018; Gelhaar et al., 2021; Oliveira et al., 2019). In his review, Heinz (Heinz et al., 2022) found a high degree of fragmentation and suggested the need for improving structural clarity of future research. Following, our research question: how do organizations configure the data value chain in a context where digital and non-digital coexist?

Thereby, the aim of this paper is to define and deepen our comprehension of the main characteristics of a data ecosystem by focusing on the core component of the ecosystem: the data value chain. By delving into the data value chain, at the micro level of the ecosystem (Curry, 2016), we have taken into analysis a singular data ecosystem characterized by actors interconnected by different interactions and with (or without) various types of technologies. By unpacking the data value chain, our purpose is to identify the most frequent interactions and the most used tools in each step of the value chain (data acquisition, data analysis, data curation, data storage, and data usage). This examination allows us to understand how actors within ecosystems behave in a complex context, how they interact and collaborate where digital and non-digital elements coexist.

Methodology. To address our aim, we studied a complex data ecosystem comprised of different kinds of interactions: face-to-face and digitally mediated, involving various tools, both technological and traditional. We conducted a qualitative investigation of data and information sharing mechanisms within the National Park of Abruzzo, Lazio and Molise. The Park manages the complex wildlife of central Italy through dedicated efforts and numerous activities, continuously supported by modernization initiatives. Today PNALM is sustained by network of strong personal relationships and communication, fuelled by continuous face-to-face interactions. Additionally, a well-established use of communication tools and ICT regularly supports their activities, such as data collection, data sharing, storage, analysis, and, more generally, information exchange of various typologies. In other words, their network is composed by a huge flow of information sharing within the organisation, occurring through different tools. To ensure the safeguarding of the natural environment and wildlife numerous organizational areas are engaged in activities. These activities include surveillance, data collection as well as other tasks such as geolocalisation, genetic material collection, drafting of

sightings cards. They are all supported by the use of technologies such as radio collars, app, database, and other ITC.

The national park is an attractive setting in which members perform their activities in a context where digital and non-digital coexist. This is interesting since our context shapes the data value chain fuelled by data coming from both traditional tools and advanced digital tool such as IoTs. Moreover, the park is involved in a continuous modernization of its processes and initiatives, adopting and testing new technologies. This innovation process makes it visible our phenomenon of interest. It could be directly observed as it provides high visibility of the types of interactions and the technologies supporting the data ecosystem.

We conducted a documental analysis about information such as the organization's initiatives and collaboration, the involved actors, their activities, adopted technologies, the organizational structure, their future projects, and events. After conducting the analysis, we collected primary data with 16 open-ended interviews. The questionnaire was focused on monitoring activities, technologies, personal relationships, data sharing, external collaborations, and final questions. We interviewed multiple actors within PNALM belonging to different organization's sectors: direction, scientific sector, communication sector, rangers, and a tech company providing IoT technologies. The first interview lasted 2 hours and the subsequent approximately 1 hour. All the interviews conducted have been recorded, transcribed, and coded in order to identify all the relevant topics and develop the case study. Thereafter, we analysed the interviews with content analysis method. It involved three phases: the pre-coding phase has been carried out starting from the development of a dictionary structured with the most relevant concept found. This was a preliminary analysis where we highlighted the most frequent keywords from the interviews looking for relations with the literature (Creswell, 2014). In the coding phase, we deeply analysed the interviews, selected parts of the text, and assigned them to nodes. The selected nodes have been split into sub-nodes based on the contents. 10 variables were identified following the organizational literature and coded into nodes using NVivo software. We based our methodological approach following (Gioia et al., 2013). In order to assign the type of interactions and tools to the correct phase of the value chain, we assigned the identified nodes to the corresponding phase of the value chain. For example, PNALM's activities, such as wildlife geolocalisation, genetic material collection, and drafting sightings cards, are clearly associated with the first phase of the value chain: data acquisition. We applied the same logic for the other phases.

Results. Firstly, this paper analyzed the types of interactions that support the interconnections along all the steps of the data value chain. We found that each step is characterized by a different occurrence of face-to-face and digitally based interactions. Major occurrences of face-to-face interactions were observed during data acquisition and data usage. This means that actors tend to work and collaborate together live, mostly sharing data or information face-to-face in this phase. In contrast, data analysis and curation bring a slight improvement in the use of digital technologies. Subsequently, in data storage phase there has been a good balance between the two types of actor interactions. Indeed, we found that data travel more through ICTs in order to be stored in the database. The exception is mainly represented by the ongoing use of paper sheets. In the data usage phase, we observed a predominance of face-to-face interactions within the organization. The main reasons why traditional means are still used may include: lack of enabling technologies in some areas (for example, where internet connectivity is unavailable or has a limited signal). Additionally, critical issues encountered in the development of a dedicated platform contributed to this reliance on traditional methods.

Secondly, we focused on the typology of the tools used for each phase of the value chain. We found a different use of digital and traditional tools for each step of the value chain. While digital tools such as IoTs or GPS-based technologies are used for data collection activities, the other phases are characterized by a major use of database and analysis software. Turning to traditional tools, we found paper sheets to be the most commonly used tool in our research context. Finally, we identified the types of activities performed by the actors of each step of the value chain. These findings are part of the attempts to construct a link between knowledge management and data value chain.

Research limitations. As this paper is based on a single case study, it may limit the boundary of findings generalizations. This methodology could be replicated to guarantee improved results by multiplying the patterns found, ensuring the enhancement of robustness of the findings (Yin, 2003). In addition, we focused our study on a unique context where digital and non-digital coexist. Thus, further research may be replicated in other contexts with different configurations of ecosystem components or resources. There may be contexts where other technologies have been adopted or where different styles of management are employed. Moreover, in our setting, the core of the ecosystem is completely internal to our organization. Other research may expand our model by selecting an interorganizational's value chain. For example, a decentralized configuration might be studied thanks to external collaboration.

Managerial implications. Thanks to our research, organizations could know how to improve and manage the ecosystem they are involved in. By knowing how they are structured, organizations can exploit the potential advantages of adopting the right configuration of interactions and tools. In addition, they can perform their activities in a manner that ensures data to be managed throughout the entire data value chain. Organizations can anticipate and avoid criticalities such as lack of enabling technologies, communication, and information losses.

This study highlights the significance of both face-to-face and digitally based interactions along all phases of the value chain. Organizations can facilitate the data sharing process and the exploitation of the value that could emerge from it. They must implement the right strategies and configurations in order to ensure a continuous flow of interactions within the ecosystem.

Regarding to technologies, since each phase is characterized by the use of specific tools, organizations can adapt their technological configuration following the value chain. They can foster the adoption of the right technologies for the

right phase of the value chain. For example, we found major problems in data collection step. Organizations may solve the problems emerging in the development of their platform by enhancing collaborations with the app developer. Finally, organizations may consider the development of a centralized database along the value chain to avoid information losses and to allow all the members to have access to data at the right moment they need them.

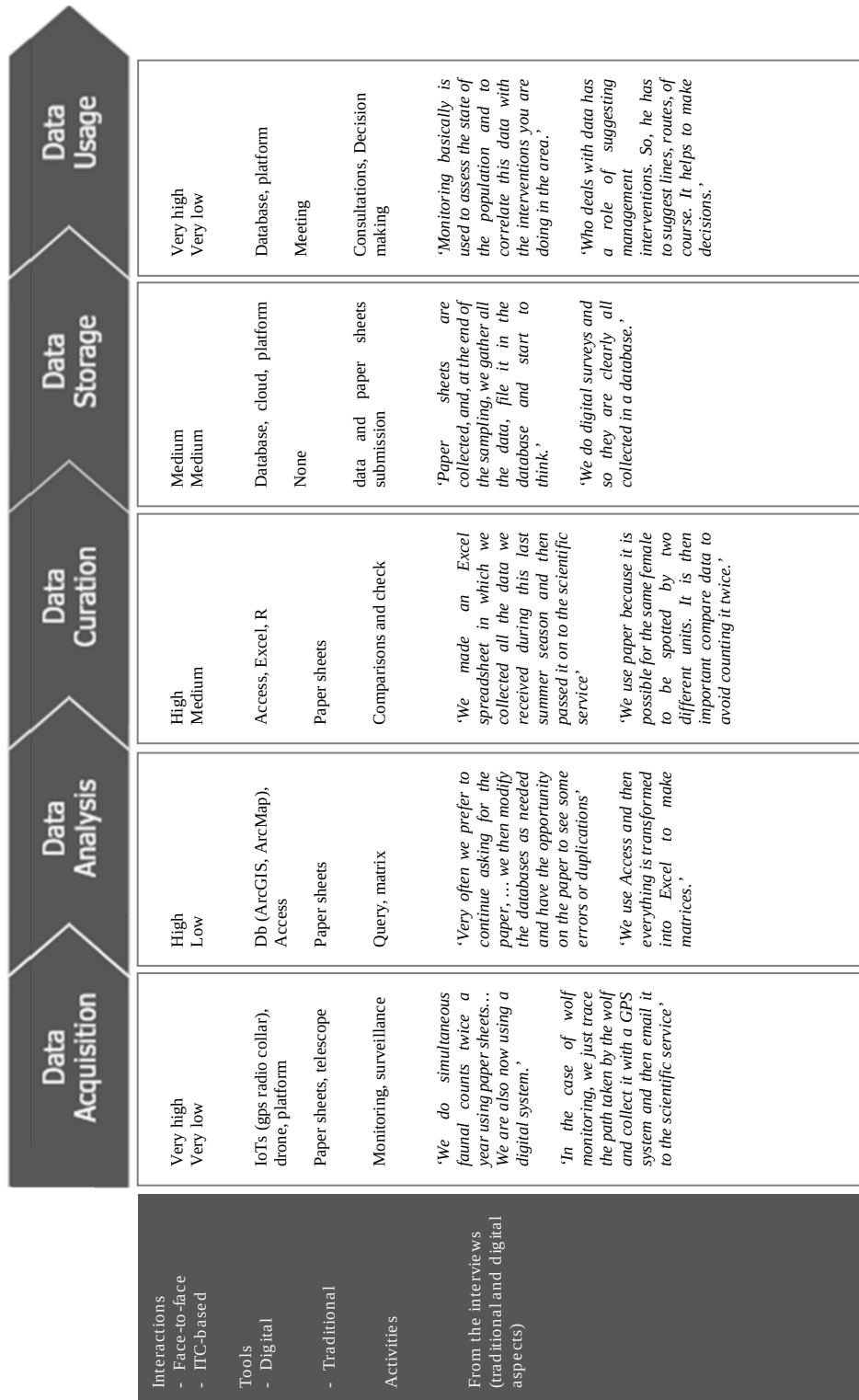


Figure 1 - Data Value Chain from Curry, (Curry, 2016)
Scale: very low, low, medium, high, very high

Originality of the paper. Data value chain and data ecosystem are two fairly novel topics that are still under explored in academic literature. Our investigation highlights the types of interactions and the technology adopted along the value chain modeled in our context. This study found several challenges and criticalities in the configuration of an ecosystem characterized by both digital and traditional tools. By acknowledge our findings, organizations could take advantages while modeling their value chain, in terms of technology adoption, human resources organizations, and decision-making processes.

References

- ADNER R., KAPOOR R. (2010), "Value creation in innovation ecosystems: How the structure of technological interdependence affects firm performance in new technology generations", *Strategic Management Journal*, vol. 31, n. 3, pp. 306-333.
- ADNER R., KAPOOR R. (2016), "Innovation ecosystems and the pace of substitution: Re-examining technology S-curves", *Strategic Management Journal*, vol. 37, n. 4, pp. 625-648.
- ÅKERMAN M., LUNDGREN C., BÄRRING M., FOLKESSON M., BERGGREN V., STAHRÉ J., ENGSTRÖM U., FRIIS M. (2018), "Challenges Building a Data Value Chain to Enable Data-Driven Decisions: A Predictive Maintenance Case in 5G-Enabled Manufacturing", *Procedia Manufacturing*, vol. 17, pp. 411-418.
- ALAIMO C., KALLINIKOS J. (2021), "Managing by Data: Algorithmic Categories and Organizing", *Organization Studies*, vol. 42, n. 9, pp. 1385-1407.
- BLIJLEVEN V., VAN ANGEREN J., JANSEN S., BRINKKEMPER S. (2013), "An evolutionary economics approach to ecosystem dynamics", *IEEE International Conference on Digital Ecosystems and Technologies*, pp. 19-24. <https://doi.org/10.1109/DEST.2013.6611323>
- BRYNJOLFSSON E., MCELHERAN K. (2016), "The rapid adoption of data-driven decision-making", *American Economic Review*, vol. 106, n. 5, pp. 133-139.
- CAVANILLAS J.M., CURRY E., WAHLSTER W. (2016), *New Horizons for a Data-Driven Economy A Roadmap for Usage and Exploitation of Big Data in Europe*.
- CENNAMO C., SANTALO J. (2018), *Generativity Tension and Value Creation in Platform Ecosystems*. <https://ssrn.com/abstract=3289574>
- CRESWELL J. (2014), *Research design - Qualitative, quantitative, and mixed method*.
- CURRY E. (2016), "The big data value chain: Definitions, concepts, and theoretical approaches", In *New Horizons for a Data-Driven Economy: A Roadmap for Usage and Exploitation of Big Data in Europe* (pp. 29-37), Springer International Publishing. https://doi.org/10.1007/978-3-319-21569-3_3
- CURRY E., OJO A. (2020), "Enabling Knowledge Flows in an Intelligent Systems Data Ecosystem", In *Real-time Linked Dataspaces* (pp. 15-43), Springer International Publishing. https://doi.org/10.1007/978-3-030-29665-0_2
- CURRY E., SCERRI S., TUIKKA T. (2022), *Data Spaces Design, Deployment and Future Directions*.
- DAYMOND J., KNIGHT E., RUMYANTSEVA M., MAGUIRE S. (2023), "Managing ecosystem emergence and evolution: Strategies for ecosystem architects", *Strategic Management Journal*, vol. 44, n. 4, pp. O1-O27.
- DE SIMONE C., CECI F., ALAIMO C. (2023), *Data Ecosystem and Data Value Chain: An Exploration of Drones Technology Applications* (pp. 203-218), https://doi.org/10.1007/978-3-031-15770-7_13
- DG CONNECT. (2013), *A European strategy on the data value chain*.
- DOSI G. (1982), *Technological paradigms and technological trajectories A suggested interpretation of the determinants and directions of technical change*.
- GAWER A. (2022), "Digital platforms and ecosystems: remarks on the dominant organizational forms of the digital age", *Innovation: Organization and Management*, vol. 24, n. 1, pp. 110-124.
- GELHAAR, GROB, & OTTO. (2021), *A taxonomy for data ecosystem*. University of Hawai'i at Manoa.
- GIOIA D.A., CORLEY K.G., HAMILTON A.L. (2013), "Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology", *Organizational Research Methods*, vol. 16, n. 1, pp. 15-31.
- HEINZ D., BENZ C., FASSNACHT M., SATZGER G. (2022), "Past, Present and Future of Data Ecosystems Research: A Systematic Literature Review", *Association for Information Systems*. <https://doi.org/10.5445/IR/1000148750>
- HOLGERSSON M., BALDWIN C.Y., CHESBROUGH H., MARCEL M.L.A. (2022a), "The Forces of Ecosystem Evolution", *California Management Review*, vol. 64, n. 3, pp. 5-23.
- HOLGERSSON M., BALDWIN C.Y., CHESBROUGH H., MARCEL M.L.A. (2022b), "The Forces of Ecosystem Evolution", *California Management Review*, vol. 64, n. 3, pp. 5-23.
- JACOBIDES M.G., CENNAMO C., GAWER A. (2018), "Towards a Theory of Ecosystems", In *Strategic Management Journal* (Vol. 39).
- KAPOOR R. (2018), "Ecosystems: broadening the locus of value creation", *Journal of Organization Design*, vol. 7, n. 1.
- KAPOOR R., KLUETER T. (2021), "Unbundling and managing uncertainty surrounding emerging technologies", *Strategy Science*, vol. 6, n. 1, pp. 62-74.
- KAPOOR R., TEECE D.J. (2021), "Three faces of technology's value creation: Emerging, enabling, embedding", In *Strategy Science* (Vol. 6, Issue 1, pp. 1-4), INFORMS Inst.for Operations Res.and the Management Sciences. <https://doi.org/10.1287/STSC.2021.0124>
- MOORE J.F. (1993), "Predators and Prey: A New Ecology of Competition", *Harvard Business Review*.
- OLIVEIRA M.I.S., BARROS LIMA G. DE F., FARIAS LÓSCIO B. (2019), "Investigations into Data Ecosystems: a systematic mapping study", *Knowledge and Information Systems*, vol. 61, n. 2, pp. 589-630.
- OLIVEIRA M.I.S., LÓSCIO B.F. (2018, May 30), "What is a data ecosystem?", *ACM International Conference Proceeding Series*. <https://doi.org/10.1145/3209281.3209335>
- PORTER M. (1985), *Competitive advantage: Creating and sustaining superior performance*. New York: Free Press.
- WATCH O. (2017), *The Data Value Chain: Moving from Production to Impact*. <https://data.unicef.org/>
- WATCH O. D. (2017), *The data value chain: moving from production to impact*

Web 3.0: il punto di vista dei manager sulle opportunità e le sfide del Metaverso e degli NFT

CHIARA BARTOLI¹ FRANCESCO FASANO² FRANCESCO CAPPA³ PAOLO BOCCARDELLI⁴

Abstract

Lo studio esamina il punto di vista dei manager rispetto alle opportunità e alle sfide derivanti dall'adozione delle tecnologie del Web 3.0, con particolare riguardo al metaverso e agli NFT. Lo studio adotta un approccio mixed and method su un panel di 100 manager PMI e grandi imprese operanti in Italia e rappresentative di oltre 20 settori, sia nell'industria che nei servizi. Dal lavoro emerge che i manager considerano il metaverso e gli NFT come tecnologie che trovano numerose applicazioni di business e che sono da esplorare in quanto capaci di essere una risorsa distintiva per le imprese e una fonte di innovazione per la generazione di nuovo valore intangibile di mercato. Lo studio evidenzia inoltre le principali sfide che sono legate all'adozione di tali tecnologie e che attengono al know-how, alle risorse e alla sicurezza.

Keyword: web 3.0, metaverse, NFT, innovation, strategy, manager behavior, CEO.

Introduzione e obiettivi della ricerca. Il Web 3.0 rappresenta un ambiente caratterizzato dalla integrazione di tecnologie basate sui Distributed Ledger, come blockchain, che consentono comunicazioni dirette e sicure tra utenti, l'archiviazione decentralizzata dei dati e la creazione di reti peer-to-peer (Garnett, 2024).

Il Web 3.0 possiede la capacità di amplificare l'esperienza degli utenti perché consente di vivere mondi virtuali aumentati, di creare alti livelli di coinvolgimento e di immersività, e di scambiare oggetti digitali attraverso i sistemi blockchain. L'adozione delle tecnologie del Web 3.0 ha subito un'accelerazione durante il periodo della pandemia da COVID-19 che si deve alla accresciuta integrazione delle tecnologie digitali negli spazi di vita e di consumo delle persone (Sheth, 2020).

Le caratteristiche delle tecnologie del Web 3.0 anticipano come queste potranno generare profondi cambiamenti nelle modalità di gestione dei processi di innovazione da parte delle imprese (Acciarini et al., 2023; Lumineau et al., 2021; Tapscott and Tapscott, 2017). Tra queste, emerge la rilevanza del metaverso come sistema esperienziale di continuità tra il mondo reale e quello virtuale (Floridi, 2022; Hennig-Thurau et al., 2022). Si stima che nel 2024 saranno venduti oltre 14,3 milioni di dispositivi per la realtà virtuale al livello globale e che il fatturato globale del mercato del metaverso raggiungerà i 678,80 miliardi di dollari nel 2030, fino a sostituire gli attuali social media (Statista, 2023).

Nell'ambito del Web 3.0, rilevanti sono anche i Non Fungible Tokens (NFT), i quali si stanno affermando come game changer in numerosi settori. Infatti, a fine 2022 risultano essere stati scambiati oltre 9 milioni di NFT a livello mondiale, per un valore di quasi 2 miliardi di dollari (Cryptonomist, 2023).

Sebbene si stia assistendo ad una crescita della rilevanza di business delle tecnologie del Web 3.0, e che si deve alla loro capacità di incidere sui sistemi di generazione del valore delle imprese e di agire come motori di sull'evoluzione futura delle industrie (Kraus et al., 2022), tuttavia gli studi sulle tecnologie del Web 3.0, ed in particolare su NFT e metaverso, sono ancora limitati ed hanno una prevalente natura teorica. E' riconoscendo questo gap che il presente studio mira ad approfondire la comprensione circa gli impatti di business del metaverso e degli NFT, cogliendo il punto di osservazione dei manager che hanno adottato o che adotteranno in futuro questa tecnologia.

Lo studio intende non solo aggiungere nuova conoscenza teorica circa il fenomeno del Web 3.0 e sui suoi impatti di business, ma anche fornire una visione d'insieme circa le principali opportunità e sfide che sono legate all'adozione di tali tecnologie, al fine di guidare le aziende che ancora non le hanno adottate verso la loro integrazione nei propri modelli organizzativi.

¹ LUISS

e-mail: cbartoli@luiss.it

² Università della Calabria

e-mail: francesco.fasano@unical.it

³ LUISS

e-mail: fcappa@luiss.it

⁴ LUISS

e-mail: pboccard@luiss.it

Background teorico

La rilevanza manageriale del metaverso

Il metaverso rappresenta una rete di mondi virtuali 3D e immersivi in cui le persone interagiscono come avatar tra loro e con l'ambiente, come nel reale ma senza alcuna limitazione fisica (Giang Barrera and Shah, 2023). Il termine metaverso è stato utilizzato per la prima volta nel romanzo *Show Crash* di Neal Stephenson per descrivere il mondo virtuale dell'era del post internet (Lee et al., 2022).

Il termine ha tuttavia acquisito accresciuta rilevanza in corrispondenza con l'annuncio nel 2021 da parte di Facebook del coinvolgimento in questa tecnologia, con la sua trasformazione in Meta (Kraus et al., 2022; Polyviou and Pappas, 2022). Il metaverso non è un'idea nuova, trova infatti i suoi fondamenti nei mondi virtuali del Web 2.0 che negli anni 2000 hanno consentito agli utenti di sperimentare mondi virtuali (es. *Second Life*) ed interagire con i loro avatar (Dwivedi et al., 2022; Park and Kim, 2022).

Tuttavia, il metaverso presenta delle caratteristiche peculiari che lo distinguono dalle esperienze precedenti e che sono l'essere un business scalabile (Dwivedi et al., 2022), avere una infrastruttura fisica basata su tecnologia blockchain che abilita la possibilità di produrre e scambiare prodotti digitali, essere caratterizzato dalla possibilità di integrare numerose tecnologie digitali 4.0, come la realtà virtuale (VR), la realtà aumentata (AR), la realtà mista (MR), il 3D e le tecnologie di computer vision unitamente ai sistemi di connettività avanzati (Ali et al., 2023; Giang Barrera and Shah, 2023). Questo consente di arricchire l'ambiente digitale di contenuti coinvolgenti, e raggiungere elevati livelli di immersione (Park and Kim, 2022) di presenza fisica nel virtuale e di interazione sociale (Dionisio et al., 2013; Giang Barrera and Shah, 2023; Hennig-Thurau et al., 2022).

Questi aspetti di rottura rispetto alle tecnologie solo virtuali consentono di vedere il metaverso come una applicazione tecnologica in grado di rivoluzionare le modalità di relazione di mercato in diversi settori (Dwivedi et al., 2022; Hollensen et al., 2022; Park and Kim, 2022) come l'intrattenimento (es. le piattaforme Roblox, Sandbox e Decentraland), il retail e la moda dove il metaverso trova numerose applicazioni come vetrina e spazio di consumo e promozionale per accrescere l'esperienza dei consumatori con i brand (Joy et al., 2022), oltre all'education (Lee et al., 2022) e al turismo (Gursoy et al., 2022).

La rilevanza manageriale degli NFT

Gli NFT (Non Fungible Token) vengono definiti come beni digitali che sono stati autenticati utilizzando la tecnologia blockchain (Zelazsko, 2024). Gli NFT permettono quindi di generare "gemelli digitali" di prodotti fisici con un corredo di informazioni identificative delle transazioni che sono avvenute sin dalla loro creazione su tecnologia blockchain (Colicev, 2022). Ciò consente di aggiungere distintività ai prodotti fisici (Hofstetter et al., 2022) rafforzandone il valore simbolico (Colicev, 2022), ma anche di creare asset interamente digitali che si aggiungono al portafoglio di prodotti fisici delle imprese (Hakkarainen and Colicev, 2023). Si tratta di una possibilità di innovazione che le imprese, soprattutto nel segmento del lusso, stanno già esplorando (ad esempio le collezioni Bulgari o Gucci).

Nel settore del collezionismo, gli NFT hanno conosciuto una decisa espansione a livello mondiale a partire dal 2021 (Nadini et al., 2021) e trovano oggi numerose applicazioni anche nelle industrie creative e dello sport (Wilson et al., 2022), nel settore degli eventi e del turismo (Zhang, 2022). Nel settore del fashion, le imprese hanno iniziato ad integrare gli NFT negli ambienti del metaverso (Joy et al., 2022) accrescendo il valore dei brand attraverso la creazione di community e la partecipazione a eventi esclusivi (Zhang, 2022). Gli NFT trovano anche applicazione nei servizi medici e della finanza (Ali et al., 2023), ma anche nei sistemi di tracciamento dei prodotti lungo tutta la value chain e come strumento di rafforzamento della proprietà intellettuale (Treiblmaier and Sillaber, 2021).

Dai contributi di letteratura manageriale emerge come gli NFT rappresentino degli abilitatori di valore di mercato, aprendo le imprese a nuove modalità di creazione e vendita dei prodotti (Zhang, 2022) modificando l'infrastruttura che presiede alle transazioni e alla determinazione dei prezzi (Dowling, 2022) creando nuove relazioni con gli stakeholder e di mercato (Nadini et al., 2021; Wilson et al., 2022).

Inoltre, facendo leva sui sistemi di decentralizzazione abilitati da blockchain, gli NFT mostrano anche la capacità di trasformare i modelli di mercato tradizionali a vantaggio di nuovi formule disintermedate, o reintermedate da attori digitali (Hofstetter et al., 2022).

Nonostante le potenzialità della tecnologia di riconfigurare i mercati esistenti e di crearne di nuovi (Wilson et al., 2022), tuttavia gli NFT rappresentano ancora una tecnologia in fase nascente, e numerose sono le incertezze legate alla loro adozione, tra cui il livello di sviluppo della tecnologia e la sua interoperabilità, oltre a fattori legati alla sua sicurezza (Giang Barrera and Shah, 2023).

Dall'analisi della letteratura manageriale, emerge che gli studi su NFT e metaverso sono ancora limitati e mancano soprattutto contributi che approfondiscano il punto di vista dei manager rispetto all'adozione delle due tecnologie.

Il Disegno di ricerca. In coerenza con gli obiettivi del lavoro, volto ad approfondire il punto di vista manageriale sul metaverso e sugli NFT, è stato scelto un approccio mixed and method quali-quantitativo all'indagine, mediante la somministrazione di una survey a domande chiuse ed aperte che ha coinvolto un panel di 103 manager rappresentativi di oltre 20 diversi settori, e appartenenti a PMI e grandi imprese.

La survey è stata svolta in Italia e ha coinvolto sia manager che hanno adottato, sia coloro che non hanno ancora adottato le tecnologie oggetto di indagine.

Nelle domande aperte è stato richiesto ai partecipanti di condividere i vantaggi e le sfide legate rispettivamente al metaverso e agli NFT. Le risposte aperte sono state analizzate attraverso modelli di analisi testuale software assistiti

mediante il programma T-LAB Plus (versione 10.1.2). Sono state effettuate analisi di parole chiave, di co-occorrenza e di associazione di parole, considerando come parole centrali gli “NFT” e il “metaverso”. I risultati sono stati rappresentati in forma di ego-network, dove la grandezza del cerchio mostra il maggiore numero occorrenze di lemmi di parole nel testo, mentre la dimensione del collegamento indica la maggiore vicinanza tra la parola chiave centrale e quella posta nel raggio del radiale. Attraverso le domande chiuse del questionario sono state analizzate le principali ragioni per cui le aziende dovrebbero investire nel metaverso e negli NFT. Le risposte quantitative sono state elaborate statisticamente utilizzando Stata (versione 17) e sono state rappresentate sottoforma di statistiche descrittive.

Analisi dei risultati

Risultati qualitativi

Una prima analisi dei risultati qualitativi sulle parole chiave all'interno del corpus, permette di evidenziare che queste sono, oltre a “Metaverse” (N=44) e “NFT” (N=24), anche “Mass adoption” (N=16), “Obstacle” (N=12) e “Business Model” (N=10).

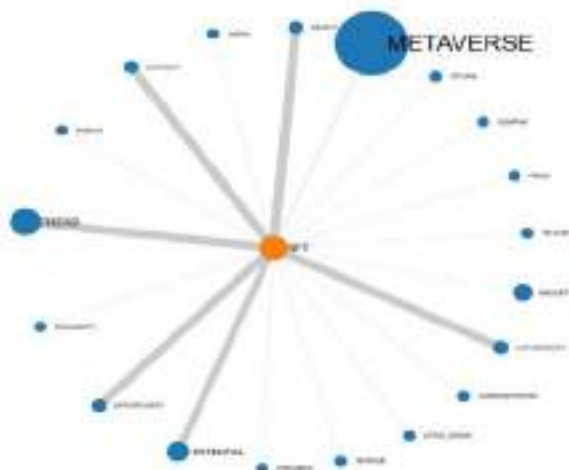
L'ego-network relativo alla parola chiave “metaverso” mostra che il termine è associato con maggiore forza ai termini “mass adoption”, “obstacle”, “technology”, “security” e “investment”. Questi risultati sottolineano la rilevanza degli aspetti che sono ritenuti più critici per i manager

Figura 1. Ego-network per termine “metaverse”



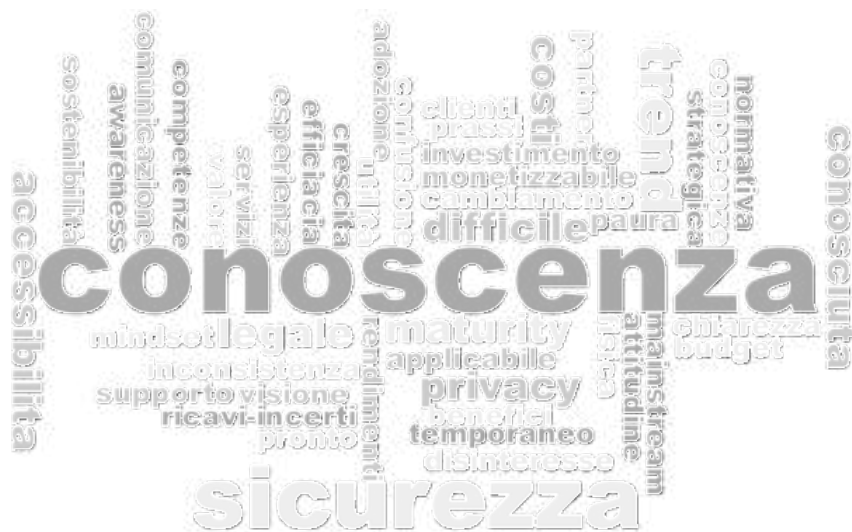
Dall'analisi delle co-occorrenze relative agli “NFT” nel corpus si evince che il termine “NFT” è stato associato più spesso ai termini “trend”, “interest”, “opportunity”, “potential” e “object”. Questo rileva che per il metaverso il panel rileva non soltanto termini che attengono alle criticità della tecnologia ma anche aspetti che ne mettono in risalto i vantaggi di mercato.

Figura 2. Ego-network per termine “NFT”



Inoltre i risultati dell'analisi delle risposte relative alle sfide del metaverso fa emergere la priorità assegnata al lemma "conoscenza", seguita dal lemma "sicurezza". La figura 3 mostra la nuvola di parole relative alle sfide del metaverso.

Figura 3. Word cloud relativo alle risposte sulle sfide del Metaverso e NF



Risultati quantitativi

Per quanto attiene ai primi risultati quantitativi, riguardo al metaverso, circa un terzo dei rispondenti ha già sperimentato il metaverso, e un quarto ha intenzione di farlo in futuro, mentre meno della metà non lo ha ancora sperimentato. Inoltre, emerge un maggiore interesse verso l'adozione della tecnologia del metaverso in alcune aree chiave, quali il marketing, la R&S, e i processi di produzione.

I risultati dell'indagine mostrano anche oltre i due quarti dei manager che hanno pianificato lo sviluppo di nuove soluzioni nel metaverso ritengono di voler investire nell'accrescimento delle skills dei dipendenti rispetto a questa tecnologia, individuando anche le competenze interne che saranno necessarie alle imprese per avviare progetti nel metaverso.

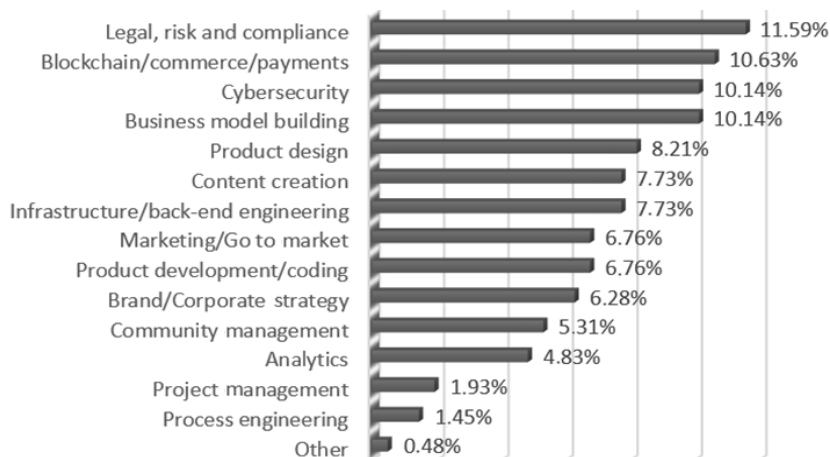
Riguardo alla propensione all'investimento dei manager, il 42% degli intervistati ha dichiarato che investirà sicuramente o probabilmente in soluzioni per il metaverso, mentre il 43% è indeciso e solo il 15% non intende investire. Oltre il 40% degli intervistati ritiene inoltre che il tasso di crescita medio del mercato del metaverso, in termini di ricavi previsti nei prossimi 10 anni, sarà superiore al 40%. Tuttavia, l'80% dei manager/CEO non prevede di investire più del 5% del proprio budget disponibile in progetti di metaverso nel medio termine.

Tra coloro che intendono investire nel metaverso, le principali aree di applicazione in cui si concentrerebbero sono: a) creazione di esperienze immersive per i propri clienti; b) attività di formazione; c) campagne o iniziative di marketing; e d) riunioni aziendali virtuali.

Inoltre, i settori che, secondo gli intervistati, saranno maggiormente interessati dal fenomeno del metaverso sono a) l'istruzione e formazione, b) l'intrattenimento, c) i media e notizie, d) il commercio al dettaglio, e) la produzione avanzata.

Sotto il profilo delle criticità, i manager si soffermano sull'incertezza del ROI degli investimenti di metaverso e quindi sulle reali potenzialità di mercato del metaverso. Un altro aspetto rilevante è la mancanza di competenze specifiche e i problemi di sicurezza relativi alla gestione dei dati (fig. 4).

Figura 4. competenze che i manager ritengono necessarie per la realizzazione di una strategia relativa al metaverso.



Per quanto riguarda gli NFT, il 46% degli intervistati ritiene rappresentino un trend da esplorare. Inoltre, le principali aree che i manager vedono di maggior sviluppo per gli NFT sono la tutela intellettuale, il collezionismo, e il marketing.

Secondo i manager del panel, sebbene si tratti di un mercato di nicchia, gli NFT rappresentano una significativa opportunità di crescita dei ricavi e hanno già dimostrato di avere un potenziale di sviluppo in diversi settori. Inoltre il loro valore potrebbe aumentare in seguito ad una loro adozione mainstream. Tuttavia, circa i 2/5 degli intervistati non considerano i NFT una tecnologia esplorare e su cui investire, poichè il mercato è ancora troppo volatile e quindi il loro valore di business si mostra ancora limitato.

Per quanto riguarda gli aspetti normativi, solo il 17% degli intervistati ritiene che i governi stiano agendo in modo adeguato rispetto alla regolamentazione del metaverso, mentre il 63% ritiene che gli attuali livelli di regolamentazione non siano sufficienti. Secondo questi manager le aree che dovrebbero essere regolamentate nel campo del metaverso riguardano principalmente la sicurezza informatica, l'istruzione e la formazione, le transazioni economiche e la relativa tassazione, nonché il comportamento sociale ed etico per prevenire implicazioni psicosociali potenzialmente dannose.

Discussioni e conclusioni. *I risultati delle indagini qualitative e quantitative dello studio forniscono informazioni rilevanti rispetto al punto di vista dei manager sul metaverso e sulle NFT.*

Per quanto riguarda in particolare gli NFT, il bisogno di autenticità è visto come un driver chiave per l'adozione degli NFT. Questo suggerisce che gli NFT potrebbero innovare significativamente i modelli di business. Infatti, questa tecnologia può essere utilizzata per rafforzare gli asset intangibili di un'azienda, rendendo unica la sua offerta. Questo aspetto è particolarmente importante tenendo in considerazione una visione basata sulle risorse, secondo la quale l'unicità delle risorse delle aziende rappresenta un importante motore di creazione di valore (Barney et al., 2001). Pertanto, gli NFT consentono alle aziende di preservare i loro segni identificativi sul mercato, attraverso il rafforzamento del copyright, garantendo in tal modo la preservazione del loro valore interno.

I manager ritengono inoltre che sia il metaverso sia gli NFT rappresentino strumenti importanti per la creazione di valore per i clienti, attraverso strategie di differenziazione che fanno leva sulla creazione di oggetti digitali. Ciò potrebbe, a sua volta, migliorare le relazioni tra i consumatori e le marche, e generare impatti positivi sui ricavi dell'azienda.

Infine, l'analisi evidenzia le principali sfide che sono legate all'adozione delle due tecnologie, e che riguardano principalmente gli investimenti, la conoscenza, le competenze e la sicurezza.

Nonostante l'enorme potenziale, i manager hanno sottolineato la sfida relativa alla mancanza di conoscenza di questi due fenomeni e il fatto che non ne sono ancora chiare le modalità di utilizzo, e ciò potrebbe limitarne la crescita nei livelli di adozione.

I risultati mostrano anche che, sebbene i manager siano disposti a investire nel metaverso e nelle soluzioni NFT, essi ritengono anche che non siano ancora tecnologie mainstream, e questo ne rende incerti i ritorni futuri sugli investimenti. Questo suggerisce che gli investimenti futuri sulle due tecnologie saranno limitati fino a quando il fenomeno non si svilupperà su scala più ampia. È interessante inoltre notare che alcuni manager hanno sostenuto che essere early adopter in questo settore potrebbe essere rischioso, mentre i late adopter potrebbero avere il vantaggio di evitare gli errori che altri avranno già commesso.

Un altro aspetto rilevante che è legato alle sfide, riguarda la conoscenza della tecnologia stessa e la necessità di competenze di alto livello per sfruttare appieno il potenziale di queste due tecnologie. I manager considerano quindi il fattore umano come un driver nell'adozione delle due tecnologie emergenti, e questo implica assegnare rilevanza alla formazione delle risorse umane al fine di aumentare la capacità organizzativa di fare leva su questa tecnologia, sfruttandone tutte le opportunità di mercato.

Implicazioni teoriche e manageriali. *I risultati dello studio forniscono importanti contributi teorici che sono legati all'accrescimento della comprensione del Web 3.0, con particolare riguardo al metaverso e agli NFT. Lo studio permette di evidenziare come si tratti di tecnologie che si confermano come rilevanti per business e che sono in grado di riconfigurare i sistemi del valore delle imprese, di essere una risorsa per la creazione di un vantaggio competitivo che fa leva sulla generazione di valore di mercato intangibile, e di cui i manager, anche quelli che operano nelle PMI si mostrano consapevoli.*

Inoltre, il lavoro contribuisce alla letteratura emergente sul metaverso e sulle NFT, fornendo indicazioni su ciò che i manager pensano e intendono muoversi rispetto alla loro adozione, identificando le opportunità ma anche gli ostacoli considerati più rilevanti all'adozione di queste tecnologie.

Il lavoro fornisce inoltre ai decisori delle indicazioni rispetto alle iniziative prioritarie che dovrebbero essere adottate per accelerare la diffusione di queste tecnologie da parte delle imprese.

Lo studio presenta rilevanti implicazioni manageriali. Infatti, i risultati dimostrano che il metaverso e gli NFT sono tecnologie con un alto potenziale di creazione di valore per le imprese, e che le imprese stesse, anche le PMI non possono ignorare. Tuttavia, la loro adozione implica un deciso impegno da parte delle imprese in termini di investimenti in abilità e competenze che sono essenziali per lo sviluppo di progetti ottimali che coinvolgono queste tecnologie.

Infine, l'avvio di progetti di metaverso e NFT, richiederà alle imprese una chiara definizione degli obiettivi strategici legati all'adozione delle due tecnologie, e l'implementazione di approcci graduali che potranno anche prevedere la creazione di collaborazioni con partner tecnologici esterni chiave per superare le lacune in termini di competenze e abilità interne.

Bibliografia

- ACCIARINI C., CAPPA F., DI COSTANZO G., PRISCO M., SARDO F., STAZZONE A., STOTO C. (2023), "Blockchain technology to protect label information: The effects on purchase intentions in the food industry", *Computers & Industrial Engineering*, vol. 180, p. 109276.
- ALI O., MOMIN M., SHRESTHA A., DAS R., ALHAJJ F., DWIVEDI Y.K. (2023), "A review of the key challenges of non-fungible tokens", *Technological Forecasting and Social Change*, Elsevier Inc., vol. 187, n. November 2022, p. 122248.
- BARNEY J., WRIGHT M., KETCHEN D.J. (2001), "The resource-based view of the firm: Ten years after 1991", *Journal of Management*, vol. 27, n. 6, pp. 625-641.
- COLICEV A. (2022), "How can non-fungible tokens bring value to brands", *International Journal of Research in Marketing*, vol. 40, n. 1, pp. 30-37.
- CRYPTONOMIST. (2023), "Statistiche NFT: i volumi di vendita sono aumentati durante il Q1 2023. Cosa sta succedendo?", *Cryptonomist*, available at: <https://cryptonomist.ch/2023/05/14/forte-aumento-statistiche-nft/>.
- DIONISIO J.D.N., BURNS III W.G., GILBERT R. (2013), "3D Virtual Worlds and the Metaverse: Current Status and Future Possibilities", *ACM Computing Surveys*, vol. 45, n. 3, p. 38.
- DOWLING M. (2022), "Is non-fungible token pricing driven by cryptocurrencies?", *Finance Research Letters*, Elsevier Inc., vol. 44, n. March 2021, p. 102097.
- DWIVEDI Y.K., HUGHES L., BAABDULLAH A.M., RIBEIRO-NAVARRETE S., GIANNAKIS M., AL-DEBEI M.M., DENNEHY D., et al. (2022), "Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy", *International Journal of Information Management*, vol. 66, n. July, p. 102542.
- FLORIDI L. (2022), "Metaverse: a Matter of Experience", *Philosophy and Technology*, Springer Netherlands, vol. 35, n. 3, pp. 1-7.
- GARNETT A.G. (2024), "What is Web 3.0? Understanding Web3 decentralized Internet", *Britannica*, available at: <https://www.britannica.com/money/what-is-web3>.
- GIANG BARRERA K., SHAH D. (2023), "Marketing in the Metaverse: Conceptual understanding, framework, and research agenda", *Journal of Business Research*, Elsevier Inc., vol. 155, n. PA, p. 113420.
- GURSOY D., MALODIA S., DHIR A. (2022), "The metaverse in the hospitality and tourism industry: An overview of current trends and future research directions", *Journal of Hospitality Marketing & Management*, vol. 31, n. 5, pp. 527-534.
- HAKKARAINEN T., COLICEV A. (2023), "Blockchain-enabled advances (BEAs): Implications for consumers and brands", *Journal of Business Research*, Elsevier Inc., vol. 160, n. January, p. 113763.
- HENNIG-THURAU T., ALIMAN D.N., HERTING A.M., CZIEHSO G.P., LINDER M., KÜBLER R. V. (2022), "Social interactions in the metaverse: Framework, initial evidence, and research roadmap", *Journal of the Academy of Marketing Science*, n. 0123456789, available at: <https://doi.org/10.1007/s11747-022-00908-0>.
- HOFSTETTER R., DE BELLIS E., BRANDES L., CLEGG M., LAMBERTON C., REIBSTEIN D., ROHLFSEN F., et al. (2022), "Crypto-marketing: how non-fungible tokens (NFTs) challenge traditional marketing", *Marketing Letters*, Springer US, vol. 33, n. 4, pp. 705-711.
- HOLLENSSEN S., KOTLER P., OPRESNIK M. (2022), "Metaverse - the new marketing universe", *Journal of Business Strategy*, vol. ahead-of-p, available at: <https://doi.org/10.1108/JBS-01-2022-0014>.
- JOY A., ZHU Y., PEÑA C., BROUARD M. (2022), "Digital future of luxury brands: Metaverse, digital fashion, and non-fungible tokens", *Strategic Change*, vol. 31, n. 3, pp. 337-343.
- KRAUS S., KANBACH D.K., KRYSTA P.M., STEINHOFF M.M., TOMINI N. (2022), "Facebook and the creation of the metaverse: radical business model innovation or incremental transformation?", *International Journal of Entrepreneurial Behaviour and Research*, vol. 28, n. 9, pp. 52-77.
- LEE J., YEO I., LEE H. (2022), "Metaverse Current Status and Prospects: Focusing on Metaverse Field Cases", *Proceedings - 2022 IEEE/ACIS 7th International Conference on Big Data, Cloud Computing, and Data Science, BCD 2022*, IEEE, pp. 332-336.
- LUMINEAU F., WANG W., SCHILKE O. (2021), "Blockchain Governance — A New Way of Organizing Collaborations?", *Organization Science*, vol. 32, n. 2, pp. 500-521.
- NADINI M., ALESSANDRETTI L., DI GIACINTO F., MARTINO M., MARIA AIELLO L., BARONCHELLI A. (2021), "Mapping the NFT revolution: market trends, trade networks, and visual features", *Scientific Reports*, vol. 11, available at: <https://doi.org/10.1038/s41598-021-00053-8>.
- PARK S.M., KIM Y.G. (2022), "A Metaverse: Taxonomy, Components, Applications, and Open Challenges", *IEEE Access*, vol. 10, pp. 4209-4251.
- POLYVIOU A., PAPPAS I.O. (2022), "Chasing Metaverses: Reflecting on Existing Literature to Understand the Business Value of Metaverses", *Information Systems Frontiers*, Springer US,, n. 0123456789, available at: <https://doi.org/10.1007/s10796-022-10364-4>.
- SHETH J. (2020), "Impact of Covid-19 on consumer behavior: Will the old habits return or die?", *Journal of Business Research*, Elsevier, vol. 117, pp. 280-283.
- TAPSCOTT D., TAPSCOTT A. (2017), "How Blockchain Will Change Organizations", *MIT Sloan Management*, vol. 58, n. 2, available at: <https://doi.org/10.1016/j.pbb.2011.01.004>.Autoshaping.
- TREIBLMAIER H., SILLABER C. (2021), "The impact of blockchain on e-commerce: A framework for salient research topics", *Electronic Commerce Research and Applications*, vol. 48, p. 101054.
- WILSON K.B., KARG A., GHADERI H. (2022), "Prospecting non-fungible tokens in the digital economy: Stakeholders and ecosystem, risk and opportunity", *Business Horizons*, Kelley School of Business, Indiana University, vol. 65, n. 5, pp. 657-670.
- ZELAZSKO A. (2024), "What Is an NFT?", *Britannica*, available at: [https://www.britannica.com/story/what-is-an-nft#:~:text=An NFT \(non-fungible token,GIFs%2C images%2C and collages](https://www.britannica.com/story/what-is-an-nft#:~:text=An NFT (non-fungible token,GIFs%2C images%2C and collages).
- ZHANG Z.J. (2022), "Cryptopricing: Whence comes the value for cryptocurrencies and NFTs?", *International Journal of Research in Marketing*, vol. 40, n. 1, pp. 22-29

Fostering high-impact innovation: empirical evidence in Europe

VALERIA SCHIFILLITI¹ ELVIRA TIZIANA LA ROCCA² MAURIZIO LA ROCCA³

Abstract

The present exploratory research paper delves into the dynamics between external and internal catalysts for innovation and their impact on the profundity of innovation within firms, integrating insights from the disruptive innovation and the resource-based view frameworks. On the one hand, the study examines market competitiveness as an external driver of innovation. On the other, it focuses on firm-level (internal) innovation drivers, particularly those related to patents. This investigation encompasses a large dataset of publicly listed European corporations over the period from 2013 to 2021. The findings indicate a positive relationship between the depth of innovation and certain innovation drivers. Nevertheless, an inverse relationship is identified between the patent's portfolio and innovation depth, suggesting that a small number of valuable patents, in comparison to the overall patent count, diminishes innovation depth. This paper proposes that future research should examine how the influence of these external and internal drivers on a firm's innovation depth varies across different sectors and explore the effect of moderating variables on the relationship studied. By offering a general view of the innovation drivers, this research enriches the existing academic literature with novel perspectives.

Keywords: innovation drivers; innovation depth; intellectual property

Framing of the paper. It is widely recognized that intellectual property (IP) serves as a fundamental element for fostering innovation and attaining an advantage in the global marketplace (Coro and Burtchaell, 2021; OECD 2023). However, the rapid progression of Industry 4.0, the intricate relationship between market dynamics and the technical quality of IP becomes increasingly critical. Within this context, markets for technology not only addresses how technologies evolve and influence market dynamics but also how they are integrated into business models and marketing strategies to drive innovation and competitive advantage. Hoffman et al. (2021) emphasized the need for marketing scholars to develop theoretical paradigms that encapsulate how technologies foster competitive advantages, connecting technological innovation directly to marketing theory and practice. Mansour and Barandas (2017) contribute to the discussion by focusing on high-tech entrepreneurial content marketing and its role in business model innovation. Their study illustrates how high-tech entrepreneurs leverage innovative marketing strategies under limited resources and unpredictable conditions, underlining the connection between technology, marketing, and business model innovation. In their research on the transformative effects of marketing innovation on the competitiveness of businesses, Ungerman, Dědková, and Gurinová (2018) affirmed that the significance of innovative solutions increases the development of products and strategies in the context of Industry 4.0. Their findings indicate that firms engage in continuous innovation in response to the competitive pressures imposed by market attractiveness. As stated by Guo, Pérez-Castrillo, and Toldrà-Simats (2017) market coverage, through its influence on a firm's strategic direction, can significantly modulate the innovation quality of IP, underscoring the relevance of external market pressures in shaping IP strategies. Gök and Peker (2017) exploring how innovation performance is connected to market and financial performance, highlighted that market performance plays an important role in converting innovation into favourable financial results. Their research indicates that the attractiveness of the market not only directly influences the quality of innovation but also plays a vital role in how innovation contributes to overall corporate performance. Anand et al. (2016), adopting the framework of an innovation diffusion model, found a direct relationship between the breadth of market coverage and the success of a product in terms of diffusion and sales. In their research on the relationship between the direction, depth, and nature of openness and innovative achievement of Chinese companies, Chen et al. (2011) found that increased scope and depth of openness enhances innovative performance, suggesting that open innovation is applicable beyond science and

¹ University of Messina
e-mail: vschifilliti@unime.it

² University of Messina
e-mail: elviratiziana.larocca@unime.it

³ University of Calabria
e-mail: maurizio.larocca@unical.it

technology-focused innovation. According to Yun et al. (2016) the knowledge-based economy and open innovation, are related to the interdependencies among technology, business model innovation, and market expansion.

Purpose of the paper. Innovation, which is crucial for both competitive advantage and economic expansion, is driven by a variety of elements. These drivers can be classified into two main categories: internal and external. Each of which has a substantial impact on the innovative capabilities as well as outcomes of a company. It is important for organizations seeking to create a culture of innovation and preserve a competitive advantage in rapidly changing markets to recognize these drivers. Internal drivers of innovation may include: an organizational culture that promotes risk-taking, experimentation, and the open exchange of ideas providing an ideal environment for fostering innovation. Effective leadership that encourages and advocates for innovative projects is crucial as well as transformational leadership that has been recognized as a key factor in promoting innovation (Bass, 1985). The competence, creativity, and abilities of company's employees are essential factors that inspire innovation since companies that invest in personnel development and knowledge acquisition experience increased innovation outputs (Becker, 1964). Furthermore, the Resource-Based View (RBV) theory posits that an organization's resources and capabilities, which comprise its unique competencies, financial resources, and technological assets, are pivotal catalysts for innovation (Barney, 1991). Both technological advancements and the competitive dynamics within an industry are examples of external drivers of innovation. They may encourage businesses to innovate since businesses are driven to continuously innovate as a result of the pressure, they feel to maintain their competitiveness in the context of quickly evolving technologies and industry standards (Schumpeter, 1942). Moreover, innovations are frequently driven by changing demands and preferences of consumers. According to von Hippel (1988), market demand serves as a stimulus for innovation, which allows businesses to modify their goods and services to satisfy the expectations of their customers. Also, the rules, regulations, and incentives imposed by the government can have a considerable impact on innovation. In accordance with Edquist (1997), policies that encourage research and development activities, preserve intellectual property rights, and provide support for startup ecosystems all result to increased levels of innovation. Furthermore, collaborations with universities, research institutes, and other organizations, in addition to participation in innovation networks, have the potential to significantly increase the capacity of a company to innovate since these connections allow for access to novel ideas, resources, and markets (Powell, Koput, and Smith-Doerr, 1996).

Previous scholars analysed the impact of innovation considering several aspects. Zhao (2020) provided a foundational perspective on the relationship between technology and economic behaviour, highlighting the multifaceted ways in which technology can foster economic activities while also addressing potential negative impacts on society. Coccia (2017) in the study on problem-driven innovation, especially in fields like the pharmaceutical industry, where the co-evolution of problems and solutions drives radical innovations, found that the motivation behind firms' examination of innovative solutions to unsolved problems are a means to secure competitive advantages in technologically dynamic markets. However, by integrating the Disruptive Innovation theory with the Resource-Based View (RBV), the present study explores how firms can leverage their unique resources and market conditions to foster innovation. Christensen's (1997) introduction of the Disruptive Innovation concept transformed the way in which new competitors can challenge market leaders. Rather than aiming to improve their products for the existing customer base, they may achieve so by initially concentrating on underserved segments or addressing simpler demands. Subsequently, Christensen, Raynor, and McDonald (2015) provided further elucidation on the theory by differentiating "disruptive innovations" from those that are primarily efficiency-oriented. According to Barney's (1991) RBV of the firm, organizations obtain and maintain a competitive edge by acquiring and effectively managing resources that are valuable, rare, imitable, and non-substitutable (VRIN). Intellectual property, and patents in particular, are recognized as strategic assets that organizations can utilize to foster innovation and establish a unique position in the market (Hall, Jaffe, & Trajtenberg, 2005). Significantly influencing the change in the focus from external factors to internal capabilities, the RBV has highlighted strategic asset management as a critical success factor in encouraging innovation (Wernerfelt, 1984).

Extensive research has been conducted on the relationship between market competitiveness and innovation activity, and the results support both positive and negative effects on innovation intensity. An "inverted-U" relationship between competition and innovation is proposed by Aghion et al. (2005), which posits that moderate levels of competition foster innovation, whereas excessively high or low levels may impede it. This viewpoint is supported by other scholars that emphasises the role of firms' strategic asset management, specifically with regard to patents, in mitigating these consequences, enabling companies to effectively deal with competitive pressures and taking advantage of opportunities for innovation (Teece, 1986). In recent empirical investigations, the correlation between patent strategies and innovation outcomes has been examined. For example, research has indicated that companies that possess extensive patent portfolios not only safeguard their novel ideas but also serve as an indicator of their technological prowess to the market, thereby enticing investments and collaborations (Hsu & Ziedonis, 2013). Furthermore, there is a correlation between the market value and innovation performance of companies and the quality and applicability of patents (Bessen & Meurer, 2008).

Despite the extensive body of literature on Disruptive Innovation, the RBV, and market competitiveness, few studies have synthesized these perspectives to understand how firms can navigate competitive landscapes and leverage strategic assets to achieve deep innovation. Therefore, by adopting the theoretical framework of disruptive innovation and RBV, the purpose of the present study is to analyse the impact of external and internal innovation drivers on company's innovation depth. Hence, we propose the following hypotheses:

H1: There is a positive relationship between the number of innovator competitors (market competitiveness) and innovation depth.

H2: The depth of innovation decreases as the concentration of patents' portfolio increases.

H3: The depth of innovation increases as the economic value of patents becomes more relevant.

Methodology. Our study develops a quantitative analysis based on data collated through Orbis Intellectual Property (Orbis IP) database of Moody's Analytics, former Bureau van Dijk. The analysis focuses on listed companies of the following European countries: Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Gibraltar, Greece, Iceland, Ireland, Italy, Luxembourg, Monaco, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and Turkey,

The sample includes non-financial firms, with a total of 12958 observations. An unbalanced panel covering a period from 2013 to 2021. We perform the firm-fixed effects analysis to eliminate unobservable heterogeneity with robust standard errors.

Table 1 reports a comprehensive description of the variables used in our preliminary empirical analysis.

The dependent variable is "Depth of innovation" the level or magnitude of novelty and change introduced by an innovation, valued by IPBI (<https://www.ip-bi.com>). It is related to all other companies with patents in the same branch to be fully comparable to the direct competitive environment.

Our main explanatory variables are:

- "Market competitiveness", as proxy of external innovation driver. It is the number of competitors that are active with innovations made in the technical fields of the company, valued by IPBI (<https://www.ip-bi.com>).
- "Patents portfolio", as proxy of firm-level innovation driver. It is a measure of concentration of values across the IP portfolio, valued by IPBI (<https://www.ip-bi.com>). It measures if the value of patents' portfolio of a firm is concentrated in a few patents or homogenously dispersed among all the patents.
- "Patents relevance", as proxy of firm-level innovation driver. It is measured by the total value of patents in portfolio (valued by IPBI, <https://www.ip-bi.com>) scaled to the company's total assets (by Orbis database).

Traditional control variables are included in the model. Cash Holding, amount of liquidity held by the company, and Leverage are considered in our analysis as financial capital variables. Tangibility represents the firm tangible assets, and it is measured by the ratio of tangible assets to total asset. It could strengthen firms' financial capacity since they are used as collateral. This group of financial variables can give a general idea of the firm's financial resources that could be invested in strategic projects, such as those related to innovation. We control, also, for firm Size (natural logarithm of total assets) and firm Age (natural logarithm of number of years since the firm foundation plus one), as proxy for the reputation and track record a company gains over the years. Net Working Capital, Industry-Adjusted MtB ratio, Return on Asset (ROA), Industry-Adjusted Growth Sales are well-established firm performance measures.

Tab. 1: Description of the variables used in the analysis

Variables	Description
<i>Dependent variable</i>	
Depth of innovation	It refers to the level or magnitude of novelty and change introduced by an innovation, valued by IPBI (https://www.ip-bi.com). It is related to all other companies with patents in the same branch to be fully comparable to the direct competitive environment.
<i>Independent variables</i>	
Market competitiveness	From an intellectual property point of view, number of competitors that are active with innovations made in the technical fields of the company, valued by IPBI (https://www.ip-bi.com)
Patents portfolio	It is a measure of concentration of values across the IP portfolio, valued by IPBI (https://www.ip-bi.com). It measures if the value of patents' portfolio of a firm is concentrated in a few patents or homogenously dispersed among all the patents.
Patents relevance	Total value of patents in portfolio (processed by IPBI - https://www.ip-bi.com) scaled to the company's total assets (by Orbis database)
<i>Control variables</i>	
Cash Holding	Cash and cash equivalent on total assets.
Leverage	Financial debt on total assets
Tangibility	Tangible assets to total assets
Firm Size	Natural logarithm of total assets
Firm Age	Natural logarithm of number of years since the firm foundation plus one
Net Working Capital	Current assets minus short term liabilities
Industry-Adjusted MtB ratio	Firm's MTB ratio minus two-digits industry MTB ratio.
ROA	MtB is the firm's market value of equity scaled to book value of equity.
Industry-Adjusted Growth Sales	Ratio between EBIT and total assets
	Firm's annual rate of growth of sales minus two-digits industry annual rate of growth of sales

Source: our elaboration

Results. The following table reports the descriptive statistics of the sample analyzed, the mean, median, standard deviation, quartiles, minimum and maximum values of the variables considered in the analysis.

Tab. 2: Descriptive statistics

	Mean	Median	sd	min	p25	p75	max

Depth of innovation	0.814	0.842	0.145	0.120	0.699	0.933	1.000
Market competitiveness	0.661	0.685	0.252	0.000	0.515	0.853	1.000
Patents portfolio	0.762	0.790	0.229	0.030	0.600	1.000	1.000
Patents relevance	0.114	0.008	0.332	0.000	0.000	0.060	2.364
Cash holdings	0.177	0.115	0.182	0.000	0.058	0.223	0.992
Leverage	0.216	0.191	0.183	0.000	0.072	0.314	1.000
Tangibility	0.198	0.144	0.181	0.000	0.055	0.294	0.958
Size	12.815	12.746	2.588	5.289	10.856	14.798	19.704
Age	3.468	3.434	0.919	0.000	2.833	4.159	5.908
Net Working Capital	0.140	0.126	0.146	-1.561	0.037	0.224	0.872
Industry-Adjusted MtB ratio	-0.261	-0.710	7.370	-32.477	-2.179	0.946	35.860
ROA	-0.011	0.049	0.258	-4.400	-0.017	0.093	6.274
Industry-Adjusted Growth Sales	-0.005	-0.067	0.619	-2.252	-0.203	0.051	4.658

N. Observations: 12958

Source: our elaboration from Orbis IP and Orbis database

Table 3 presents the correlation matrix of the variables. It does not show particularly high correlations. In addition, we assessed the potential multicollinearity among the independent variables using variance inflation factors (VIFs). The average VIF is 1.27 (max VIF=1.61), which is below the generally employed cut-off of 10 (or, more prudently, 5) for regression models (Kutner et al., 2004), suggesting that multicollinearity does not affect our results.

Tab. 3: Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	VIF
1 Depth of innov.	1.00													
2 Market competitiv.	0.13	1.00												1.04
3 Patents portfolio	-0.26	-0.04	1.00											1.02
4 Patents relevance	0.24	0.10	-0.11	1.00										1.36
5 Cash holdings	0.12	0.13	-0.05	0.31	1.00									1.51
6 Leverage	-0.04	-0.03	0.01	-0.07	-0.28	1.00								1.22
7 Tangibility	-0.04	-0.15	0.00	-0.18	-0.32	0.29	1.00							1.26
8 Size	0.16	-0.02	-0.01	-0.36	-0.35	0.19	0.29	1.00						1.61
9 Age	-0.01	-0.10	0.03	-0.20	-0.29	0.04	0.19	0.33	1.00					1.25
10 Net Working Capital	-0.11	-0.08	0.03	-0.11	-0.24	-0.11	-0.09	-0.13	0.19	1.00				1.31
11 Industry-Ad. MtB ratio	0.02	-0.00	-0.00	0.05	0.06	-0.07	-0.02	-0.04	-0.04	0.01	1.00			0.98
12 ROA	-0.07	-0.08	0.04	-0.44	-0.32	-0.05	0.16	0.41	0.29	0.25	0.00	1.00		1.57
13 Industry-Adjusted Growth Sales	0.00	0.02	0.01	0.08	0.13	-0.05	-0.05	-0.12	-0.12	-0.07	0.04	-0.13	1.00	1.04

Notes: Correlations greater than 0.03 or lower than -0.03 are statistically significant at the 0.05 level or lower.

Source: our elaboration from Orbis IP and Orbis database

The Table 4 presents the main results of our study. In column (2) it is reported the main model results, based on firm-fixed effect.

Tab. 4: Results concerning the relationship between innovation drivers and the depth of innovation.

	(1)	(2)
	only control variables	Main Model
Market competitiveness		0.027*** (0.004)
Patents portfolio		-0.047*** (0.004)
Patents relevance		0.034*** (0.005)
Cash Holdings	-0.001 (0.008)	0.004 (0.008)
Leverage	0.008 (0.007)	0.004 (0.007)
Tangibility	-0.038*** (0.012)	-0.031** (0.012)
Size	0.004* (0.002)	0.008*** (0.002)
Age	0.012* (0.006)	0.010* (0.006)

Net Working Capital	0.015	0.016
	(0.011)	(0.011)
ROA	-0.004	0.003
	(0.005)	(0.005)
Industry-Adjusted MtB ratio	0.000	0.000
	(0.000)	(0.000)
Industry-Adjusted Growth Sales	-0.000	-0.000
	(0.001)	(0.001)
Constant	0.747***	0.709***
	(0.032)	(0.034)
R ²	0.058	0.075
Observations	12958	12958

Notes: Results based on fixed-effect estimation. For the description of the variables, see Table 1. Robust standard errors are reported in brackets. ***: denotes significance at the 1% level; **: denotes significance at the 5% level; *: denotes significance at the 10% level.

Source: our elaboration

The variable “Market competitiveness” is positive and statistically significant. It means that as the number of innovator competitors increases (market competitiveness), the depth of innovation increases.

In column 2, the negative and statistically significant coefficient of the variable “Patents portfolio” reveals that the presence of few patents of value compared to the total number of patents decreases depth of innovation.

Concerning the variable “Patents relevance”, as the economic value of patents becomes more relevant, the level of company’s innovation increases.

Research limitations. This study is an initial exploratory analysis, a work-in-progress regarding a sample of European listed firms operating in non-financial sectors. In our future research we want to complete this analysis examining how the impact of this external and internal innovation drivers on firms’ innovation depth differs by sector and considering the role of moderating variables on the relationship studied. In this regard, more advanced econometric techniques could be useful to better understand the relationship investigated.

Managerial implications. Our preliminary findings suggest, first of all, that market dynamics, in introducing heterogeneity of firms in industries, is a core factor shaping innovation depth. Higher competitiveness in the market fosters disruptive innovation by firms in search of long-term competitive advantages. In line to what suggested by the classical work of Smith (1776), named the “escape effect”, market competitiveness generates greater incentives to firms to develop innovative processes. Innovators could successfully escape competition in the long-run by gaining a competitive advantage and a certain degree of future market power. Thus, competition boosts higher level innovation.

In a similar vein, it results a sort of path dependence in innovation. Firms having higher value of patents, a track record of success in high impact patenting, are the one that are able to innovate at most.

Finally, it results that if the value of innovation is concentrated in a few patents, a low number of patents provides the vast majority of patent value. Specialization, to have a focus on specific knowledge, is at the core of greater advancement in research and innovation of higher prominence.

Competitiveness, when coupled with a strategic approach to intellectual property management, significantly enhances the technical depth of innovations. These findings contribute to the broader discourse on innovation management, offering insights into the mechanisms through which firms can sustain competitive advantage in dynamic markets.

From a managerial point of view, this research offers practical insights for managers on leveraging intellectual property and aligning innovation strategies with market conditions to foster sustainable competitive advantage.

From a policy point of view, regulations that promote equal competition may encourage the admission of new firms into markets and the introduction of innovative products and processes, subsequently impacting market structures.

The research indicates that companies tend to provide more innovative solutions when operating in a competitive environment that fosters a culture of innovation and offers valuable perspectives into the innovative behavior of European companies.

Originality of the paper. This present research contributes to the existing body of literature on innovation management by providing empirical evidence on internal and external innovation drivers that affect company innovation depth. The analysis is developed using variables and measures in line with the literature which represent a novelty for the research stream on Innovation depth. The key contributions of the paper are threefold. First, we conduct an empirical examination of the significance of three distinct categories of innovation drivers, namely market competitiveness, patent portfolio, and patent relevance (as in Table 1). Second, we differentiate between drivers that are sourced internally or externally. Finally, the effect of these variables on the depth of innovation is evaluated, regardless of whether the innovation is incremental or radical. Overall, the findings contribute to the theoretical discourse on innovation management, emphasizing the synergy between competitive strategies and intellectual property management in fostering innovation. This research framework underscores the complexity of innovation processes, highlighting the interdependencies between market forces, strategic assets, and firm capabilities in shaping innovation trajectories.

References

- AGHION P., BLOOM N., BLUNDELL R., GRIFFITH R., HOWITT P. (2005), "Competition and Innovation: An Inverted-U Relationship", *Quarterly Journal of Economics*, vol. 120, n. 2, pp. 701-728.
- ANAND A., AGARWAL M., BANSAL G., GARMABAKI A.H.S. (2016), "Studying product diffusion based on market coverage", *Journal of Marketing Analytics*, vol. 4, pp. 135-146.
- BARNEY J. (1991), "Firm resources and sustained competitive advantage", *Journal of management*, vol. 17, n. 1, pp. 99-120.
- BASS B.M. (1985), "Leadership and performance beyond expectations.
- BECKER G.S. (2009), "Human capital: A theoretical and empirical analysis, with special reference to education", *University of Chicago press*.
- BESSEN J., MEURER M.J. (2008), *Patent Failure: How Judges, Bureaucrats, and Lawyers Put Innovators at Risk*. Princeton University Press.
- CHEN J., CHEN Y., VANHAVERBEKE W. (2011), "The influence of scope, depth, and orientation of external technology sources on the innovative performance of Chinese firms", *Technovation*, vol. 31, n. 8, pp. 362-373.
- CHRISTENSEN C.M. (1997), *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Harvard Business School Press.
- CHRISTENSEN C.M., RAYNOR M.E., MCDONALD R. (2015), "What is disruptive innovation?", *Harvard Business Review*, vol. 93, n. 12, pp. 44-53.
- COCCIA M. (2017), "Sources of technological innovation: Radical and incremental innovation problem-driven to support competitive advantage of firms", *Technology Analysis & Strategic Management*, vol. 29, n. 9, pp. 1048-1061.
- CORO D.M.L. BURTCHAEILL (2021), Managing intellectual property rights in innovation: the key to reaching the market, https://www.wipo.int/wipo_magazine/en/2021/01/article_0009.html.
- EDQUIST C. (1997), Systems of innovation: Technologies. *Institutions and Organizations*, Pinter, London.
- GÖK O., PEKER S. (2017), "Understanding the links among innovation performance, market performance and financial performance", *Review of managerial science*, vol. 11, 605-631.
- GUO B., PÉREZ-CASTRILLO D., TOLDRÀ-SIMATS A. (2019), "Firms' innovation strategy under the shadow of analyst coverage", *Journal of Financial Economics*, vol. 131, n. 2, pp. 456-483.
- HALL B.H., JAFFE A., TRAJTENBERG M. (2005), "Market value and patent citations", *RAND Journal of Economics*, vol. 36, n. 1, pp. 16-38.
- HOFFMAN D.L., MOREAU C.P., STREMERSCHE S., WEDEL M. (2022), "The rise of new technologies in marketing: A framework and outlook", *Journal of Marketing*, vol. 86, n. 1, pp. 1-6.
- HSU D.H., ZIEDONIS R.H. (2013), "Resources as dual sources of advantage: Implications for valuing entrepreneurial-firm patents", *Strategic Management Journal*, vol. 34, n. 7, pp. 761-781.
- KUTNER M.H., NACHTSHEIM C.J., NETER J. (2004), *Applied Linear Regression Models* (4th ed.), McGraw-Hill Irwin series Operations and decision sciences, Chicago.
- MANSOUR D., BARANDAS H. (2017), "High-tech entrepreneurial content marketing for business model innovation: A conceptual framework", *Journal of Research in Interactive Marketing*, vol. 11, n. 3, pp. 296-311.
- OECD (2023), *Competition and Innovation: A Theoretical Perspective*, OECD Competition Policy Roundtable Background Note.
- POWELL W.W., KOPUT K.W., SMITH-DOERR L. (1996), "Interorganizational collaboration and the locus of innovation: Networks of learning in biotechnology", *Administrative Science Quarterly*, vol. 41, n. 1, pp. 116-145.
- SCHUMPETER J.A. (1942), *Capitalism, socialism, and democracy*. Harper & Brothers.
- SMITH A. (1776), *An inquiry into the Nature and Causes of the Wealth of Nations*, W. Strahan and T. Cadell, London.
- TEECE D.J. (1986), "Profiting from technological innovation: Implications for integration, collaboration, licensing, and public policy", *Research Policy*, vol. 15, n. 6, pp. 285-305.
- UNGERMAN O., DEDKOVA J., GURINOVA K. (2018), "The impact of marketing innovation on the competitiveness of enterprises in the context of industry 4.0", *Journal of competitiveness*, vol. 10, n. 2, pp. 132.
- VON HIPPEL E. (2007), *The sources of innovation* (pp. 111-120), Gabler.
- YUN J.J., WON D., JEONG E., PARK K., YANG J., PARK J. (2016), "The relationship between technology, business model, and market in autonomous car and intelligent robot industries", *Technological Forecasting and Social Change*, vol. 103, pp. 142-155.
- WERNERFELT B. (1984), "A resource-based view of the firm", *Strategic Management Journal*, vol. 5, n. 2, pp. 171-180.
- ZHAO R. (2020), "Technology and economic behavior: A theoretical framework", *Human Behavior and Emerging Technologies*, vol. 2, n. 4, pp. 336-342.

Websites

<https://www.ip-bi.com>

www.oecd.org/daf/competition/competition-and-innovation-a-theoretical-perspective-2023.pdf.

Innovation in I4.0 and firms performance in Italy

FRANCESCO CAPONE¹ NICCOLÒ INNOCENTI² LEONARDO MAZZONI³ LUCIANA LAZZERETTI⁴

Abstract

This paper addresses the substantial debate surrounding Industry 4.0 (I4.0) and its impact on techno-economic systems, capturing the attention of business managers and policy-makers. Despite the acknowledged influence of I4.0 on firms, countries, and clusters, empirical assessments at the firm level have been scarce. The study aims to fill this gap by investigating the link between innovation in I4.0 technologies and firm performance.

The research underscores the dual benefit of I4.0 innovation—enabling technological solutions within enterprises and ensuring market success. Grounded in the idea that firm-developed knowledge influences economic performance, the study conducts a long-term analysis based on patents related to I4.0 from Italian companies (2010-2019). The central question revolves around the impact of I4.0 innovation on firm performance.

Using patents as an innovation proxy, the study examines spillovers on business and market performance, focusing on new knowledge and innovation processes in I4.0 technologies. Employing EPO's (2017) methodology, it identifies I4.0 patents from Italian inventors and correlates them with firm-level information from the AIDA Bureau van Dijk database.

Results from scatter-plots and regression analysis, reveal a positive relationship between patent generation in I4.0 and firm performance. This correlation remains stable across periods and performance indices, albeit within a predominantly large enterprise sample. The study contributes valuable insights to the discourse on the tangible effects of I4.0 innovation at the firm level.

Key words: Innovation, Industry 4.0, patents, firms' performance

Framing of the research. *The contemporary discourse surrounding Industry 4.0 (I4.0) has engendered a widespread and intricate debate within the academic and industrial spheres. The I4.0 paradigm, which integrates digital technologies with traditional industrial processes, has become a focal point of discussion, garnering substantial attention from business managers and policy-makers alike. The literature reflects a comprehensive exploration of the profound impact that I4.0 can exert not only on individual firms but also on broader techno-economic systems, spanning nations, regions, clusters, and industrial districts (Piccarozzi et al., 2018).*

This burgeoning body of work underscores the transformative potential of I4.0, tracing its roots back to the coining of the term by Kagerman et al. (2011). The literature has consistently emphasized the considerable influence I4.0 can wield (BCG, 2015; Capone and Innocenti, 2023; Capone et al., 2023; Mariani and Borghi, 2022; Piccarozzi et al., 2018). Beyond its impact on individual enterprises, the discourse extends to the macroeconomic level, examining the effects on countries and regions (Hervás Oliver et al. 2021; Götz & Jankowska, 2017).

However, despite over a decade of exploration since the inception of the I4.0 concept, a notable gap in the literature persists. While there is a growing body of empirical studies assessing the overall phenomenon, the focus has predominantly centered on adoption, development, and implementation of I4.0 technologies (Mariani and Borghi, 2022; Bettiol et al., 2021; Capestro et al., 2022; Cirillo et al., 2023). This concentration, while valuable, has been relatively silent regarding the impact of I4.0 technology at firm level. Benassi et al. (2022) and Raj and Seamans (2018) emphasize the scarcity of empirical evidence and the need for enterprise-level data on I4.0 and AI-related technologies.

In response to this gap, this paper positions itself within the broader discourse to explore the firm-level implications of I4.0 technology implementation. It aligns with Benassi et al. (2022) observe that empirical evidence in this domain is sparse (Cirillo et al., 2023; Bettiol et al., 2023a, b). By delving into the relationship between innovation in I4.0 technologies and firm performance, the research seeks to contribute nuanced insights to this ongoing debate, shedding light on unexplored dimensions of the I4.0 paradigm's impact on techno-economic systems.

¹ University of Firenze
e-mail: francesco.capone@unifi.it

² University of Firenze
e-mail: niccolo.innocenti@unifi.it

³ University of Firenze
e-mail: leonardo.mazzoni@unifi.it

⁴ University of Firenze
e-mail: luciana.lazzeretti@unifi.it

Purpose of the paper. The primary objective of this research is to make a substantial contribution to the ongoing discourse surrounding the impact of Industry 4.0 (I4.0) innovation on firm performance.

Specifically, the study seeks to investigate the link between innovation in I4.0 technologies and the subsequent performance of firms. The aim is to shed light on how the ability to produce innovation in the context of I4.0 can catalyze a twofold benefit for organizations. Firstly, it aims to discern the impact on firms' internal processes, including the implementation of technological solutions and the initiation of product/process innovations. Secondly, it aims to investigate the external ramifications, focusing on the ability of firms to commercialize these technological solutions in the market successfully.

Given the acknowledged scarcity of empirical evidence on the firm-level impacts of I4.0 technology implementation, the research aims to address this gap by conducting a comprehensive and longitudinal analysis. The chosen timeframe spans from 2010 to 2019, allowing for a thorough examination of the sustained effects of I4.0 innovation on both business and market performance.

Building on existing studies, notably the work by Benassi et al. (2022) that establishes a positive correlation between innovation in I4.0 and firm productivity, this research aspires to extend the inquiry further. The focus is not solely on immediate productivity gains but on assessing whether the spillovers of innovation in I4.0 can manifest in enduring positive impacts on business performance.

The research utilizes a robust methodology, leveraging patents as a proxy for innovation, to measure the development of knowledge and skills over time. By concentrating on patents related to I4.0 developed by Italian companies, the study endeavors to capture a nuanced understanding of the intricate relationship between innovation production in I4.0 and subsequent firm performance.

In summary, the overarching aim of this research is to provide nuanced insights into the firm-level implications of I4.0 innovation. Through a rigorous analysis of patents and firm-level data, the research seeks to contribute valuable knowledge to both academic discussions and practical considerations for businesses navigating the dynamic landscape of Industry 4.0.

Methodology. This study employs a quantitative methodology to investigate the link between innovation in Industry 4.0 (I4.0) technologies and firm performance. Building on existing literature gaps, our approach integrates patent analysis, longitudinal examination, and firm-level data exploration.

Firstly, the study focuses on patents related to I4.0 technologies developed by Italian companies during the period 2010-2016. Patents serve as a key indicator of innovation, offering a tangible measure of firms' commitment to I4.0 advancement. The choice of patents as a proxy aligns with established methodologies in innovation studies (Griliches, 1990).

To assess the influence of I4.0 innovation on company performance, the study adopts a long-term analysis, spanning the period from patent development (2010-2015) (patents realized in the period 2010-2015 with depreciated rate by 10%) to subsequent years before the pandemic (2017-2019) (See Figure 1 and Table 1). This temporal extension allows for a nuanced understanding of the enduring effects of I4.0 innovation on firm performance over time.

Furthermore, the research employs a dual-level data collection process. Initially, patents in I4.0 technologies made by Italian inventors and applicants are identified using the methodology established by the European Patent Office (EPO) in 2017. Subsequently, firm-level information for each patent applicant is extracted from the AIDA Bureau van Dijk database. This comprehensive dataset integration ensures a robust exploration of the relationship between I4.0 patents and firm performance.

By employing statistical analysis, scatter-plots and regression techniques, the study aims to unveil the patterns and relationships between the ability to generate patents in I4.0 and firm performance. Notably, this analysis goes beyond a mere correlation assessment; it delves into the nuances of the relationship, ensuring a nuanced understanding of the impact of I4.0 innovation on various performance indices.

Results. The study establishes a positive correlation between the production of innovation in Industry 4.0 (I4.0) technologies and the overall performance of companies in Italy (Figure 1 and Table 1). These findings align with similar research (Benassi et al., 2022; Cirillo et al., 2023). Unlike Benassi et al. (2022), who attributed inconclusive results to a relatively short analysis period, our longitudinal study, spanning from 2010 to 2019, captures the link between I4.0 innovation and economic performance, providing a more comprehensive understanding.

However, specific considerations deserve attention. The sample selection process predominantly focuses on companies exhibiting intense patenting activities at the European level, directing the analysis towards large enterprises. This strategic choice inadvertently limits the representation of smaller entities. The study recognizes the absence of insights from small and medium-sized enterprises (SMEs) and acknowledges the necessity for future research to bridge this gap, providing a more holistic view of the diverse business landscape.

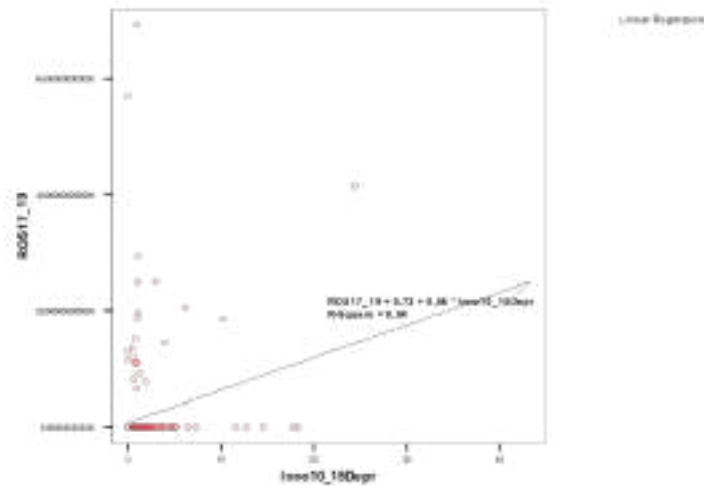
Moreover, the study has endeavored to address issues of reverse causality by incorporating a significant temporal lag between variables. It is essential to acknowledge that certain outcomes align with prior research, as evidenced by Benassi et al. (2022), emphasizing that 98% of I4.0 patents in Europe originate from large enterprises.

The preliminary analysis underscores the impact of company size, revealing a positive correlation between all variables and firm size, measured in terms of both employees and revenue. This nuance underscores the importance of delving into the perspectives of SMEs, warranting future studies to address this aspect comprehensively.

In conclusion, despite the acknowledged considerations, this paper adds a meaningful dimension to the ongoing discourse on the impact of I4.0 technologies on business performance. The study prompts further scientific exploration,

both theoretically and methodologically, offering compelling insights and laying the groundwork for future developments in this evolving research domain.

Figure 1: ROS 2017-2019 and I40 Patents realized in 2010-2015.



Source: our elaborations.

Table 1: Estimations results.

Variables	Mod1	Mod2	Mod3	Mod4	Mod5 ¹
Estimation	LR	LR	LR	LR	GLM(LOG)
Y / Dependent variable	ROS 17-19	ROS 14-16	SALES 17-19	ROS 17-19	ROS 17-19
Patents I40 2010-2015 Depreciated	0.128** (0.022)	0.196*** (0.001)	0.091* (0.069)	0.574*** (0.003)	0.471*** (0.000)
Cost R&S 2010-2012	-0.161*** (0.003)	-0.202*** (0.000)	-0.273*** (0.000)	-0.163*** (0.003)	-0.001*** (0.000)
Dummy Very Large	0.166*** (0.003)	0.085* (0.131)	0.152*** (0.002)	0.179*** (0.001)	1.851*** (0.000)
Patent Provincial Propensity 2010-2012	0.110** (0.040)	0.098* (0.072)	0.038 (0.437)	0.092* (0.085)	0.006* (0.109)
Firms total Patents				-0.469** (0.016)	-0.301*** (0.000)
R2 / LR Chi-Square	0.334	0.358	0.359	0.350	2301,136
Max. VIF	1.083	1.081	1.059	13.404	-
Obs.	377	377	377	377	377

***p < 0.01. **p < 0.05. *p < 0.1.

¹ Similar results also with Robust standard Error.

Research limitations. While the study provides valuable insights, it is essential to acknowledge and elaborate on certain limitations that may influence the interpretation and generalizability of the findings.

Firstly, the reliance on patents as a sole proxy for innovation introduces a potential limitation. Patents predominantly capture a specific type of innovation and may not fully encompass the broader spectrum of innovative activities within organizations. It is conceivable that some innovative endeavors, particularly those in the rapidly evolving landscape of Industry 4.0 (I4.0), might not be adequately represented through the patent data. Thus, the study's focus on patents may inadvertently underestimate certain non-patentable innovations or collaborative efforts that contribute significantly to firm performance.

Moreover, the study's geographical focus on Italian inventors and applicants may restrict the generalizability of findings to a more global context. Different regions may exhibit distinct innovation ecosystems, regulatory environments, and market dynamics, influencing the relationship between I4.0 innovation and firm performance. Thus, caution is warranted when extrapolating these findings to other countries or international settings.

The composition of the sample, predominantly comprising large enterprises, introduces a potential sample bias. The findings may not fully capture the dynamics and challenges faced by small and medium-sized enterprises (SMEs) in

adopting and benefiting from I4.0 innovations. SMEs often operate under resource constraints and may face different barriers to innovation compared to their larger counterparts. Future research should explore these nuances to provide a more comprehensive understanding of I4.0's impact across diverse organizational sizes.

The temporal scope of the study, covering the years 2010 to 2019, may introduce limitations in capturing the most recent developments in the I4.0 landscape. Given the rapid evolution of technology, the study's insights may not fully reflect the current state of I4.0 adoption and innovation strategies. Therefore, the findings should be interpreted with a consideration of the evolving nature of the I4.0 paradigm.

Additionally, the study focuses on the relationship between I4.0 innovation and firm performance without delving into potential mediating or moderating factors. Future research could explore contextual elements, such as organizational culture, leadership styles, or external market conditions, to offer a more nuanced understanding of the mechanisms influencing this relationship.

In conclusion, while the study contributes significantly to the discourse on I4.0 innovation and firm performance, researchers and practitioners should interpret the findings within the context of these limitations. Addressing these limitations in future research endeavors will further enrich our understanding of the complex dynamics surrounding the impact of I4.0 on organizational outcomes.

Managerial implications. The study's findings offer valuable insights with direct implications for managerial decision-making in the context of Industry 4.0 (I4.0) adoption and innovation strategies.

Firstly, the positive correlation identified between the ability to generate patents in I4.0 technologies and firm performance underscores the strategic importance of fostering an innovative culture within organizations. Managers should actively encourage and support initiatives that promote innovation in I4.0, recognizing it as a driver of enhanced performance metrics. This involves dedicating resources to research and development activities specifically focused on I4.0 technologies.

Moreover, the dual benefit highlighted in the study, whereby innovation in I4.0 not only improves internal processes but also contributes to market success, emphasizes the need for a holistic approach. Managers should aim to align innovation efforts with both internal operational enhancements and external market competitiveness. This may involve developing products or solutions that are not only technologically advanced but also resonate with market demands and trends.

Furthermore, the findings suggest that a proactive approach to innovation in I4.0 can contribute to sustained firm performance over time. Managers are encouraged to view innovation not as a one-time effort but as an ongoing process. Long-term planning and investment in I4.0 technologies may yield spillover effects that positively impact business and market performance.

In conclusion, the study's managerial implications call for a strategic focus on fostering innovation in I4.0 technologies, aligning internal and external goals, securing intellectual property, and adopting a long-term perspective. Embracing these implications can position organizations at the forefront of the dynamic I4.0 landscape, driving sustained success and competitiveness.

Originality of the paper. This study significantly contributes to the existing body of literature by offering novel perspectives and addressing gaps in the understanding of the relationship between Industry 4.0 (I4.0) innovation and firm performance. Several aspects underscore the originality of this research.

Firstly, the study navigates uncharted territory by focusing on the firm-level impact of I4.0 technology implementation. Despite the extensive literature on I4.0, empirical examinations at the organizational level remain scarce. By specifically investigating the link between innovation in I4.0 technologies and firm performance, the study ventures into a critical area that has received limited attention to date.

Secondly, the temporal dimension adds a distinctive layer to the research's originality. While the I4.0 paradigm has been under scrutiny for over a decade, this study bridges the gap between the initial years following its conceptualization and a subsequent period, providing a longitudinal perspective. This temporal depth allows for a nuanced understanding of the enduring impact of I4.0 innovation on firm performance, providing insights that extend beyond immediate effects.

Furthermore, the choice of patents as a proxy for innovation introduces a methodological innovation to the study. Patents serve as tangible indicators of firms' commitment to I4.0 innovation and provide a measurable metric for knowledge and skill development over time. This methodological choice not only aligns with the study's objectives but also contributes to the methodological toolkit available for investigating the impact of emerging technologies on organizations.

The incorporation of an Italian context into the analysis also enhances the originality of the study. By focusing on patents developed by Italian inventors and applicants, the research acknowledges the importance of considering regional and national contexts in understanding I4.0 innovation dynamics. This contextual specificity contributes to the richness of the findings and facilitates a more nuanced interpretation of the relationship between I4.0 innovation and firm performance.

In summary, the originality of this paper lies in its targeted exploration of firm-level impacts of I4.0 innovation, the longitudinal perspective it adopts, the methodological innovation in using patents as a measure of innovation, and the contextual richness introduced through the focus on the Italian landscape. These elements collectively position the study as a distinctive and valuable contribution to the evolving literature on I4.0 and its implications for organizational outcomes.

References

- AGOSTINI L., NOSELLA A. (2019), "The adoption of Industry 4.0 technologies in SMEs: results of an international study", *Management Decision*, vol. 58, n. 4, pp. 625-643.
- ARTZ K.W., NORMAN P.M., HARFIELD D.E., CARDINAL L.B. (2010), "A longitudinal study of the impact of R&D, patents, and product innovation on firm performance", *Journal of Product Innovation Management*, vol. 27, n. 5, pp. 725-740.
- BENASSI M., GRINZA E., RENTOCCHINI F. (2020), "The rush for patents in the Fourth Industrial Revolution", *Journal of Industrial and Business Economics*, vol. 47, n. 4, pp. 559-588.
- BENASSI M., GRINZA E., RENTOCCHINI F., RONDONI L. (2022), "Patenting in 4IR technologies and firm performance", *Industrial and Corporate Change*, vol. 31, n. 1, pp. 112-136.
- BETTIOL M., CAPESTRO M., DI MARIA E., MICELLI S. (2021), "SMEs@ Industry 4.0: a comparison between top and average performers", *Sinergie Italian Journal of Management*, vol. 39, n. 3, pp. 27-48.
- BETTIOL M., CAPESTRO M., DI MARIA E., GANAU R. (2023b), "Is this time different? How Industry 4.0 affects firms' labor productivity", *Small Business Economics*, Ahead-of-print, pp. 1-19.
- BETTIOL M., CAPESTRO M., DI MARIA E., GRANDINETTI R. (2023a), "Leveraging on intra-and inter-organizational collaboration in Industry 4.0 adoption for knowledge creation and innovation", *European Journal of Innovation Management*, vol. 26, n. 7, pp. 328-352.
- BOSTON CONSULTING GROUP. (2015), *Industry 4.0: the future of productivity and growth in manufacturing industries*. BCG, Boston.
- CAPESTRO M., DI MARIA E., BETTIOL M. (2022), "The Effects of Industry 4.0 for Firms and Territories: Introducing the Special Issue", *Scienze Regionali*, vol. 21 (Speciale), pp. 3-12.
- CAPONE F., INNOCENTI I. (2023), *Innovazione, Startup Innovative e Industria 4.0: aspetti Teorici ed Evidenze Empiriche*, Franco Angeli, Milano.
- CAPONE F., INNOCENTI N., BALDETTI F., ZAMPI V. (2023), "Firm's openness and innovation in Industry 4.0", *Competitiveness Review*. Ahead-of-Print: DOI: 10.1108/CR-07-2023-0178.
- CIRILLO V., FANTI L., MINA A., RICCI A. (2023), "New digital technologies and firm performance in the Italian economy", *Industry and Innovation*, vol. 30, n. 1, pp. 159-188.
- COHEN W.M. (2010), "Fifty years of empirical studies of innovative activity and performance", *Handbook of the Economics of Innovation*, vol. 1, pp. 129-213.
- CORRADINI C., SANTINI E., VECCIOLINI C. (2021), "The geography of Industry 4.0 technologies across European regions", *Regional Studies*, vol. 55, n. 10-11, pp. 1667-1680.
- GÖTZ M., JANKOWSKA B. (2017), "Clusters and Industry 4.0-do they fit together?", *European Planning Studies*, vol. 25, n. 9, pp. 1633-1653.
- GRILICHES Z. (1990), "Patent statistics as economic indicators: a survey", *Journal of Economic Literature*, vol. 28, n. 1, pp. 1661-1707.
- HERVÁS-OLIVER J.L., DI MARIA E., BETTIOL M. (2021), "Industry 4.0 in firms, clusters and regions: The new digital imperative", *Competitiveness Review* (Online), vol. 31, n. 1, pp. 1-11.
- HERVAS-OLIVER J.L. (2022), "Industry 4.0 in industrial district SMEs: understanding collective knowledge transfer by research and transfer institutes", *Competitiveness Review*, vol. 32, n. 5, pp. 647-666.
- HILPERT U. (2021), "Regional selectivity of innovative progress: Industry 4.0 and digitization ahead", *European Planning Studies*, vol. 29, n. 9, pp. 1589-1605.
- KAGERMANN H., WAHLSTER W. (2022), "Ten years of Industrie 4.0", *Sci*, vol. 4, n. 3, p. 26.
- KAGERMANN H., LUKAS W.D., WAHLSTER W. (2011), "Industrie 4.0: Mit dem Internet der Dinge auf dem Weg zur 4. industriellen Revolution", *VDI nachrichten*, vol. 13, n. 1, pp. 2-3.
- LAZZERETTI L. (2023), *The Rise of Algorithmic Society and the Strategic Role of Arts and Culture*. Edward Elgar Publishing.
- LAZZERETTI L. (2022), "What is the role of culture facing the digital revolution challenge? Some reflections for a research agenda", *European Planning Studies*, vol. 30, n. 9, pp. 1617-1637.
- MARIANI M., BORGHI M. (2019), "Industry 4.0: A bibliometric review of its managerial intellectual structure and potential evolution in the service industries", *Technological Forecasting and Social Change*, vol. 149, pp. 119752.
- NESTA L., SAVIOTTI P.P. (2005), "Coherence of the knowledge base and the firm's innovative performance: evidence from the U.S. pharmaceutical industry", *Journal of Industrial Economics*, vol. 53, n. 1, pp. 123-142.
- ORTT R., STOLWIJK C., PUNTER M. (2020), "Implementing Industry 4.0: assessing the current state", *Journal of Manufacturing Technology Management*, vol. 31, n. 5, pp. 825-836.
- PAGANO A., CARLONI E., GALVANI S., BOCCONCELLI R. (2020), "The dissemination mechanisms of industry 4.0 knowledge in traditional industrial districts: evidence from Italy", *Competitiveness Review*, vol. 31, n. 1, pp. 27-53.
- PICCAROZZI M., AQUILANI B., GATTI C. (2018), "Industry 4.0 in management studies: A systematic literature review", *Sustainability*, vol. 10, n. 10, pp. 1-24.
- RAJ M., SEAMANS R. (2018), "AI, labor, productivity, and the need for firm-level data", in Agrawal A., Gans J., Goldfarb A. (2019), *The Economics of Artificial Intelligence: An Agenda*. University of Chicago Press.
- SANDULLI F.D., GIMENEZ-FERNANDEZ E. M., RODRIGUEZ FERRADAS M.I. (2021), "The transition of regional innovation systems to Industry 4.0: the case of Basque Country and Catalonia", *European Planning Studies*, vol. 29, n. 9, pp. 1622-1636.
- SOUSA-ZOMER T. T., NEELY A., MARTINEZ V. (2020), "Digital transforming capability and performance: a microfoundational perspective", *International Journal of Operations & Production Management*, vol. 40, n. 7/8, pp. 1095-1128.
- SZASZ L., DEMETER K., RACZ B.G., LOSONCI D. (2021), "Industry 4.0: a review and analysis of contingency and performance effects", *Journal of Manufacturing Technology Management*, vol. 32, n. 3, pp. 667-694.

The “5Vs” of Big Data and the Propensity to Generate Patents with Big Data Technologies in SMEs

ENRICO MARCAZZAN¹ SAVERIO BARABUFFI² GIULIO FERRIGNO³ ANDREA PICCALUGA⁴

Abstract

In the contemporary digital landscape, the exponential growth of data, commonly referred to as Big Data, has become indispensable for businesses worldwide. Understanding the fundamental characteristics of Big Data, encapsulated by the “5Vs” (Volume, Variety, Velocity, Veracity, and Value), is crucial for deriving value and fostering innovation. This research explores the nexus between these “5Vs” and the propensity of Small and Medium-sized Enterprises (SMEs) to generate patents based on Big Data technologies. The study employs a knowledge-based view (KBV) framework to investigate this relationship, focusing on Italian SMEs. Through a questionnaire-based survey involving 135 SMEs, the research analyzes the impact of each of the “5Vs” on the generation of patents with Big Data technologies. The methodology utilizes multinomial probit analysis to assess the likelihood of developing different levels of patents in relation to the “5Vs” of Big Data. Findings suggest that while the “Variety” of data positively influences SMEs’ propensity to generate patents, other factors such as “Volume”, “Velocity”, “Veracity”, and “Value” show varying degrees of significance. Notably, the study reveals a counterintuitive relationship where a higher volume of data impedes SMEs’ patent generation activities. Similarly, factors like real-time data processing speed, data quality, and value extraction from Big Data show no significant impact on patent generation. This research underscores the importance of understanding the nuanced interplay between different dimensions of Big Data and innovation outcomes, particularly for SMEs. The findings suggest that SMEs should prioritize enhancing the diversity and sources of their data over sheer volume or speed of processing. Moreover, the study emphasizes the need for SMEs to consider the potential “dark side” effects of Big Data, advocating for a shift towards leveraging “Smart Data” rather than focusing solely on Big Data. In conclusion, this work contributes novel insights by highlighting the complex relationship between the “5Vs” of Big Data and SMEs’ patent generation activities. The findings offer valuable guidance for SMEs seeking to navigate the digital landscape effectively, innovate, and maintain competitiveness in the market.

Key words: big data; patents; SMEs.

Framing of the research. *In the digital age in which we live, the amount of data generated every day is growing exponentially (Cappa et al., 2021). This immense amount of data, commonly known as Big Data, has become an invaluable resource for businesses and institutions around the world (Ferrigno et al., 2023). Specifically, by Big Data we mean “any set of data that, with traditional systems, would require large capabilities in terms of storage space and time to be analyzed” (Del Vecchio et al., 2018, p. 6). However, managing, analyzing and deriving value from this mass of information requires not only advanced technological tools, but also a thorough understanding of its fundamental characteristics, the so-called “5Vs”: Volume, Variety, Velocity, Veracity and Value (Acciarini et al., 2023). “Volume” refers to the amount of data (Ghasemaghahi and Calic, 2019). With the advent of the Internet of Things (IoT), social media, and other digital devices, the volume of data has exploded to unprecedented levels. This enormous flow of information offers endless opportunities for analysis and innovation. “Variety” refers to the different types of data collected and processed by an enterprise (Ghasemaghahi, 2021; Pedota, 2023). This diversity includes text, images, audio, video, and more. The ability to integrate and analyze a wide range of data is critical to fully understand the context and gain meaningful insights for firms’ R&D activities (Ferrigno et al., 2023). The “Velocity” of Big Data refers to “the speed and the frequency of processing and integrating data” (Ghasemaghahi and Calic, 2020, p. 150; Ghasemaghahi et al., 2017). With the world becoming increasingly connected and real-time, the ability to analyze data in real time becomes essential to seize immediate opportunities and make informed decisions. “Veracity”, on the other hand, is defined as*

¹ Sant’Anna School of Advanced Studies, Pisa
e-mail: enrico.marcazzan@santannapisa.it

² Sant’Anna School of Advanced Studies, Pisa
e-mail: saverio.barabuffi@santannapisa.it

³ Sant’Anna School of Advanced Studies, Pisa
e-mail: giulio.ferrigno@santannapisa.it

⁴ Sant’Anna School of Advanced Studies, Pisa
e-mail: andrea.piccaluga@santannapisa.it

“reliability and credibility of data” (Ghasemaghahi and Calic, 2019; p. 73). Data quality is critical to ensure that analyses and decisions based on them are valid and reliable. Verification and management of data quality are therefore crucial in any analysis process. The fifth V, “Value”, refers to “firm’s ability to create value from big data” (Cappa et al., 2021, p. 53; Ghasemaghahi, 2021). In this sense, the value of Big Data is not intrinsic, but depends on the ability to interpret and use the data effectively to achieve desired goals.

The potential of Big Data has taken a central role in the development and growth of not only large organizations but also small and medium-sized enterprises (SMEs) (Vitale et al., 2010). SMEs are a key pillar of the global economy, contributing significantly to innovation and value creation (Müller et al., 2017). Understanding the relationship between the “5Vs” of Big Data and the propensity of SMEs to generate patents based on Big Data technologies is crucial to take full advantage of the opportunities offered by this digital revolution (Del Vecchio et al., 2018). Specifically, the importance of relying on patents stems from the fact that they can be valid measures of innovation and, when related to Big Data technologies, excellent measures to better understand the evolution of Big Data technologies (Saheb and Saheb, 2020). In addition, specifically for SMEs, patents can be considered as valid predictors of business performance (Müller et al., 2017).

Purpose of the paper. The purpose of the present “work-in-progress” is to understand which “Vs” have the greatest impact on the propensity to generate patents with Big Data technologies, considering the fact of the potential “dark side” effects of Big Data (Cappa et al., 2021). Through the lens of the knowledge-based view (KBV, Grant, 1996), the present research work aims to address the following research question:

RQ: Which Vs of Big Data have an impact on the generation of patents based on Big Data technologies in SMEs?

To address this research question, we give below some reasons for the relationship between “5Vs” and the propensity to develop patents on big data.

Volume

The huge volume of available data offers multiple opportunities for innovation in various sectors (Cappa et al., 2021), including for SMEs (Del Vecchio et al., 2018). Companies can develop new technologies and solutions based on Big Data to improve their products, services, or operational processes, resulting in new ideas (Johnson et al., 2017) that can be protected through patents. In a competitive environment, access to big data can provide a significant strategic advantage (Ghasemaghahi and Calic, 2019; Ghasemaghahi, 2021). Firms that can effectively exploit the volume of available data can develop innovative and advanced solutions that set them apart from competitors, potentially leading to patents for their distinctive technologies. Nonetheless, managing large volumes of data can be expensive (Cappa et al., 2021; CoalaData, 2014; Trabucchi et al., 2017), especially for SMEs that are characterized by resource scarcity. As suggested by recent empirical work, the role of “Volume” on business outcomes may be characterized by non-significance (Ghasemaghahi, 2021; Ghasemaghahi and Calic, 2019) or even negative effects (Cappa et al., 2021). In line with the above, our first hypothesis is as follows:

H1: Volume is negatively correlated with the propensity to develop patents with big data technologies.

Velocity

The speed at which data are generated and analyzed can affect a company’s ability to adapt quickly to changing market conditions (Ghasemaghahi and Calic, 2019). Technologies that enable real-time data processing and analysis can be invaluable in developing innovative solutions that improve operational efficiency or the ability to respond promptly to customer needs.

The ability to rapidly collect and analyze data can enable companies to identify emerging trends, market opportunities, or potential problems (Johnson et al., 2017). Technological solutions that facilitate this responsiveness can be patentable, thus protecting the firm’s investment in these advanced capabilities. Moreover, in a rapidly changing environment, the speed at which data become obsolete is a critical factor (D’Aveni et al., 2017; Johnson et al., 2017). Companies that develop technologies to manage and analyze large volumes of data in real time can reduce the risk of information obsolescence and gain a competitive advantage. These innovative solutions can be patented to protect their uniqueness and value. In line with the above, our second hypothesis is as follows:

H2: Velocity is positively correlated with the propensity to develop patents with big data technologies.

Variety

The diversity of data types available requires innovative solutions to effectively integrate and analyze all these sources of information (Ghasemaghahi and Calic, 2020). Companies that develop technologies to manage the variety of Big Data extract value from this diversity can gain a competitive advantage. These solutions may be subject to patenting to protect their intellectual property.

Different types of data require specific analytical approaches to extract meaningful information. Companies that develop innovative algorithms or methodologies to analyze heterogeneous data can gain a competitive advantage (Ghasemaghahi, 2021). These solutions can be patented to protect their uniqueness and ensure a return on R&D investment. Moreover, the variety of Big Data provides opportunities to customize services and offerings to the specific

needs of customers (Johnson et al., 2017). Companies that develop technologies to collect, integrate, and analyze data from multiple sources can offer highly personalized services that increase customer satisfaction and loyalty. These innovative solutions may be subject to patenting to protect their intellectual property and maintain a competitive advantage in the market. In line with the above, our third hypothesis is as follows:

H3: Variety is positively correlated with the propensity to develop patents with big data technologies.

Veracity

Data quality and reliability are crucial to obtaining accurate and meaningful results from Big Data analysis (Cappa et al., 2021). Companies that develop technologies to assess and improve the veracity of data can gain a competitive advantage. These solutions may be subject to patenting to protect their intellectual property and ensure customer confidence in the results of data analysis. Data “Veracity” can be compromised by cybersecurity threats, such as unauthorized access, data breaches, or manipulation (Brook, 2019). Companies that develop technologies to protect the veracity and integrity of sensitive data can gain a competitive advantage. These innovative solutions may be subject to patenting to protect their intellectual property and ensure the security of customer information. Moreover, much of Big Data is unstructured data, such as text, images, or video. Managing and analyzing this information effectively requires innovative solutions (Ghasemaghahi and Calic, 2020). Companies that develop technologies to extract value from unstructured data can gain a competitive advantage. These solutions may be subject to patenting to protect their intellectual property and ensure a return on R&D investment.

H4: Veracity is positively correlated with the propensity to develop patents with big data technologies.

Value

Extracting value from Big Data through data analysis and interpretation can enable companies to identify new market opportunities, optimize business operations, and improve customer satisfaction (Cappa et al., 2021; Ghasemaghahi, 2021). Innovative technologies that harness the value of Big Data may be subject to patenting to protect their uniqueness and ensure a competitive advantage in the marketplace.

Using Big Data to optimize business processes, reduce costs, and improve operational efficiency can generate significant savings and competitive advantages (Brynjolfsson et al., 2011; Ghasemaghahi, 2019; Tambe, 2014). Companies that develop technologies to extract value from Big Data and improve their internal operations can gain a competitive advantage. These innovative solutions can be patented to protect their intellectual property and ensure a return on their R&D investment. Moreover, using Big Data to better understand customer needs and preferences can enable businesses to offer highly personalized services and improve customer satisfaction (Cappa et al., 2021; Johnson et al., 2017). Innovative technologies that allow Big Data to be analyzed and used to personalize services may be subject to patenting to protect their uniqueness and ensure a competitive advantage in the market.

H5: Value is positively correlated with the propensity to develop patents with big data technologies.

Methodology. We collected the data of 135 Italian SMEs by submitting a questionnaire to gather information and data on both the Big Data characteristics, the patents with Big Data technologies done by the SME and other firm’s characteristics. More specifically, to analyze the relationship among the “5Vs” of Big Data and the propensity to generate patents with Big Data technologies in SMEs, we propose a multinomial probit (Keane, 1992; McCulloch and Rossi, 1994). since our dependent variables (“patents generated through Big Data Technologies”) is a categorical variable (in line with Messeni Petruzzelli et al., 2022). “Patents generated through Big Data Technologies” is subdivided into 4 classes: 1) “no patents”; 2) “1 patent”, 3) “between 2 and 4 patents”; 4) “more than 4 patents”. Then, we introduce as independent the 5 characteristics of Big Data: “Volume”, “Velocity”, “Variety”, “Veracity”, and “Value” which are operationalized according to a 7-point Likert scale. Then, we control for firm characteristics, such as “age”, “revenues”, “size”, and for regional and sectoral effects by introducing the dummy variables “region”, and “high technological sector”.

Results. By performing the econometric analysis, we estimate the likelihood of developing “1 patent”, “between 2 and 4 patents”, and “more than 4 patents” generated through Big Data Technologies with respect to none. Our preliminary analysis shows that “Volume” has a negative relationship for the category “1 patent” and “between 2 and 4 patents”, while it does not have any statistically significant effect on “more than 4 patents”. Then, we find that “Variety” has a positive and statistically significant effect on the category “between 2 and 4 patents”, and “more than 4 patents”. For the variables “Velocity”, “Veracity”, and “Value”, we do not find any statistical support for the three categories of patents, meaning that these Big Data characteristics do not have a statistically significant relationship with developing patents generated through Big Data technologies. We can conclude that we find support for our hypothesis H1 and H3, but not for H2, H4, and H5. The huge volume of data hinders the SMEs’ propensity of developing patents generated through Big Data Technologies, meaning that managing large volumes of data is expensive for SMEs (Cappa et al., 2021). However, managing the diversity of available data and sources improves the SMEs’ innovation performances and helps them maintain a competitive advantage in the market. Hence, SMEs can leverage the

heterogeneity of their data to improve their position in the innovative landscape and gain market power by protecting their intellectual property through patenting.

Research limitations. Our “work-in-progress” is characterized by some limitations. First, the research aims to investigate the relationship between the “5Vs” of Big Data and the propensity to generate patents with Big Data technologies individually, without investigating any internal relationships among the “5Vs”. Second, we focus only on patents with Big Data technologies as the dependent variable, without testing the impact of these patents on business performance. Third, our hypotheses are based on “correlation” between variables, without necessarily investigating “causal” relationships. These three main limitations open up insights for possible future research on the topic. In this sense, further research could find important interrelations between the “5Vs”, their effects on the business performance through patents with Big Data technologies, and “causal” relationships.

Managerial implications. Our work has several implications for SMEs. The “5Vs” of Big Data and their correlation with SMEs’ propensity to generate patents are key elements in ensuring success and competitiveness in today’s business landscape. Companies that understand and fully exploit the potential of Big Data can gain significant advantages and contribute significantly to innovation and economic growth. In this sense, instead of focusing on Big Data “Volume”, “Velocity”, “Veracity” and “Value”, SMEs should focus on improving the degree of “Variety” of Big Data. In this sense, SMEs should invest in the number of sources of big data.

Originality of the paper. The main originality of our “work-in-progress” relies on the fact that, as suggested by Plantec et al. (2023), we focus on data characteristics (i.e., “5Vs”) instead of technology (e.g., artificial intelligence) offering a complementary view of Plantec and colleagues’ work of the innovative activities of the firms. Moreover, the paper contributes to highlight the fact that Big Data are not good by themselves, but there are some “dark side” effects that must be taken into consideration adopting them. In this sense, our research suggests that it is better to rely on “Smart Data” rather than Big Data.

In conclusion, our paper presents counterintuitive findings. First, generally speaking, it is common to think that SMEs can effectively manage and analyze this huge volume of data in order to have a significant competitive advantage. However, our results suggest that higher “Volume” of data can have negative effects on the propensity to generate patents with Big Data technologies. Therefore, SMEs should focus on other “Vs” instead of the first (i.e., “Volume”). Second, in general terms, SMEs that can react quickly to market changes and emerging trends, supported by real-time analysis of Big Data (i.e., “Velocity”), can develop innovative solutions that merit patent protection. However, our research shows that it does not have a significant effect on the propensity to generate patents with Big Data technologies. Third, SMEs that invest in accurate data collection and management (i.e., “Veracity”) can develop solutions based on reliable information, increasing the credibility of their inventions and the likelihood of obtaining patents. However, our results show that it has no significance. Fourth, the concept of “Value” emphasizes the importance of turning data into meaningful information and creating tangible value for the business and customers. However, based on the results of our study, big data patents are not influenced by SMEs’ identification and exploitation of the inherent value of Big Data. Finally, only SMEs that synergistically integrate and analyze these different types of data (i.e., “Variety”) can develop innovative, multidimensional solutions that are patentable. The “Variety” dimension represents the only positive and significant factor for our results.

References

- ACCIARINI C., CAPPÀ F., BOCCARDELLI P., ORIANI R. (2023), “How can organizations leverage big data to innovate their business models? A systematic literature review”, *Technovation*, vol. 123, 102713.
- BROOK, C. (2019). What is data breach or cyber security insurance? Digital Guardian. Available at: <https://digitalguardian.com/blog/what-data-breach-or-cyber-security-insurance>.
- BRYNJOLFSSON E., HITT L.M., KIM H.H. (2011), “Strength in numbers: How does data-driven decision making affect firm performance?”, Available at SSRN 1819486, 33.
- CAPPÀ F., ORIANI R., PERUFFO E., MCCARTHY I. (2021), “Big data for creating and capturing value in the digitalized environment: unpacking the effects of volume, variety, and veracity on firm performance”, *Journal of Product Innovation Management*, vol. 38 n. 1, pp. 49-67.
- COOLADATA (2014). The true cost of building a big data solution. New York, USA: Cooladata, Available at: <https://www.cooladata.com/blog/true-cost>.
- D’AVENI R.A., DAGNINO G.B., SMITH K.G. (2010). “The age of temporary advantage”, *Strategic Management Journal*, vol. 31 n. 13, pp. 1371-1385.
- DEL VECCHIO P., DI MININ A., PETRUZZELLI A.M., PANNIELLO U., PIRRI, S. (2018), “Big data for open innovation in SMEs and large corporations: Trends, opportunities, and challenges”, *Creativity and Innovation Management*, vol. 27 n. 1, pp. 6-22.
- FERRIGNO G., CRUPI A., DI MININ A., RITALA P. (2023), “50+ years of R&D Management: a retrospective synthesis and new research trajectories”, *R&D Management*, vol. 53 n. 5, pp. 900-926.
- FERRIGNO G., DEL SARTO N., PICCALUGA A., BARONCELLI A. (2023), “Industry 4.0 base technologies and business models: a bibliometric analysis”, *European Journal of Innovation Management*, vol. 26 n. 7, pp. 502-526.
- GHASEMAGHAEI M. (2019), “Are firms ready to use big data analytics to create value? The role of structural and psychological readiness”, *Enterprise Information Systems*, vol. 13 n. 5, pp. 650-674.
- GHASEMAGHAEI M. (2021), “Understanding the impact of big data on firm performance: The necessity of conceptually differentiating among big data characteristics”, *International Journal of Information Management*, vol. 57, 102055.

- GHASEMAGHAEI M., CALIC G. (2019), "Does big data enhance firm innovation competency? The mediating role of data-driven insights", *Journal of Business Research*, vol. 104, pp. 69-84.
- GHASEMAGHAEI M., CALIC G. (2020), "Assessing the impact of big data on firm innovation performance: Big data is not always better data", *Journal of Business Research*, vol. 108, pp. 147-162.
- GHASEMAGHAEI M., HASSANEIN K., TUREL, O. (2017), "Increasing firm agility through the use of data analytics: The role of fit", *Decision Support Systems*, vol. 101, pp. 95-105.
- GRANT R.M. (1996), "Toward a knowledge-based theory of the firm", *Strategic Management Journal*, vol. 17 n. S2, pp. 109-122.
- JOHNSON J.S., FRIEND S.B., LEE H.S. (2017), "Big data facilitation, utilization, and monetization: Exploring the 3Vs in a new product development process", *Journal of Product Innovation Management*, vol. 34 n. 5, pp. 640-658.
- KEANE M.P. (1992), "A note on identification in the multinomial probit model", *Journal of Business & Economic Statistics*, vol. 10 n. 2, pp. 193-200.
- MCCULLOCH R., ROSSI P.E. (1994), "An exact likelihood analysis of the multinomial probit model", *Journal of Econometrics*, vol. 64 n. 1-2, pp. 207-240.
- MÜLLER D., TE Y.F., JAIN P. (2017), "Predicting business performance through patent applications", In *2017 IEEE International Conference on Big Data (Big Data)*, vol. December, pp. 4159-4164.
- MESSENI PETRUZZELLI A., MURGIA G., PARMENTOLA A. (2022), "How can open innovation support SMEs in the adoption of I4. 0 technologies? An empirical analysis", *R&D Management*, vol. 52 n. 4, pp. 615-632.
- PEDOTA M. (2023), "Big data and dynamic capabilities in the digital revolution: The hidden role of source variety", *Research Policy*, vol. 52 n. 7, 104812.
- PLANTEC Q., DEVAL M.A., HOOGE S., WEIL B. (2023), "Big data as an exploration trigger or problem-solving patch: Design and integration of AI-embedded systems in the automotive industry", *Technovation*, vol. 124, 102763.
- SAHEB T., SAHEB T. (2020), "Understanding the development trends of big data technologies: an analysis of patents and the cited scholarly works", *Journal of Big Data*, vol. 7 n. 1, 12.
- TAMBE P. (2014), "Big data investment, skills, and firm value", *Management Science*, vol. 60 n. 6, pp. 1452-1469.
- TRABUCCHI D., BUGANZA T., PELLIZZONI E. (2017), "Give away your digital services", *Research-Technology Management*, vol. 60 n. 2, pp. 43-52.
- VITALE G., CUPERTINO S., RICCABONI A. (2020), "Big data and management control systems change: the case of an agricultural SME", *Journal of Management Control*, vol. 31, pp. 123-152.

How WEIRD is Social Innovation? Exploring the Evolution of Social Innovation Research

JORDANA RECH GRACIANO DOS SANTOS¹ IAN MCCARTHY²

Abstract

This paper examines the extent to which empirical studies on social innovation are conducted in WEIRD (Western, Educated, Industrialized, Rich, and Democratic) countries and authored by WEIRD researchers. Through a systematic literature review, we analyzed 197 empirical research papers published in top-ranked journals in innovation, strategy, and management. We map the evolution of social innovation study locations, finding that the field has become less WEIRD over time. The analysis of articles reveals a trend towards adopting diverse country contexts, including areas previously overlooked such as countries in Africa, Latin America, and Asia. However, research is still predominantly produced by WEIRD researchers located in the United States, United Kingdom, France, and Spain. Additionally, it was found that the Journal of Business Research serves as the primary source for empirical studies within the field of social innovation, encompassing a diverse range of geographical locations in its articles.

Key words: social innovation; WEIRD context; systematic review; place; context

Framing of the research. Businesses, organizations, and government actors are increasingly called upon to play a pivotal role in addressing these complex issues and focus on their purpose besides profit (Weerawardena et al., 2021). Social innovation has emerged as a key focus area for addressing these complex social problems, such as poverty, inequality, environmental issues, and community problems (Seelos and Mair, 2017; Santos, 2015).

Defined by Beckman, Rosen, and Painter (2023) as novel processes or products aimed at generating effective solutions to complex social problems for collective benefit, social innovation is intricately tied to specific contexts, social relations, and institutions (Montgomery & Mazzei, 2021). Its rise in scholarly discourse is significant, reflecting a bigger shift towards confronting societal grand challenges—massive global issues spanning social and environmental domains with far-reaching implications beyond national borders (George et al., 2016; Whiteman et al., 2013).

Despite social innovation's emergence as a vital research field aimed at understanding and resolving complex societal issues, neglecting the spatial and contextual nuances can potentially trap the field (Beckman, Rosen, & Painter, 2023). Furthermore, there exists an intriguing tension in scholarly discourse regarding the positive impact of social innovation and its current application across various institutions such as academia, communities, and governments. Notably, articles within managerial settings often lack geographic specificity, with 83.62% of them failing to specify or limit their geographical locations (Beckman, Rosen, & Estrada-Miller, 2023).

Moreover, a comprehensive analysis necessitates examining multiple geographical contexts, rather than solely relying on convenient or WEIRD (Western, Educated, Industrialized, Rich, and Democratic) country data (Henrich, Heine, & Norenzayan, 2010). The term "WEIRD" describes research contexts in social science studies, particularly in experimental behavior research, where findings are often generalized as universally applicable (Henrich, Heine, & Norenzayan, 2010; Pitesa & Gelfand, 2023). As highlighted by Pitesa and Gelfand (2023), much of the scientific knowledge regarding human behavior pertains to WEIRD populations, produced by WEIRD researchers addressing WEIRD problems.

In this puzzle, our goal is to analyze the current state of the research field on social innovation and to what extent empirical studies on social innovation are done in WEIRD (Western, Educated, Industrialized, Rich, and Democratic) countries and carried out by produced WEIRD researchers.

Purpose of the paper. To clarify this tension, this paper presents results of a systematic literature review that aimed of mapping out the samples where the studies on social innovation are being made, specifically addressing the following research question: "How WEIRD is research in social innovation?". The method involves a systematic review of seven top-ranked journals in the field of innovation and management, resulting in 197 empirical research papers.

This paper also expects to make several contributions. First, add to the literature an evolutionary analysis of what theories are most often employed in conceptualizing and analyzing social innovation, and how do they contribute to our understanding of its processes. Secondly, analyze the context of social innovation across various geographical locations (place) and understand the development of the focus of the field over the years. Different than the article of Arnett (2008),

¹ LUISS University
e-mail jrech@luiss.it - Ian McCarthy

² e-mail: ian_mccarthy@sfu.ca

where the researcher analyzed the degree of American and international representation in major journals of the American Psychological Association (APA), this study is focused on the empirical setting in a managerial setting (innovation, management, and entrepreneurship) and institutional (geography, cultural, etc.) These findings will contribute to the context of social innovation in different countries, helping the government and individuals to understand the different relationships. As Alley and Cortina (2023) confirmed that when we imply that the results for the WEIRD sample are going to be the same explanation of the non-WEIRD, the knowledge itself can take a turn about the relationship of the variables.

Methodology. Our methodology for conducting this study was carefully crafted to ensure rigor and comprehensiveness and it was initiated by clearly defining our aims and objectives. A systematic literature review is anchored in common principles guided by a research question and a systematic approach (Gough, Thomas, and Oliver, 2019; Rojon et al., 2021). These principles aim to ensure transparency, explanatory depth, inclusivity, and a heuristic approach, as Baxter, Trott, and Ellwood (2023) outlined.

Our systematic review focused on the academic landscape of social innovation literature, exploring articles from thirteen journals without restricting the publication year. The selected journals, namely *Academy of Management Journal*, *Journal of Business Ethics*, *Journal of Business Research*, *Organization Science*, *Research Policy*, *Administrative Science Quarterly*, *Strategic Management Journal*, *Journal of Product Innovation Management*, *Entrepreneurship Theory and Practice*, *Journal of Business Venturing*, *Strategic Entrepreneurship Journal*, *Journal of Management Studies*, *Business Ethics Quarterly*. The journals were chosen based on the top journals from the Chartered Association of Business Schools (ABS) ranking, with the highest score of 4 on the field of innovation, management, and entrepreneurship and journals with the score 3 in the ranking, where they are also present in the list of Top50 Sources from Financial Times (FT), as *Journal of Business Ethics* and *Journal of Business Research*.

For the source of our study, it was used Scopus, as a renowned multidisciplinary database recognized for its extensive collection of peer-reviewed literature in the realm of social science research (Bartol et al., 2014; Norris and Oppenheim, 2007). Our search strategy within Scopus was centered around the keyword "social innovation," a pivotal concept within our study's domain. We sought articles published in high-quality journals renowned for their adherence to rigorous research standards. Specifically, we included articles where the term "social innovation" appeared in the title, abstract, or as a keyword.

Initially, our search yielded a vast number of articles, totaling 84,473, reflecting the broad scope of the topic. To narrow down our focus and ensure relevance, we applied filters, with a particular emphasis on the selected journals known for their prominence in the field. To further refine our dataset and uphold standards of quality, we implemented a series of three filters in the initial screening stage. Firstly, we exclusively considered empirical studies, encompassing both quantitative and qualitative methodologies. Secondly, we prioritized studies that clearly disclosed the contextual setting, recognizing the significance of understanding the place-specific dynamics of social innovation. Thirdly, we concentrated on articles specifically addressing social innovation, thereby homing in on content directly pertinent to our research objectives.

Following a structured approach advocated by Baxter, Trott, and Ellwood (2023), we meticulously detailed the selection process for articles that did not meet our specified criteria. Our aim throughout this process was to identify papers that explicitly delved into the context and application of social innovation practices, thereby enriching our understanding of this dynamic field. Furthermore, we employed VOSViewer software to gain insights into the nodes and their connections due to its user-friendly capability in transforming data into a visual tool. VOSViewer employs two standardized weights, namely the number and total strength of the links, to be the nodal network visually. This graphical representation aids in understanding the significance and strength of the links (Donthu, Kumar, and Pattnaik, 2020).

Results. This section presents the findings of our systematic review, focusing on analyzing empirical research within the context of social innovation. Initially, we found 792 articles within the selected journals, but only 197 papers met the criteria for empirical research within a specific context.

The articles were published between 1996 and 2023. Notably, over 60% of this research appeared in the last seven years (2017 to 2023), showing a growing interest in the topic. This trend aligns with the observations made by Lind, Kang, Ljung, and Rosenbaum (2022), who, in their analysis of social innovation literature applied to multinational companies, found a similar surge in interest (Figure 1).

Figure 1 - Number of articles published over the years from 1996 to 2023.

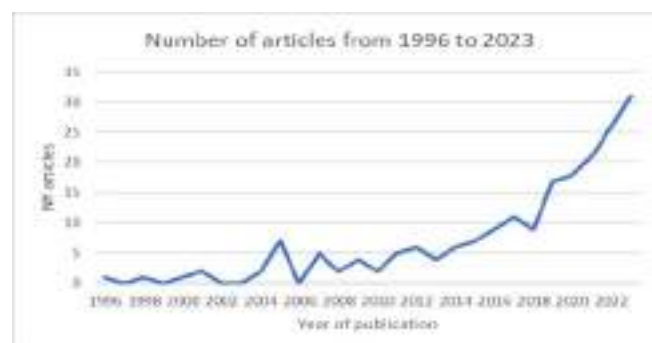
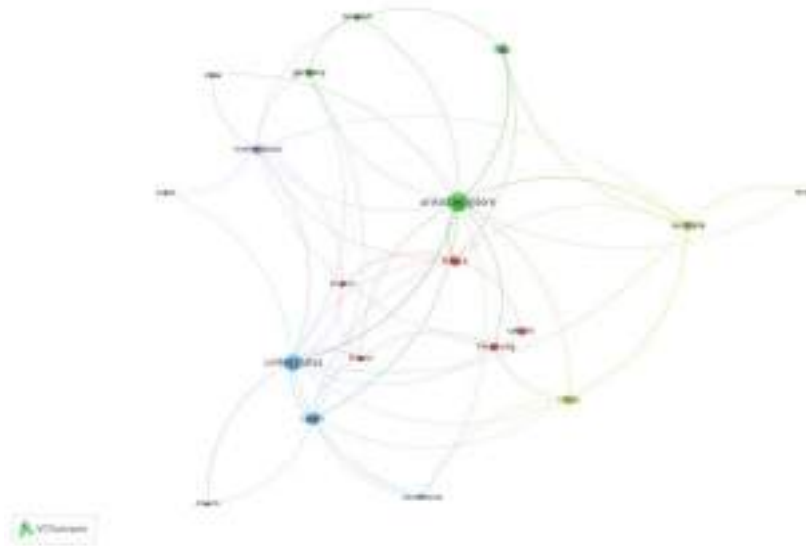


Figure 2 illustrates the central nodes of researchers' countries, generated by VOS viewer with the United States and the United Kingdom occupying central positions. These countries are linked to the results because they are focal points where the context of social innovation articles has been extensively researched and analyzed with a more focused lens. Among the contributors are scholars from Europe (representing the United Kingdom, Netherlands, Spain, Germany, Denmark, Italy, Finland, Belgium, and France), North America (including the United States and Canada), Oceania (with representation from Australia), Latin America only represented by Brazil and Asia (featuring researchers from China, South Korea, India, and Hong Kong).

Figure 2 - Central nodes of researchers' countries.



It is possible to examine the distribution of the research activity in the context of WEIRD within Figure 2, analyzing the country where the research is based. The dominance of the United States and the United Kingdom as the largest nodes aligns with the "WEIRD" characteristics, indicating a concentration of research activity in affluent Western nations with established research infrastructures. Furthermore, the limited participation from countries like Brazil, India, Mexico, and Italy which are typically classified as non-WEIRD or less WEIRD, highlights disparities in research engagement and connectivity. These countries may face challenges in fully participating in the global research community due to factors such as limited resources, access to funding, and research infrastructure. Moreover, non-WEIRD researchers and findings are in a position that they need to engage with WEIRD researchers, while the opposite is not true (Pitesa & Gelfand, 2023).

This analysis underscores the potential bias in social innovation research, where a disproportionate focus on WEIRD countries may skew perspectives and limit the diversity of insights and solutions. Then, from the total of 197 articles, on table 1 it is the breakdown by article per journal, where Journal of Business Research it was the first one, with 72 articles, followed by Research Policy with 53, and Journal of Business Ethics with 28 articles. The Strategic Management Journal had 13 articles, Organization Science, Journal of Business Venturing and Academy of Management Journal had four articles each. And lastly, Entrepreneurship Theory and Practice with three articles. Unfortunately, Administrative Science Quarterly and Business Ethics Quarterly did not have articles that fitted the criteria of choice.

Table 1 - Articles per journal

Journal	Number of Articles
Journal of Business Research	72
Research Policy	53
Journal of Business Ethics	28
Strategic Management Journal	13
Journal of Product Innovation Management	11
Strategic Entrepreneurship Journal	5
Organization Science	4
Academy of Management Journal	4
Journal of Business Venturing	4
Entrepreneurship Theory and Practice	3

As shown in table 1, the Journal of Business Research emerges as a key source. The journal has published 72 relevant empirical articles on the topic of social innovation. The breakdown by region reveals articles analyzing Europe with 28

articles (38.89%), Asia with 20 (27.78%), North America with 7 (9.72%), and 12 in the Group category (16.67%). No articles were found from Latin America (LATAM). Africa and the Middle East contributed 3 and 1 article(s) respectively (4.17% and 1.39%), and Oceania 1 article (1.39%). This distribution could indicate the journal's commitment to diverse perspectives, avoiding an exclusive focus on WEIRD samples. This compromise with diversity can be confirmed with journal website where states “The Journal of Business Research aims to publish research that is rigorous, relevant, and potentially impactful. Recognizing the intricate relationships between the many areas of business activity, JBR examines a wide variety of business decision contexts, processes, and activities, developing insights that are meaningful for theory, practice, and/or society at large.”

Table 2 displays the targeted regions and countries in empirical studies. Europe constitutes the primary focus, with 72 articles spanning Spain, Italy, the UK, France, Germany, and others. Asia follows with 41 studies, covering China, India, Vietnam, and more. North America is represented by 35 studies, predominantly concentrated in the United States. The "Group" category comprises 29 studies examining innovation effects across various countries. Africa is explored in 12 studies, while Latin America and the Caribbean feature six studies. Only one study each focuses on Oceania and the Middle East, centered on Australia and Qatar respectively.

North American region is examined, consisting of 35 studies that span the United States, Canada, and Mexico. Notably, within the North American context, there are only nine studies focused on Mexico and seven on Canada, a percentage of approximately 74% of studies only based in the United States setting.

Several common threads appear in the group categories of the articles selected, reflecting a shared focus on the intersection of innovation, business strategies, and societal impact. The studies collectively underscore the increasing significance of human skills, such as creativity and innovation, in the face of digital transformation, emphasizing individuals' pivotal role and capabilities in navigating evolving industries. The exploration of social capital and collaboration on sharing economy platforms further accentuates the importance of human connections in fostering innovation and service advancements. Additionally, the theme of sustainability permeates multiple abstracts, whether it be through examining the integration of corporate social innovations, assessing the sustainability implications of science funding, or finding factors influencing opportunity-driven entrepreneurship that align with sustainable development goals.

Based on the findings across various categories, it is evident that regions characterized as non-WEIRD or less WEIRD include Asia, Africa, Latin America, Oceania, and the Middle East. Focusing solely on studies conducted within these regions, it is apparent that 30.96% of social innovation research is concentrated in these contexts. However, when including studies categorized under the "Group" category, which encompasses multiple regions, this percentage increases to 45.68%, showing a global vision and a comparison between different scenarios.

Table 2 - Categories of countries per quantity of studies

Categories	Countries	Cont
Europe	Belgium, Bulgaria, England, Finland, France, Germany, Hungary, Italy,72 Netherlands, Norway, Poland, Serbia, Spain, Sweden, Switzerland, Turkey, and the UK.	
Asia	China, Uzbekistan, India, Vietnam, Taiwan, Hong Kong, South Korea, Nepal, Philippines, Japan, Singapore, Indonesia, Taiwan, Sri Lanka.	41
North America	US, Canada and Mexico	35
Group	Combination of countries	29
Africa	Nigeria, Kenya, South Africa, Tanzania, Sub-Saharan Africa.	12
Latin America	Brazil, Paraguay, Colombia, Chile, Argentina, Nicaragua	6
Oceania	Australia	1
Middle East	Qatar	1

Over the years, there has been a growing interest in diversifying the research scope and the study settings. Currently, studies encompass a broader range of countries, reflecting an expanded global perspective. The articles grouped under this label span from 2013 to 2023, proving a sustained commitment to incorporating diverse contexts and international perspectives in scholarly exploration.

In other words, it is possible to conclude that considering 2005 to 2012, the studies focused on specific locations, such as North America, Germany, Bulgaria. And from 2012 to 2022, it focused on studies with a more complex range of countries, combining different characteristics and specific contexts.

Table 3 - Temporal progression of articles across global regions

	Temporal progression of articles across global regions			
	(1996 - 2002)	(2003 - 2008)	(2009 - 2014)	(2015 - 2023)
Europe	2	6	13	51
Asia	1	1	4	35
North America	2	6	2	25
Group	0	1	5	23
LATAM	0	2	1	3
Africa	0	0	2	10
Middle East	0	0	0	1
Oceania	0	0	0	1

Furthermore, given the significant role of social innovation in addressing both social and environmental challenges, it is pertinent to assess the extent to which academia and literature are dedicated to tackling these issues. The Sustainable Development Goals (SDGs) serve as a comprehensive framework guiding global sustainable development efforts over a 15-year period from 2016 to 2030 (United Nations, 2015). This study provides empirical insights into the prioritization of SDGs within the context of the 2030 Agenda's five fundamental pillars, commonly known as the "5 Ps": People, Planet, Prosperity, Peace, and Partnership. These pillars encapsulate the critical domains necessitating attention to fulfill the agenda's objectives (Barbier and Burgess, 2017).

Out of the 197 articles, the majority fall within the partnership category, encompassing studies that emphasize enhanced global solidarity, tailored to specific needs, and involving the participation of all countries, stakeholders, and individuals, with 74 studies. Followed by prosperity, with 57 studies, with a particular focus on scenarios that can provide people with prosperous and fulfilling lives, generating economic, social, and technological progress occurs in harmony with nature. Then, people with 37 articles, with a particular focus on individual human being and focus on end poverty and hunger, planet with 27, to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations, and peace with only two articles, to understand on how to foster peaceful, just and inclusive societies which are free from fear and violence, and also understanding more about the politics setting, such as in Zimbabwe and Norway (Table 4).

Table 4 - Classification of articles per SDGs

Classification of articles per SDGs	N°	%
Partnership	74	37.56%
Prosperity	57	28.94%
People	37	18.78%
Planet	27	13.71%
Peace	2	1.02%
Total	197	100%

Analyzing the outcomes of the review and the theories applied to diverse studies on innovation across the years underscores the richness and interconnectedness of the topics, portraying a dynamic research landscape. The array of theories encompasses traditional perspectives such as Schumpeter's and resource-based views (RBV), as well as socio-cultural theories like Social Cognitive Theory, Social Network Theory, and Social Capital Theory. Institutional and behavioral perspectives, delving into aspects like corporate social responsibility (CSR) and stakeholder engagement, have been prevalent.

In recent times, there has been a discernible shift towards contemporary and multidisciplinary theories, reflecting an increased complexity in comprehending and tackling societal challenges. The ascendancy of theories like Dynamic Capabilities, Effectuation, and Social Exchange Theory underscores adaptability, social interactions, and labor relations. The focus on social innovation, circular innovation, and transformative policies signals an enhanced awareness of global challenges. Furthermore, the surge in theories related to entrepreneurship ecosystems, social movements, and co-creation shows a broader and more interconnected approach to innovation.

The integration of theories related to sustainable development, access and benefit sharing, and the framing on the research such as storytelling studies suggests a heightened emphasis on ethical and inclusive innovation. Moreover, attention to the attention-based views of the firm, digital humanism, and mixed methods signifies acknowledgment of the evolving technological landscape and the need for nuanced research methodologies. The exploration of theories addressing hybrid tensions in organizations, social grid approaches, and the societal reminiscence conceptualization shows a deeper understanding of complex organizational dynamics and their societal implications.

In essence, the evolving theoretical landscape reflects an interdisciplinary and globalized approach to understanding and promoting innovation. The transition from traditional perspectives highlights a broader, interconnected view, emphasizing adaptability, sustainability, and social responsibility amid complex and dynamic challenges.

In conclusion, this comprehensive analysis illustrates the global reach and diversity of social innovation research, spanning regions, individual countries, collaborative groups, and continents, contributing to a nuanced understanding of social innovation dynamics worldwide. The analysis of articles reveals that social innovation is becoming less WEIRD over time, with studies adopting diverse country contexts. This diversification enhances knowledge about legitimacy and different regulations globally. Cultural norms can explain why certain beliefs or behaviors are less likely in one country compared to another, but other country-level differences like education, socioeconomic status, and industrialization remain underexplored and offer potential for future research and theorizing (Alley and Cortina, 2023).

Research limitations. While our study offers valuable insights on the social innovation field, such as the evolutionary analysis on the theories utilized in the empirical studies and the analysis of the context of the studies, it is important to acknowledge its limitations. Inherent to our method, particularly in conducting a systematic literature review, are constraints such as the string used for search terms and the selection criteria limited to top-tier and second-tier journals. It is worth noting that variations in search terms could yield different results, potentially broadening the scope of our findings. Other limitations include journal accessibility and the omission of alternative databases that may have returned a different list of articles, but this was overcome using the biggest database, Scopus, with the highest number of journals associated. Despite these limitations, many research areas possess their own distinct journal communities. Thus, focusing solely on top-tier journals could be considered a limitation, as it might overlook less highly rated publications that are nonetheless crucial for the social innovation community. Additionally, this article represents the first exploration of the concept of spatial (geographical) considerations.

Managerial implications. In this article, businesses can benefit from embracing a proactive approach to innovation that encompasses diversity, sustainability, and social responsibility. By leveraging a variety of theoretical frameworks, they can enhance their strategic decision-making processes. Additionally, gaining insights into recent social innovation contexts through research can inform strategic decision-making. This study is also valuable for academia interested in deepening their understanding of the social innovation field.

Originality of the paper. The paper contributes significantly to the discourse on social innovation by comprehensively analyzing empirical studies within the WEIRD (Western, Educated, Industrialized, Rich, and Democratic) context. It addresses the growing interest in social innovation research, particularly concerning its role in addressing societal grand challenges. The paper maps out the locations of social innovation studies by conducting a systematic literature review spanning seven top-ranked journals in innovation, organization, and management. The analysis reveals evolving keyword emphasis over time and a shift towards research in other countries previously overlooked, reflecting changing priorities within the field. Notably, the paper finds that social innovation research is becoming less WEIRD over time, with studies increasingly adopting diverse country contexts, even though the researcher's location is still WEIRD and focused on specific countries such as United States, United Kingdom, France and Spain. The paper contributes by offering an evolutionary analysis of often employed theories, contextualizing research across geographical locations, and understanding the dynamic development of social innovation research.

Furthermore, the paper addresses the tension in scholarly discourse about the positive impact of social innovation and its application by scholars, communities, and governments. By employing the acronym WEIRD, the paper scrutinizes the nature of researchers and the context of their studies. Through a systematic review method, it analyzes 197 empirical research papers and supplies insights into the geographical distribution of social innovation studies. The findings reveal a shift in focus from specific locations to a more complex range of countries, reflecting a broader global perspective. The paper also contributes by offering insights into the theories applied in social innovation research, highlighting a transition from traditional to contemporary and multidisciplinary perspectives. Overall, the paper enhances understanding of social innovation dynamics worldwide and underscores the importance of considering diverse contexts in addressing societal challenges and promoting positive societal outcomes.

References

- ALLEY L., CORTINA J.M. (2023), "WEIRDness abounds! Sample characteristics, restricted variance, and why they matter for international selection and assessment research", *International Journal of Selection and Assessment*, vol. 31, n. 2, pp. 199-211.
- ARNETT J.J. (2008), "The Neglected 95%: Why American Psychology Needs to Become Less American", *American Psychologist*, vol. 63, n. 7, pp. 602-614.
- BARBIER E.B., BURGESS J.C. (2017), "The Sustainable Development Goals and the systems approach to sustainability", *Economics*, Published by De Gruyter Open Access. <https://doi.org/10.5018/economics-ejournal.ja.2017-28>
- BARTOL T., BUDIMIR G., DEKLEVA-SMREKAR D., PUSNIK M., JUZNIC P. (2014), "Assessment of research fields in Scopus and Web of Science in the view of national research evaluation in Slovenia", *Scientometrics*, vol. 98, n. 2, pp. 1491-1504.
- BAXTER D., TROTT P., ELLWOOD P. (2023), "Reconceptualising innovation failure", *Research Policy*, vol. 52, n. 7, pp. 104811.
- BECKMAN C.M., ROSEN J., ESTRADA-MILLER J., PAINTER G. (2023), "The social innovation trap: Critical insights into an emerging field", *Academy of Management Annals*, vol. 17, n. 2, pp. 684-709.
- DONTHU N., KUMAR S., PATTNAIK D. (2020), "Forty-five years of Journal of Business Research: A bibliometric analysis", *Journal of Business Research*, vol. 109, pp. 1-14.
- GEORGE G., HOWARD-GRENVILLE J., JOSHI A., TIHANYI L. (2016), "Understanding and tackling societal grand challenges through management research", *Academy of Management Journal*, vol. 59, n. 6, pp. 1880-1895.
- GOUGH D., THOMAS J., OLIVER S. (2019), "Clarifying differences between reviews within evidence ecosystems", *Systematic Reviews*, vol. 8, n. 1, pp. 170.

- HAGEDOORN J., HAUGH H., ROBSON P., et al. (2023), "Social innovation, goal orientation, and openness: Insights from social enterprise hybrids", *Small Business Economics*, vol. 60, pp. 173-198.
- HENRICH J., BOYD R., BOWLES S., CAMERER C., FEHR E., GINTIS H., MCELREATH R., ALVARD M., BARR A., ENSMINGER J., HENRICH N.S., HILL K., GIL-WHITE F., GURVEN M., MARLOWE F.W., PATTON J.Q., TRACER D. (2005), "Economic man in cross-cultural perspective: Behavioral experiments in 15 small-scale societies", *Behavioral and Brain Sciences*, vol. 28, n. 6, pp. 795-815.
- HENRICH J., HEINE S.J., NORENZAYAN A. (2010), "The weirdest people in the world?", *Behavioral and Brain Sciences*, vol. 33, pp. 61-135.
- LIND C.H., KANG O., LJUNG A., ROSENBAUM P. (2022), "Involvement of multinational corporations in social innovation: Exploring an emerging phenomenon", *Journal of Business Research*, vol. 151, pp. 207-221.
- NORRIS M., OPPENHEIM C. (2007), "Comparing alternatives to the Web of Science for coverage of the social sciences' literature", *Journal of Informetrics*, 1, n. 2, pp. 161-169.
- PITESA M., GELFAND M.J. (2023), "Going beyond Western, Educated, Industrialized, Rich, and Democratic (WEIRD) samples and problems in organizational research", *Organizational Behavior and Human Decision Processes*, vol. 174, 104212.
- ROJON C., OKUPE A., MCDOWALL A. (2020), "Utilization and development of systematic reviews in management research: What do we know and where do we go from here?", *International Journal of Management Reviews*, vol. 23, pp. 191-223.
- SANTOS F.M. (2010, February 15), A Positive Theory of Social Entrepreneurship. INSEAD Working Paper No. 2009/23/EFE/INSEAD Social Innovation Centre. Retrieved from SSRN: <https://ssrn.com/abstract=1553072>
- SMITH B.R., KISTRUCK G.M., CANNATELLI B. (2016), "The Impact of Moral Intensity and Desire for Control on Scaling Decisions in Social Entrepreneurship", *Journal of Business Ethics*, vol. 133, n. 4, pp. 677-689.
- SEELOS C., MAIR J. (2017), *Innovation and Scaling for Impact: How Effective Social Enterprises Do It*. Stanford, CA: Stanford University Press.
- UNITED NATIONS (2015), *Transforming Our World: the 2030 Agenda for Sustainable Development*. New York: United Nations, 2015.
- WHITEMAN G., WALKER B., PEREGO P. (2013), "Planetary boundaries: Ecological foundations for corporate sustainability", *Journal of Management Studies*, vol. 50, n. 2, pp. 307-336.
- WEERAWARDENA J., SALUNKE S., HAIGH N., SULLIVAN MORT G. (2021), "Business model innovation in social purpose organizations: Conceptualizing dual social-economic value creation", *Journal of Business Research*, vol. 125, pp. 762-771.

Open Innovation search strategies and Innovation performance: differential moderating effects of Big Data Characteristics

GIULIO FERRIGNO¹ SAVERIO BARABUFFI² ENRICO MARCAZZAN³ ANDREA PICCALUGA⁴

Abstract

This extended abstract examines the relationship between open innovation search strategies (breadth and depth) and innovation performance in SMEs. Specifically, it invokes a big data perspective to propose the differential moderating effects of four dimensions of big data characteristics, namely big data volume, variety, velocity, and veracity. Based on a sample of Italian SMEs, our statistical analysis intends to show the positive combinative effects of some big data characteristics and open innovation breadth on radical innovation outcomes and those of other big data characteristics and open innovation depth on incremental innovation outcomes. The findings of differential moderating effects underscore the need to assess the boundary conditions within which OI positively impacts on innovation outcomes. Additionally, they provide valuable insights to managers regarding the significance of big data characteristics in enhancing innovation outcomes through OI strategies.

Key words: open innovation; incremental innovation; SMEs; big data; Italy

Framing of the research. Since Chesbrough's seminal work in 2003, open innovation has increasingly captured the interest of both scholars and practitioners (Bogers et al., 2017; Dahlander et al., 2021), particularly in the domain of R&D management (Ferrigno, Crupi, Di Minin, Ritala, 2023). Open innovation facilitates firms in sourcing external ideas and resources, collaborating on the development of new products and processes with external partners, and leveraging internal ideas that deviate from the firm's current business model (Enkel et al., 2009; Ferrigno, Del Sarto, Cucino, & Piccaluga, 2022; Messeni Petruzzelli et al., 2022: 617), thereby influencing both financial and non-financial performance (Carrasco-Carvajal et al., 2023; Martín-Peña et al., 2023).

A significant focus lies on firms' search strategies within open innovation (Greco et al., 2015; Sà et al., 2023), with established literature supporting the concept of two distinct open innovation search strategies: (1) open innovation breadth, which denotes the number of sources utilized for innovation; and (2) open innovation depth, indicating the level of involvement of these sources in the innovation process (Laursen and Salter, 2006; Messeni Petruzzelli et al., 2022). Both these strategies shape firms' propensity towards acquiring external knowledge (Garriga et al., 2013; Laursen and Salter, 2006) from various sources, including suppliers, customers, competitors, financial institutions, consulting firms, other private enterprises, universities, research centers, and public organizations (Messeni Petruzzelli et al., 2022). Existing literature has shown that open innovation search strategies affect firms' innovation performance (Cruz-González et al., 2015; Del Sarto et al., 2023; Greco et al., 2016; Henttonen et al., 2011). However, within the contemporary landscape, the proliferation of big data inundates the global sphere incessantly, with its growth trajectory expanding approximately tenfold every quinquennium (Del Vecchio et al., 2018; Hendrickson, 2010; Hilbert & López, 2011). Characterized by datasets of vast proportions that would necessitate significant storage capacities and temporal investments for analysis under conventional systems (Kaisler et al., 2013; Ward & Barker, 2013), big data assumes paramount importance as a pivotal competitive advantage and strategic resource, particularly discernible within the milieu of SMEs (Del Vecchio et al., 2018). In this regard, research has shown that big data may affect open innovation search strategies (Del Vecchio et al., 2018; Ferrigno, Barabuffi, Marcazzan, Piccaluga, 2023). Other scholars found that big data can also bring firms to improve their innovation performance (Ferrigno, Marcazzan, Barabuffi, Piccaluga, 2024; Johnson et al., 2017). Taken together, these streams of literature suggest that big data might play a role in the relationship between open innovation and incremental innovation in SMEs. However, scant research has analyzed whether the relationship between open innovation and incremental innovation is moderated by big data.

¹ Sant'Anna School of Advanced Studies, Pisa
e-mail: giulio.ferrigno@santannapisa.it

² Sant'Anna School of Advanced Studies, Pisa
e-mail: saverio.barabuffi@santannapisa.it

³ Sant'Anna School of Advanced Studies, Pisa
e-mail: enrico.marcazzan@santannapisa.it

⁴ Sant'Anna School of Advanced Studies, Pisa
e-mail: andrea.piccaluga@santannapisa.it

Purpose of the paper. Our paper aims at covering this gap by unveiling what v of the big data can play a moderation effect on the relationship between open innovation and incremental innovation. Big data is a multifaceted concept (Cappa et al., 2021). Thus, this study we refer to the most used characteristics of the big data (also known as 4Vs, see Ghasemaghaei & Calic, 2019): volume (i.e., the amount of data collected); variety (i.e., the assortment of data collected per observation); velocity (i.e., the speed of generating and analyzing data), and veracity (i.e., the reliability and insightfulness of data) (Cappa et al., 2021). Adopting these dimensions, we explore the following research question: what is the moderating effect of the volume, the variety, the velocity, and the veracity of big data on the relationship between SMEs' open innovation and innovation performance?

To address this research question, we will follow recent studies that have investigated moderating effects around the the relationship between open innovation and firm's innovation performance (Cruz-González et al., 2015; Ovuakporie et al., 2021). More specifically, we will firstly hypothesize that the relationship between open innovation search strategies (breadth and depth) and innovation performance (radical and incremental) is positive. After we will assume that some big data characteristics can moderate positively this relationship while others moderate it negatively.

Methodology. To test our hypotheses, we will gather evidence on the adoption of Big Data from the perspective of SMEs at the individual firm level. To ensure internal validity, we have chosen the Italian context, aiming to control for normative environment, contextual munificence, and entrepreneurial opportunities (Beckman & Burton, 2008). Italy is characterized by a significant prevalence of SMEs, employing over 90% of the national workforce (Cucino et al., 2024; ISTAT, 2022). According to a study by the Italian Ministry of Economic Development (MISE, 2020), Italy demonstrates a notable percentage of firms transitioning towards Industry 4.0. Over the last decade, the Italian Government has initiated numerous plans and interventions to stimulate firms' digitalization and the adoption of Industry 4.0 technologies, including Big Data. Therefore, given Italy's distinctive economic structure primarily based on SMEs and recent national policies aimed at accelerating digitalization, Italy provides an intriguing setting to explore SMEs' behaviors concerning the adoption of Big Data (Martinelli et al., 2021).

To construct our sample, we will utilize the Italian website "registroimprese" to identify companies involved in developing Big Data technologies. A preliminary search on this website yielded an initial sample of 4357 companies. Since our focus is primarily on analyzing the moderating effects of big data characteristics on the relationship between open innovation search strategies and SMEs' innovation performance, we will narrow down the sample by selecting companies with fewer than 250 employees and a turnover below €50 million (Messeni Petruzzelli et al., 2022). Subsequently, we will employ the Orbis database to access the email addresses and main contacts of these companies. Additionally, we will manually search companies' websites for data that cannot be downloaded. We intend to reach out to the selected Italian SMEs and distribute an online structured questionnaire to be completed by their CEOs or founders. Our objective is to gather more than 150 responses to facilitate a quantitative analysis of the moderating effects of big data characteristics on the relationship between open innovation search strategies and SMEs' innovation performance.

We will test the hypotheses by running several OLS regressions in which the dependent variable is represented by incremental and radical innovation, while the main independent variables are represented by open innovation breadth, open innovation depth and 4Vs of big data. Moreover, the main focus of our analysis is understanding the moderating effect of big data characteristics on open innovation strategies, hence we introduce interaction terms among our main independent variables.

As regards the dependent variables (radical and incremental innovation performance), we will follow the methodologies outlined by Subramanian & Youdt (2005) and Mikalef et al. (2019) and assess radical and incremental innovation using a three-item, 7-point Likert scale through elaborating specific questions that capture these concepts. For the regression analysis, we consider the average score of the multiple responses.

Regarding the operationalization of variables, we will follow the measures used in previous studies on Open innovation search strategies (Messeni Petruzzelli et al., 2022, based on Laursen and Salter, 2006). The explanatory variables of open innovation search strategies (namely (1) open innovation breadth, which denotes the number of sources utilized for innovation; and (2) open innovation depth, indicating the level of involvement of these sources in the innovation process (Laursen and Salter, 2006; Messeni Petruzzelli et al., 2022)) will be computed as it follows. Firstly, we will operationalize open innovation breadth as the count of sources (including suppliers, customers, competitors, financial companies, consulting companies, other private companies, universities, research centers, and other public organizations) collaborating with the SMEs to foster innovative activities. Secondly, open innovation depth will be operationalized as the count of sources with which the firm collaborates "very often" (Messeni Petruzzelli et al., 2022). The variables are computed by summing the number of sources and the number of sources with which a firm collaborates "very often". Consequently, their value ranges between zero (indicating no collaboration, minimum) and eight (maximum), and we will treat Open innovation search strategies as categorical variables.

To gauge the "4Vs" of big data, we draw upon insights from prior research on big data characteristics. Consistent with the approach outlined by Johnson et al. (2017) and Ghasemaghaei & Calic (2020), we evaluate "big data volume," "big data velocity," and "big data variety" using a 7-point Likert scale, ranging from 1 ("strongly disagree") to 7 ("strongly agree"). Conversely, to operationalize "big data veracity," we rely on the work of Ghasemghaei (2021). The Likert scale allows us to assess the extent of data collected ("big data volume") (Cappa et al., 2021), the diversity of data per observation ("big data variety") (Cappa et al., 2021), the pace of data collection and analysis ("big data velocity") (Ghasemaghaei & Calic, 2020), and the reliability of data collection and analysis ("big data veracity") (Ghasemaghaei, 2021). The measures of "big data volume" and "big data velocity" comprise 4 items each, while those of "big data

variety” and “big data veracity” consist of 3 items. Specifically, for the regression analysis, we consider the average score of the multiple responses.

Furthermore, consistent with previous studies, our model will include the following control variables: (1) whether the SME operates in a high-tech industry or not (Messeni Petruzzelli et al., 2022), (2) the SME’s age (Kelly & Amburgey, 1991), (3) the SME’s size (Arbore & Ordanini, 2006; Horváth & Szabó, 2019), (4-5) the SME’s potential and realized absorptive capacity (i.e., the R&D expenses on total revenue and the number of patents in the last 10 years; see Cassetta et al., 2020; Zahra & George, 2002), and (6) the digital skills of the SME’s human resources (measured as the percentage of employees with a STEM degree; see Agostini & Filippini, 2019; Eller et al., 2020; Giotopoulos et al., 2017; Horváth & Szabó, 2019).

Results. In general, we expect that big data characteristics will moderate the relationship between open innovation search strategies and innovation performance. However, taking into consideration the different v of big data (volume, variety, velocity, and veracity) and also the open innovation search strategies (breadth and depth) we also expect that the magnitude of these moderating effects could be different. In particular, we anticipate that some big data characteristics are more important than others in enhancing/downgrading the impact of open innovation breadth/depth on SMEs’ incremental/radical innovation.

Research limitations. Although this extended abstract may contribute to our understanding of big data characteristics as moderating variables that affect open innovation search strategies and SMEs’ innovation performance, many limitations should be taken into consideration. First, we identified the open innovation search strategies for our study based on the framework established by Messeni Petruzzelli et al. (2021; which is based on Laursen and Salter, 2006). However, we recognize the existence of other open innovation conceptualizations such as those highlighted in different studies that we have not included in our questionnaire. For example, Gassmann et al. (2010) adopt a ‘process perspective,’ categorizing these practices into inbound, outbound, and coupled OI processes; while Spithoven et al. (2013) suggest four open innovation practices, such as (1) search for external sources of innovation, (2) the acquisition of external R&D, (3) the use of collaborative innovation partners and (4) the exploitation of available IP protection mechanisms. Future research could replicate our methodology while also considering alternative open innovation conceptualizations identified in other studies.

Second, we have scrutinized the relationship between open innovation search strategies and innovation performance and the moderating role of Big Data characteristics within a highly specific setting: Italian (SMEs) listed on the Italian website “registroimprese”. We acknowledge the limited generalizability of our findings to this particular organizational category operating within the confines of this specific national context. Future investigations could explore the moderating effects of big data on open innovation impact on SMEs innovation performance across diverse geographical locations. Moreover, while our study primarily focuses on SMEs, forthcoming research could also examine these relationships on a broader spectrum of enterprises, encompassing established firms, larger corporations, and startups alike.

Third, in this study we analyzed the moderating role played by the most explored v of big data. However, other unexplored dimensions of interest in big data involve variability in data flow, acknowledging the inconsistencies within datasets (Katal et al., 2013), and the realm of big data visualization, which concerns organizations’ ability to formulate pertinent inquiries to extract meaningful value from their big data initiatives (Simon, 2014). Future research endeavors could delve into these dimensions of big data to gain a more comprehensive understanding of how they influence open innovation impact on SMEs’ innovation performance.

Managerial implications. The expected findings might have implications for managerial practices. More specifically, we emphasize that a more cooperative and collaborative relationship between SMEs and other organizations may facilitate their innovation performance, which is fundamental for those companies that are facing organizational and business challenges that contain their future growth. In general, we expect that open innovation search strategies may allow SMEs to increase their radical and incremental innovation performance. More specifically, we highlight that the magnitude and the path that explain this relationship could be different, depending on the v of big data.

Our research holds potential significance for policymakers as well. Specifically, we aim to demonstrate the importance of policymakers supporting firms in developing tools for analyzing big data. These tools offer valuable insights that facilitate interactions among firms, enabling the exchange of knowledge crucial for enhancing their innovation performance. Therefore, our study underscores the importance of policymakers fostering an environment conducive to the development and utilization of big data analysis tools, ultimately contributing to improved innovation outcomes within firms.

Originality of the paper. The main originality of the paper relies on its focus on the moderating effects of big data characteristics on the relationship between open innovation search strategies and innovation performance. Theoretically speaking, our study could suggest important and peculiar dimensions of big data that may increase or decrease the effect of open innovation search and breadth strategies on SMEs’ radical and incremental innovation. Practically speaking, our study can be used not only by SMEs’ owner-managers, but also by policymakers in order to promote policies in favor of more cooperative and collaborative behavior in the SMEs’ ecosystem by leveraging Big Data.

References

- AGOSTINI L., FILIPPINI R. (2019), "Organizational and Managerial Challenges In The Path Toward Industry 4.0", *European Journal of Innovation Management*, vol. 22, n. 3, pp. 406-421.
- ARBORE A., ORDANINI A. (2006), "Broadband divide among SMEs: The role of size, location and outsourcing strategies", *International Small Business Journal*, vol. 24, n. 1, pp. 83-99.
- BECKMAN C.M., BURTON M.D. (2008), "Founding the future: path dependence in the evolution of top management teams from founding to IPO", *Organization Science*, vol. 19, n. 1, pp. 3-24.
- BOGERS M., ZOBELA K., AFUAH A., ALMIRALL E., BRUNSWICKER S., DAHLANDER L., FREDRIKSEN L., GAWER A., GRUBER M., HAEFLIGER S., HAGENDOORN J., HILGERS D., LAURSEN K., MAGNUSSON M.G., MAJCHRZAK A., MCCARTHY I.P., MOESLEIN K.M., NAMBIAN S., PILLER F.T., RADZIOW A., ROSSI-LAMASTRA C., SIMS J., TER WAL A.L.J. (2017), "The open innovation research landscape: established perspectives and emerging themes across different levels of analysis", *Industry and Innovation*, vol. 24, n. 1, pp. 8-40.
- CAPPA F., ORIANI R., PERUFFO E., MCCARTHY I. (2021), "Big data for creating and capturing value in the digitalized environment: unpacking the effects of volume, variety, and veracity on firm performance", *Journal of Product Innovation Management*, vol. 38, n. 1, pp. 49-67.
- CARRASCO-CARVAJAL O., CASTILLO-VERGARA M., GARCIA-PEREZ-DE-LEMA D. (2023), "Measuring open innovation in SMEs: an overview of current research", *Review of Managerial Science*, vol. 17, n. 2, pp. 397-442.
- CASSETTA E., MONARCA U., DILEO I., DI BERARDINO C., PINI M. (2020), "The relationship between digital technologies and internationalisation. Evidence from Italian SMEs", *Industry and Innovation*, vol. 27, n. 4, pp. 311-339.
- CRUZ-GONZALEZ J., LOPEZ-SAEZ P., NAVAS-LOPEZ J.E., DELGADO-VERDE M. (2015), "Open search strategies and firm performance: The different moderating role of technological environmental dynamism", *Technovation*, vol. 35, pp. 32-45.
- CUCINO V., FERRIGNO G., CRICK J. PICCALUGA A. (2024). "Identifying entrepreneurial opportunities during crises: a qualitative study of Italian firms". *Journal of Small Business and Enterprise Development*, vol. 31, n. 8, pp. 47-76.
- DAHLANDER L., GANN D.M., WALLIN M.W. (2021), "How open is innovation? A retrospective and ideas forward", *Research Policy*, vol. 50, n. 4, 104218.
- DEL VECCHIO P., DI MININ A., PETRUZZELLI A.M., PANIELLO U., PIRRI S. (2018), "Big data for open innovation in SMEs and large corporations: Trends, opportunities, and challenges", *Creativity and Innovation Management*, vol. 27, n. 1, pp. 6-22.
- DEL SARTO N., FERRIGNO G., PARIDA V., DI MININ A. (2023), "Do start-ups benefit from coworking spaces? An empirical analysis of accelerators' programs", *Review of Managerial Science*, vol. 17, n. 7, pp. 2471-2502.
- ELLER R., ALFORD P., KALLMUNZER A., PETERS M. (2020), "Antecedents, Consequences, And Challenges of Small And Medium-Sized Enterprise Digitalization", *Journal of Business Research*, vol. 112, pp. 119-127.
- ENKEL E., GASSMAN O., CHESBROUGH H. (2009), "Open R&D and open innovation: exploring the phenomenon", *R&D Management*, vol. 39, n. 4, pp. 311-316.
- FERRIGNO G., BARABUFFI S., MARCAZZAN E., PICCALUGA A. (2023), "What Open Innovation practices enhance SMEs' adoption of Big Data?", *Sinergie SIMA Management Conference Proceedings*.
- FERRIGNO G., CRUPI A., DI MININ A., RITALA P. (2023), "50+ years of R&D Management: a retrospective synthesis and new research trajectories", *R&D Management*.
- FERRIGNO G., MARCAZZAN E., BARABUFFI S., PICCALUGA A., (2024), "Big data for SMEs' radical product innovation: unpacking the effects of big data characteristics", *Working Paper*.
- FERRIGNO G., DEL SARTO N., CUCINO V., PICCALUGA A. (2022). "Connecting organizational learning and open innovation research: An integrative framework and insights from case studies of strategic alliances", *The Learning Organization*, vol. 29, n. 6, pp. 615-634.
- GASSMAN O., ENKEL E., CHESBROUGH H. (2010), "The future of open innovation", *R&D Management*, Vol. 40, n. 3, pp. 213-221.
- GHASEMAGHEI M. (2021), "Understanding the impact of big data on firm performance: The necessity of conceptually differentiating among big data characteristics", *International Journal of Information Management*, vol. 57, 102055.
- GHASEMAGHEI M., CALIC G. (2019), "Does big data enhance firm innovation competency? The mediating role of data-driven insights", *Journal of Business Research*, vol. 104, pp. 69-84.
- GIOTOPOULOS I., KONTOLAIMO A., KORRA E., TSAKANIKAS A. (2017), "What drives ICT adoption by SMEs? Evidence from a large-scale survey in Greece". *Journal of Business Research*, vol. 81, pp. 60-69.
- GRECO M., GRIMALDI M., CRICELLI L. (2016), "An analysis of the open innovation effect on firm performance", *European Management Journal*, vol. 34, n. 5, pp. 501-516.
- GRECO M., GRIMALDI M., CRICELLI L. (2015), "Open innovation actions and innovation performance: A literature review of European empirical evidence", *European Journal of Innovation Management*, vol. 18, n. 2, pp. 150-171.
- HENDRICKSON S. (2010), "Getting Started with Hadoop with Amazon's Elastic MapReduce", *EMR-Hadoop Meetup*, Boulder/Denver.
- HENTONNEN K., RITALA P., JAUHAINEN T. (2011), "Exploring open search strategies and their perceived impact on innovation performance-empirical evidence" *International Journal of Innovation Management*, vol. 15, n. 03, pp. 525-541.
- HILBERT M., LÓPEZ P. (2011), "The world's technological capacity to store, communicate, and compute information", *Science*, vol. 332, pp. 60-65.
- HORVATH D., SZABÓ R.Z. (2019), "Driving forces and barriers of Industry 4.0: Do multinational and small and medium-sized companies have equal opportunities?" *Technological forecasting and social change*, vol. 146, pp. 119-132.
- JOHNSON J. S., SCOTT B. F., and HANNAH S. L. (2017), "Big Data Facilitation, Utilization, and Monetization: Exploring the 3Vs in a New Product Development Process", *Journal of Product Innovation Management*, vol. 34, n. 5, pp. 640-658.
- KAISLER S., ARMOUR F., ESPINOSA J.A., MONEY W. (2013), "Big data: Issues and challenges moving forward", *46th Hawaii International Conference on System Sciences*, Wailea, USA, pp. 995-1004.
- KATAL A., WAZID M., GOUDAR R.H. (2013), "Big data: Issues, challenges, tools and Good practices", *Proceeding of the Sixth International Conference on Contemporary Computing (IC3)*, IEEE, pp. 404-409.

- KELLY D., AMBURGEY T.L. (1991), "Organizational inertia and momentum: A dynamic model of strategic change", *Academy of management journal*, vol. 34, n. 3, pp. 591-612.
- LAURSEN K., SALTER A. (2006), "Open for innovation: the role of openness in explaining innovation performance among UK manufacturing firms", *Strategic management journal*, vol. 27, n. 2, pp. 131-150.
- MARTINELLI A., MINA A., MOGGI M. (2021), "The enabling technologies of industry 4.0: examining the seeds of the fourth industrial revolution", *Industrial and Corporate Change*, vol. 30, n. 1, pp. 161-188.
- MARTIN-PENA M.L., SANCHEZ-LOPEZ J.M., KAMP B., GIMENEZ-FERNANDEZ E.M. (2023), "The innovation antecedents behind the servitization-performance relationship", *R&D Management*, vol. 53, n. 3, pp. 459-480.
- MESSENI PETRUZZELLI A., MURGIA G., PARMENTOLA A. (2022), "How can open innovation support SMEs in the adoption of I4.0 technologies? An empirical analysis", *R&D Management*, vol. 52, n. 4, pp. 615-632.
- MIKALEF P., BOURA M., LEKAKOS G., KROGSTIE J. (2019), "Big Data Analytics Capabilities and Innovation: The Mediating Role of Dynamic Capabilities and Moderating Effect of the Environment", *British Journal of Management*, vol. 30, pp. 272-298.
- MISE (2020), "Relazione sugli investimenti di sostegno alle attività economiche e produttive 2020", Roma: Ministero dello Sviluppo Economico.
- OVUAKPORIE O.D., PILLAI K.G., WANG C., WEI Y. (2021), "Differential moderating effects of strategic and operational reconfiguration on the relationship between open innovation practices and innovation performance", *Research Policy*, vol. 50, n. 1, 104146.
- SA' T., FERREIRA J.J., JAYANTILAL S. (2023), "Open innovation strategy: a systematic literature review", *European Journal of Innovation Management*.
- SIMON P. (2014), *The visual organization: Data visualization, big data, and the quest for better decisions*, John Wiley & Sons.
- SPITHOVEN A., VANHAVERBEKE W., ROJAKKERS, N. (2013), "Open innovation practices in SMEs and large enterprises", *Small business economics*, vol. 41, pp. 537-562.
- SUBBRANMANIAM M., YOUNDT M.A. (2005), "The influence of intellectual capital on the types of innovative capabilities", *Academy of Management Journal*, vol. 48, pp. 450-463.
- WARD J.S., BARKER A. (2013), "Undefined by data: A survey of big data definitions", *arXiv preprint*, arXiv:1309.5821.
- ZAHRA S.A., GEORGE G. (2002), "Absorptive capacity: A review, reconceptualization, and extension", *Academy of management review*, vol. 27, n. 2, pp. 185-203.

The role of digital platforms in the university exchange of knowledge: the case of Knowledge Share

MARIAPIA CUTUGNO¹ TINDARA ABBATE² FABRIZIO CESARONI³

Abstract

The concept of digital platforms, from an Open Innovation (OI) perspective, has been a fairly important topic to study in all its characteristics in recent years. This is because OI platforms promote continuous interaction and greater participation between all parties involved, having a significant importance in intermediation between businesses and universities. Open Innovation Digital Platforms (OIDPs) can be considered a specific type of Open Innovation Intermediaries, taking a central role in stimulating, creating and maintaining an ecosystem of successful innovation through continuous interaction and participation between all parties involved. The work intends to investigate the role assumed by an OIDP in the process of exchanging knowledge between the world of research and business, which is increasingly demanding from a technological point of view. We use the case study methodology based on semi-structured interviews. The results underline that the main role of the platform is that of a "bridge" in the process of exchanging knowledge between the world of research (universities, public research centers and private individuals) and companies that move within the environment in which they operate to interface with entities that can design, develop and supply the technology they request. This work records, on the one hand, the limitations of a qualitative analysis based on case studies, on the other, it provides practical and theoretical implications, making an important contribution to the relevant research line.

Key words: Open Innovation; Open Innovation Intermediary; Open Innovation Digital Platform; Knowledge; Competences.

Framing of the research. *In recent times, the concept of digital platforms has become increasingly relevance for scholars and managers (De Falco et al., 2017; Hossain and Lassen, 2017). Platforms can be defined as “a set of people, processes, interfaces and artefacts, whose engagement design offers environments of interactions that intensify the actions of agents in creating value” (Ramaswamy and Ozcan 2014, p. 34).*

The main focus of past studies has been to investigate how digital platforms, with their advanced web tools and technologies, can open up new ways for organizations to collaborate with external sources to acquire and develop ideas, technologies and knowledge (Hossain and Lassen, 2017). Indeed, digital platforms represent "an important vector for the search for external knowledge" (Hossain and Lassen, 2017, p. 55) and, consequently, for activating new combinations of knowledge and creating new and useful solutions to innovation problems. They enable organizations to bring globally distributed knowledge to solve problems that organizations cannot solve internally on their own (e.g. Jeppesen and Lakhani, 2010).

In digital platforms, the heterogeneity of knowledge stimulates innovation because digital platforms tend to attract complementary innovators (Boudreau, 2010).

Although a significant stream of literature has focused on studying the dynamics of two-sided platforms (Rochet and Tirole, 2003; Economides and Katsamakas, 2006; Hagiu, 2009), OI platforms - a specific type of two-sided platform - (De Falco et al., 2017) represent a less investigated area. In this regard, OI platforms can be understood, essentially, as useful mechanisms for matching solution seekers on the one hand with potential solvers on the other (Eisenmann et al., 2006). This is because OI platforms promote continuous interaction and greater participation between all parties involved. For this reason, OI platforms have “a far-reaching impact on how actors collaborate and innovate together across networks, alliances and business ecosystems. These platforms can be described as virtual environments where heterogeneous entities (e.g. experts, specialized companies, users, R&D laboratories, universities, etc.) are involved in knowledge transfer and integration processes to solve OI challenges (Sawhney et al., 2003; Jeppesen and Lakhani, 2010). This is related to the idea that Open Innovation (OI) approach suggests that companies can respectively use knowledge

¹ University of Messina
e-mail: mcutugno@unime.it

² University of Messina
e-mail: tindara.abbate@unime.it

³ University of Messina
e-mail: fabrizio.cesaroni@unime.it

inflows to accelerate their internal innovation processes and knowledge outflows to expand their markets, making available knowledge, intellectual property rights (IP) and/or patents to help partners innovate (Chesbrough, 2006).

Given that Open Innovation Intermediaries (OIIIs) use digital platforms to support OI processes, OIDPs can be considered a specific type of OII, taking a central role in stimulating, creating and maintaining a successful innovation ecosystem (Sieg et al., 2010).

An OII is defined as an “organization [...] that provides a supporting role for collaboration between two or more parties during various phases of the innovation process” (Howells, 2006, p. 721), and such organizations have been recognized as being central to implementing and maintaining a successful innovation ecosystem (Sieg et al., 2010; De Silva et al., 2018). In this sense, these organizations are able to act as knowledge repositories, encouraging new combinations of knowledge (Howells, 2006). Although past research has extensively studied the roles and contributions of OIIs and OIDPs, there are no studies investigating the role that these intermediaries assume in the interaction between the world of research and businesses.

OIIs support and are involved in the management and integration of the knowledge base of innovation ecosystems (De Silva et al., 2018). In this context, OIDPs perform tasks ranging from connecting a wide variety of parties for collaboration to building and brokering relationships and bridging a wide range of gaps in knowledge, competences and capabilities (Sieg et al., 2010; Agogue et al., 2013; Mele and Russo-Spena, 2015; Aquilani et al., 2016; De Silva et al., 2018). They can be observed as “an important vector for external knowledge seeking” (Hossain and Lassen 2017, p. 55) and for activating valuable combinations of internal and external knowledge sources with the aim of facilitating the flow of collaboration and sharing knowledge to innovation problems (Aquilani et al. 2016).

Specifically, this type of digital platforms involves the following subjects: platform leaders; actors on different sides of the platform; insert suppliers into the platform leader; and other bodies and institutions that interact with or influence the value and development of a multi-sided platform (Abbate et al., 2021). In this regard, the leader of a platform must design the governance structure, and therefore its own business model of its ecosystem, defining which parties can access and how they can do it, how open the platform is to external suppliers for creating products /services, how the parties can interact, and what the structure of the interactions between the parties on the different sides of the platform is (Abbate et al., 2021; Baglieri et al., 2018).

Purpose of the paper. In recent years the OIDP phenomenon has been increasing, becoming a suitable opportunity to facilitate and support knowledge creation and sharing processes and to improve innovation paths (Abbate et al. 2021). In particular, these platforms can allow organizations to explore suitable external opportunities for new ideas, knowledge and solutions with the involvement and participation of a broad set of external knowledge, decreasing the distance between ecosystem actors. However, despite the rapid accumulation of research contributions on OIDP, as well as the growing relevance of this phenomenon for knowledge sharing and open innovation processes, the number of studies investigating the role of these platforms in the dissemination of knowledge and expertise are still scarce.

For this reason, this work intends to investigate the role assumed by an OIDP in the process of exchanging knowledge and competences between the world of research and the world of business, which is increasingly demanding from a technological point of view.

Methodology. Taking into account the novelty of the phenomenon to be investigated and the inductive nature of the research questions, this study adopts a qualitative method, based on a case study of the digital platform “Knowledge Share” (KS), which allows the exploration of the phenomenon object of this work in its context, using a wide range of data sources (Yin, 2003). This platform was born in the Polytechnic of Turin as a showcase of all the patents developed in the university, to clearly and simply expose all the advantages and the brief description of the technologies covered by the patents. Subsequently, having the need to extend the project to an Italian level, wanting to involve all Italian universities and research centres, KS undertook a close long-lasting collaboration with Netval, creating a network of all the technology transfer offices relating to each associated body. This has allowed us to increase the number of patents included in the platform. Afterwards, for a correct application of patent legislation, and with the need to support inventors in the long patent registration process, KS collaborated and is still collaborating with the Italian Patent and Trademark Office (UIBM).

To carry out the analysis, semi-structured interviews were carried out with KS top management. Information derived from the interviews was triangulated with secondary data, following the recommendation of Eisenhardt (1989). Triangulation of different data sources has been used to mitigate the risk of informant bias, control individuals' subjective judgments, and thus increase construct validity (Gibbert et al., 2008).

Results. Knowledge Share Platform (KS) is a joint project of the Ministry of Business and Made In Italy - Patent and Trademark Office (MIMIT - UIBM), Netval Association and Polytechnic of Turin, which aims to represent for Italian companies the meeting point with the knowledge developed by university research and Research Centers, which can be the subject of concrete application. To date it is the largest national platform dedicated to the valorization of public research. The portal was created with the aim of making information available in a clear and understandable way relating to projects that represent the excellence of the scientific know-how of Italian Universities and Research Centres, in order to resolve the main critical issues linked to the technological transfer and to provide a consolidated tool to channel and simplify interactions between the world of research, businesses and investors. Access is free and open to all large companies, SMEs, investment funds, accelerators and incubators in Italy and abroad and requires registration. By registering on the platform, users will have the opportunity to interact with the project team, access content relating to published projects, send contact requests for technologies and realities of interest to them from which possible collaborations and synergies may arise. The KS 2.0 platform renews the objective of optimizing the contact between

Research and the entrepreneurial fabric but with new and constantly updated user experience and content. In fact, among the great innovations, the patents section has been joined by those of Start-Ups and Spin-Offs: an implementation of great importance especially for the world of current innovation. Not only that, to make it easier for the user to search for projects, KS 2.0 uses AI to improve the "match" between what they are looking for and the projects present on the platform. In addition to further implementations of the platform, the goal of the KS project is to be able to replicate the KS 2.0 platform model internationally through scalable and replicable projects. An arrival point that we are working towards to generate impact through a real ecosystem, in addition to the one that already exists thanks to the KS community in Italy. Knowledge Share has been recognized as best practices by the European Union.

We can say that the KS platform plays a "bridge" role between the world of research and businesses. It is placed in an intermediate position in the process that goes from the birth of innovative ideas by the research world, the subsequent effective application that leads to the birth of a usable technology and the business world which, not having internally the knowledge and competences to develop a certain technology, they look externally (in the platform) for the right technology developed by research centers, spin-offs and start-ups, which they can apply in their own business.

Therefore, KS mainly acts as a "facilitator" of interactions between researchers and entrepreneurs, promoting technology transfer.

Research limitations. This work is affected on the one hand, by the main limitations of a qualitative analysis based on a single case study, on the other hand, it offers ideas both at a theoretical and managerial level for both sides of the platform, the world of research and the world of businesses. The main limitation focused on the analysis of a single case study, therefore, to have a clearer understanding of the role that OIDPs have in the field of technological transfer between the world of research and the world of business, it would be useful to analyze other similar platforms to identify points of similarity and points that differentiate them from each other.

Managerial implications. The study highlights that OIDPs can effectively help companies that intend to open their organizational boundaries and develop new ideas and solutions with the involvement and participation of external knowledge sources, facilitating and supporting the entire open innovation process.

On the business side, therefore, it is increasingly advisable to open one's horizons by investing in new opportunities emerging from the external environment, increasingly looking for new and innovative technologies that can improve both one's offering to the public and make one's processes more efficient, productive, minimizing their environmental impact, migrating towards a more sustainable vision of doing business by innovating.

On the other hand, from the side of innovation intermediaries, and therefore of OIDPs, managers are advised to organize training and knowledge dissemination events much more frequently, at close intervals, which allows companies to come more easily aware of interesting projects that can help them develop useful technologies for their business, thus encouraging an increase in the need to protect their intellectual property with patents or otherwise.

Originality of the paper. the study represents a step forward in the line of research that deals with open innovation through digital platforms, analyzing the role that these platforms can have in the process of technological transfer between the world of research (universities, public research centers and private individuals) and the business world, not having internally the knowledge and competences necessary to develop technologies useful for their business.

References

- ABBATE T., CODINI A.P., AQUILANI B. (2019), "Knowledge co-creation in open innovation digital platforms: processes, tools and services", *Journal of Business & Industrial Marketing*, vol. 34, n. 7, pp. 1434-1447.
- ABBATE T., CODINI A., AQUILANI B., VRONTIS D. (2022), "From knowledge ecosystems to capabilities ecosystems: When open innovation digital platforms lead to value co-creation", *Journal of the Knowledge Economy*, pp. 1-15.
- AGOGUÉ M., YSTRÖM A., LE MASSON P. (2013), "Rethinking the role of intermediaries as an architect of collective exploration and creation of knowledge in open innovation", *International Journal of Innovation Management*, vol. 17, n. 02, 1350007.
- AQUILANI B., ABBATE T., DOMINICI G. (2016), "Choosing open innovation intermediaries through their web-based platforms", *The International Journal of Digital Accounting Research*, vol. 16, pp. 35-60.
- BAGLIERI D., BALDI F., TUCCI C.L. (2018), "University technology transfer office business models: One size does not fit all", *Technovation*, vol. 76, pp. 51-63.
- BAPTISTA R., SWANN P. (1998), "Do firms in clusters innovate more?", *Research Policy*, vol. 27, n. 5, pp. 525-540.
- BOUDREAU K. (2010), "Open platform strategies and innovation: granting access vs. devolving control", *Management Science*, vol. 56, n. 10, pp. 1849-1872.
- CAPUTO F., GARCIA-PEREZ A., CILLO V., GIACOSA E. (2019), "A knowledge-based view of people and technology: directions for a value co-creation-based learning organization", *Journal of Knowledge Management*, vol. 23, n. 7, pp. 1314-1334.
- CHESBROUGH H. (2006), *Open Business Models: How to Thrive in the New Innovation Landscape*, Harvard Business School Press, Boston.
- CLARYSSE B., WRIGHT M., BRUNEEL J., MAHAJAN A. (2014), "Creating value in ecosystems: crossing the chasm between knowledge and business ecosystems", *Research Policy*, vol. 43, n. 7, pp. 1164-1176.
- COLOMBO G., DELL'ERA C., FRATTINI F. (2014), "Exploring the contribution of innovation intermediaries to the new product development (NPD) process: a typology and an empirical study", *R&D Management*, vol. 45, n. 2, pp. 126-146.
- DALZIEL M. (2010), *Why do innovation intermediaries exist*, In Proceedings of DRUID Summer Conference, London (pp. 16-18).
- DE FALCO S.E., RENZI A., ORLANDO B., CUCARI N. (2017), "Open collaborative innovation and digital platforms", *Production Planning & Control*, vol. 28, n. 16, pp. 1344-1353.

- DE FALCO S.E., RENZI A., ORLANDO B., CUCARI N. (2017), "Open collaborative innovation and digital platforms", *Production Planning & Control*, vol. 28, n. 16, pp. 1344-1353.
- DE SILVA M., HOWELLS J., MEYER M. (2018), "Innovation intermediaries and collaboration: knowledge- based practices and internal value creation", *Research Policy*, vol. 47, n. 1, pp. 70-87.
- ECONOMIDES N., KATSAMAKAS E. (2006), "Two-sided competition of proprietary vs open source technology platforms and the implications for the software industry", *Management Science*, vol. 52, n. 7, pp. 1057-1071.
- EISENHARDT K.M. (1989), "Building theories from case study research", *Academy of Management Review*, vol. 14, n. 4, pp. 532-550.
- EISENMANN T.R., PARKER G., VAN ALSTYNE M.W. (2006), *Strategies for two sided markets*, Harvard Business Review, vol. 84, n. 10, pp. 92-101.
- ESPOSITO DE FALCO S., RENZI A., ORLANDO B., CUCARI N. (2017), "Open collaborative innovation and digital platforms", *Production Planning & Control*, vol. 28, n. 16, pp. 1344-1353.
- GIBBERT M., RUIGROK W., WICKI B. (2008), "What passes as a rigorous case study?", *Strategic Management Journal*, vol. 29, n. 13, pp. 1465-1474.
- HAGIU A. (2009), "Two-sided platforms: product variety and pricing structures", *Journal of Economics & Management Strategy*, vol. 18, n. 4, pp. 1011-1043.
- HOSSAIN M., LASSEN A.H. (2017), "How do digital platforms for ideas, technologies, and knowledge transfer act as enablers for digital transformation?", *Technology Innovation Management Review*, vol. 7, n. 9, pp. 55-60.
- HOWELLS J. (2006), "Intermediation and the role of intermediaries in innovation", *Research Policy*, vol. 35, n. 5, pp. 715-728.
- JÄRVI K., ALMPANOPOULOU A., RITALA P. (2018), "Organization of knowledge ecosystems: prefigurative and partial forms", *Research Policy*, vol. 47, n. 8, pp. 1523-1537.
- JEPPESEN L.B., LAKHANI K.R. (2010), "Marginality and problem-solving effectiveness in broadcast search", *Organization Science*, vol. 21, n. 5, pp. 1016-1033.
- LOPEZ-VEGA H., TELL F., VANHAVERBEKE W. (2016), "Where and how to search? search paths in open innovation", *Research Policy*, vol. 45, n. 1, pp. 125-136.
- LOPEZ-VEGA H., VANHAVERBEKE W. (2009), *Connecting open and closed innovation markets: a typology of intermediaries*, Proceedings of the DRUID-DIME Academy Winter 2009 Conference.
- MELE C., RUSSO-SPENA T. (2015), "Innomediary agency and practices in shaping market innovation", *Industrial Marketing Management*, vol. 44, pp. 42-53.
- NAMBISAN S., BARON R.A. (2009), "Virtual customer environments: testing a model of voluntary participation in value co-creation activities", *Journal of Product Innovation Management*, vol. 26, pp. 388-406.
- RAMASWAMY V., GOUILLART F. (2012), "Building a co-creative performance management system", *Balanced Scorecard Report*, vol. 23, n. 2, pp. 1-6.
- RAMASWAMY V., OZCAN K. (2014), *The co-Creation Paradigm*, Stanford University Press, Stanford, CA.
- RANDHAWA K., JOSSERAND E., SCHWEITZER J., LOGUE D. (2017), "Knowledge collaboration between organizations and online communities: the role of open innovation intermediaries", *Journal of Knowledge Management*, vol. 21, n. 6, pp. 1293-1318.
- RANDHAWA K., WILDEN R., GUDERGAN S. (2018), "Open service innovation: the role of intermediary capabilities", *Journal of Product Innovation Management*, vol. 35, n. 5, pp. 808-838.
- ROCHET J.C., TIROLE J. (2003), "Platform competition in two-sided markets", *Journal of the European Economic Association*, vol. 1, n. 4, pp. 990-1029.
- ROTH J. (2003), "Enabling knowledge creation: learning from an R&D organization", *Journal of Knowledge Management*, vol. 7, n. 1, pp. 32-48.
- SAWHNEY M., PRANDELLI E., VERONA G. (2003), "The power of innomediation", *MIT Sloan Management Review*, vol. 44, n. 2, p. 77.
- SIEG J.H., WALLIN M.W., VON KROGH G. (2010), "Managerial challenges in open innovation: a study of innovation intermediation in the chemical industry", *R&D Management*, vol. 40, n. 3, pp. 281-291.
- VAN DER BORGH M., CLOODT M., ROMME A.G.L. (2012), "Value creation by knowledge-based ecosystems: evidence from a field study", *R&D Management*, vol. 42, n. 2, pp. 150-169.
- VARGO S.L., LUSCH R.F. (2004), "Evolving to a new dominant logic for marketing", *Journal of marketing*, vol. 68, n. 1, pp. 1-17.
- WEST J., BOGERS M. (2014), "Leveraging external sources of innovation: a review of research on open innovation", *Journal of Product Innovation Management*, vol. 31, n. 4, pp. 814-831.
- YIN R.K. (2003), *Case Study Research Design and Methods Third Edition*, SAGE Publication, Thousand Oaks, CA.

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The measure of digital maturity

DARIO RUSSO¹ PIERO DEMETRIO FALORSI² FEDERICO CARDONE³

Abstract

Starting from the definition of the concept of “digital maturity”, the research describes its measurement through: a qualitative-quantitative metric which determines the rating of the company to be examined through measurements; a theoretical measurement model applicable to the generality of companies and based on computational algorithms adaptable through parameterization and weighting mechanisms to any reality.

The research focuses on models aimed at identifying an evolutionary path towards the full digital maturity of a company (digital transformation roadmap or “digital transformation”).

Finally, the concrete applications of the approach are described.

Key words: digital maturity assessment, digital transformation

Framing of the research. The models can be distinguished into two types depending on the objective they set and the data they examine: those independent of the economic sector of the company and those specific to a particular economic activity. The former is used for investigations into the digital maturity of a geographical area or an economic sector, and its evolution over time. Consultancy firms use the second type of model to provide companies and administrations with a “snapshot” of their digital maturity and identify the consequent evolutionary path towards full digital maturity (this process is commonly defined as “digital transformation”). Digital transformation requires effective change management, of which measuring results through a well-defined methodology is an indispensable condition.

The paper describes the conceptual model that underlies these approaches, defining the main concepts, highlighting the phases and mechanisms of the measurement process, and finally illustrating the concrete applications. The following definition of “digital” will be adopted below: **The term digital indicates a set of “items” (technologies, organizational solutions and knowledge management systems) that allow the company to exploit information to make operational and decision-making processes more effective and timelier.** The triad of process categories enumerated heretofore, namely technologies (TECH), organizational solutions (ORG), and knowledge management systems (KNOW), when collectively contemplated, assumes paramount significance in shaping the digital orientation of a corporation. This composite amalgamation of TECH, ORG, and KNOW is posited to bestow substantial advantages across diverse dimensions, including but not limited to growth potential, competitive process, focalization on customer/user interests, operational efficiency, adaptability, innovativeness, prognostic acuity, and the augmentation of overall quality. A list of items that can be traced back to the definition of digital is the following:

Category	Digital item	Type
Basic computer systems	Management/operational system	ORG
	Reporting system	ORG
	Internal/external microservices	TECH
Innovative digital technologies	Data platform	TECH
	Robotic process automation	TECH
	Artificial intelligence	TECH
	Machine learning	TECH
	Blockchain/Distributed ledger technology (DTL)	TECH
	Internet of things	TECH
	Wearable devices	TECH
	Business analytics	TECH
	Quantum computing	TECH
	Cybersecurity	TECH
	6G Network	TECH
	Cryptocurrencies	TECH
	Digital asset	TECH

¹ e-mail: dariorusso_013@fastwebnet.it

² e-mail: piero.falorsi@gmail.com

³ e-mail: fcardone@deloitte.it

	Fintech	TECH
	Demographic changes	TECH
	Technologies enabling smart working	TECH
	Metaverse	TECH
	Generative AI	TECH
Change management	Communication plan	ORG
	Training	KNOW
	Operative model	ORG

Rutkowski states: “**Digital maturity** is the ability to quickly respond to or exploit market opportunities based on current technology stacks, people resources and digital technology. A company can undertake digital transformation not only from the point of view of digital technology but on an overall level, including people, culture and processes”. While there is a strong emphasis on technology, a company’s level of digital maturity is also influenced by its speed of response to change and adaptability, mainly due to human capital and automated processes. Finnis defines digital maturity as “an institution’s ability to use, manage, create and understand digital, contextually (suited to its specific environment and needs), holistically (involving vision, leadership, process, culture and organization) and proactive (constantly aligned with the mission of the institution)”. The Boston Consulting Group defined digital maturity as “the measure of a company’s ability to create value through digital”. As a summary of the above discussion, the following definition is proposed in this work: “**Digital maturity measures a company’s ability to seize all the opportunities offered by digital technologies, organizational solutions and skills**”. The research converges on an approach to **digital maturity assessment based on a scale of numerical values** associated with a series of levels, representing a progressive graduation of standard conditions (usually five or six). Each level corresponds to a description of the organization’s situation, examining the presence and use of digital items in its processes. Some examples of models are: the one commissioned by Impulse, a foundation of the German Engineering Association, and conducted by IW Consulting (a subsidiary of the Cologne Economic Research Institute) and the Industrial Management Department of Aachen University; the European initiative Industry 4.0, the model created by the German National Academy of Sciences and Engineering (Acatech); the digital maturity model produced by Google and the Boston Consulting Group; the Deloitte’s Digital Maturity Model, which takes into consideration the five dimensions of the company (customers, strategy, technology, operations, organization-culture), provides a rating on four levels. In summary, the following general definition is proposed: “**A company’s digital maturity is measured according to a Digital Maturity Score (DMS), a multi-level index derived from a series of surveys carried out on all components of the company. The DMS can take values between 0 and L. The numerical scale represents a graduation of digital maturity from low to higher maturity levels**”. In the remainder of the work, the digital maturity measurement scale is proposed, divided into five levels (L=4) reported in following scheme. In the authors’ opinion, the scale represents a good summary of what is proposed in the literature, ensuring a sufficient balance between the need for synthesis and the need for detail that a measurement scale must have.

Digital maturity level Digital Maturity Score (DMS)	Description
0 – Zero	The company needs digital systems to support its operations.
1 – Initial	Business processes are carried out through the partial support of digital applications but still need to be automated.
2- Intermediate	The company began investing in innovative technologies, and some processes were automated. Digital transformation, however, only affects some business areas.
3 – Consolidated	The digitalization plan has been extended to multiple business areas, and the company has automated all core and support processes.
4 – Competitive	The company has integrated automated processes with solutions for data analysis and with a specific governance model. Digital transformation is fully assimilated into corporate culture.

Purpose of the paper. This work aims to build a new theoretical measurement model applicable to the generality of companies and based on computational algorithms adaptable to any reality through parameterization and weighting mechanisms. The paper describes the conceptual model that underlies these approaches, starting from the definitions of the main concepts, highlighting the phases and mechanisms of the measurement process and finally illustrating their concrete application.

The Digital Maturity Measurement DMM of a company is a process aimed at defining the overall numerical value of the company’s DMS. It is based on the comparison between the observations made on the company and what is predicted by the digital maturity model adopted. The maximum value of the DMS represents the existence of all the conditions foreseen by the model. The partial overlap of real situations with what the model predicts for a given level gives rise to DMS values intermediate between 0 and the maximum value L. The DMM process will involve individual parts of the company, and the overall DMS of the company will be a weighted average of the partial DMS.

Methodology. A DMM process is divided into the following steps:

Step 0. Preliminary requirements.

i) Subdivision of the company into elementary parts

In models oriented towards specific economic activities, the choice of classification of the observation areas reflects

the characteristics of the company's organization and directs the data collection activity. The classifications can be traced back to a tree diagram which at the first level presents the distinction proposed by Eurostat between core business and support functions: **core business functions** are the activities of a company that produce income, i.e. the production of final goods or services intended for the market or on behalf of third parties; **corporate support functions** are accessory activities carried out by the company in order to allow or facilitate the main corporate functions and its production activity; the outputs of the corporate support functions are not themselves destined directly to the market or to third parties. Starting from this definition, sublevels can be created that gradually descend into more and more detail of the organizational morphology of the company. The table below presents a possible organization of company functions on three levels. That classification allows the value of any variable to be uniquely assigned to a part of the company by identifying it through three subscripts a , b and c (where $a = 1, \dots, A$; $b = 1, \dots, B_a$; $c = 1, \dots, C_{a,b}$) organized in a hierarchical way, where the subscript of a given level depends on the subscripts of the higher level. Thus, concatenating the three subscripts a , b , and c uniquely identifies a firm's elementary part (or leaf). We denote with

$$z_{a,b,c}$$

The value of variable z for the part a, b, c of the company.

If one wanted to organize the functions of a company on four hierarchical levels, it would suffice to introduce the subscript d where $d = 1, \dots, D_{a,b,c}$. Alternatively, if one wanted to describe the company only on two hierarchical levels, subscripts a and b would be considered.

First level Subscript a	Second level Subscript b	Third level Subscript c
CORE OPERATIONS PROCESSES	LOGISTICS	HANDLING OF MATERIALS AND PRODUCTS
		ORDER MANAGEMENT
		STORAGE
		MANAGEMENT OF RETURNS TO SUPPLIERS
		MANAGEMENT OF SUPPLY VEHICLES
	PRODUCTION	PRODUCT PROCESSING
		CREATION AND PACKAGING
		ASSEMBLY
		PRODUCT TESTS
		QUALITY CHECK
	DISTRIBUTION	PRODUCTS DISTRIBUTION
	POST-SALE	INSTALLATION REPAIR AND SUPPLY OF PARTS
		TRAINING FOR USE
		CUSTOMER SERVICE
SUPPORT PROCESSES	RESEARCH AND DEVELOPMENT	RESEARCH AND DEVELOPMENT
	ADMINISTRATION	ACCOUNTING AND BUDGETARY
		TAXATION
		PERSONAL RESEARCH
	PERSONNEL MANAGEMENT	DISMISSALS
		RECRUITMENTS
		TRAINING
		REWARDS AND SALARY
		MAINTENANCE AND ICT SUPPORT
	CORPORATE INFORMATION SYSTEMS	ICT OPERATIONAL MANAGEMENT
		ICT DESIGN AND DEVELOPMENT
		GOVERNMENT AND DEFINITION OF ICT OPERATIONAL PLANS
		SAFETY MANAGEMENT
	SUPPLIES	PURCHASES MANAGEMENT OF RAW MATERIALS
		MANAGEMENT OF PURCHASE OF CONSUMABLE MATERIALS
		EQUIPMENT PURCHASE MANAGEMENT
	FINANCE	INCOMING/OUTING CASH FLOW MANAGEMENT
		MANAGEMENT OF FINANCIAL MOVEMENTS
		DEBT COLLECTION MANAGEMENT
		BALANCE MANAGEMENT OF PURCHASE INVOICES
		LOAN MANAGEMENT
		INVESTMENT MANAGEMENT
	MARKETING & SALES	PRICING
		COMMUNICATION
		ADVERTISING
		SALES MANAGEMENT

	ORGANIZATION	COMMERCIAL DEVELOPMENT
		CUSTOMER DATA MANAGEMENT
		MANAGEMENT OF THE INTERNAL ORGANIZATIONAL STRUCTURE
		MANAGEMENT OF BUSINESS PROCESSES
		MANAGEMENT OF INTERNAL REGULATIONS
		INTERNAL HELPDESK
	GOVERNANCE/MANAGEMENT	STRATEGIC PLANNING
		BUDGET PLANNING
		MANAGEMENT CONTROL
		RESOURCE ALLOCATION
		INTERNAL AUDIT
		COMPLIANCE MANAGEMENT
		EXTERNAL RELATIONS AND POLICIES

ii) Choice of digital maturity model

In this fulfilment, we proceed to the textual description of the characteristics that must be undergone for each of the $(L + 1)$ levels provided by the model for each part (trunk, branches and leaves) of the company.

The textual description is made so that if the company is placed at a particular level, say the third, it must also meet all the requirements stipulated in the previous levels.

iii) Choice of the subset of digital items

The third preliminary fulfilment is choosing the subset of digital items and indicating which items should be present in each part of the company for each of the levels of the adopted digital maturity model. This fulfilment is divided into two stages. First, the complete list of digital items that must be considered is established.

Next, we define which technologies from the above list must be used for a specific business part to be characterized by a given level of the DMS. A business function can be classified in a given level of the DMS only if it uses all the items associated with that level.

We denote by j a specific digital item (with $j = 1, \dots, J$) and by ℓ (with $\ell = 0, 1, \dots, L$) a given level of the DMS. We further denote by $t_{a,b,c}(j, \ell)$ a dichotomous variable that takes value 1 if the adopted digital maturity model predicts that the a, b, c part of the firm adopts item j to be characterized by a level ℓ of the DMS, and takes value 0 otherwise. In the example below in Figure below, the value of the variable $t_{a,b,c}(j, \ell)$ for the customer service function ($a = 1, b = 4$ and $c = 3$) is presented.

Digital Item	Index j	DMS Level ℓ				
		0	1	2	3	4
Management/operational system	1	0	1	1	1	1
Reporting system	2	0	1	1	1	1
Internal/external microservices	3	0	1	1	1	1
Data platform	4	0	1	1	1	1
Robotic process automation	5	0	1	1	1	1
Artificial intelligence	6	0	0	1	1	1
Machine learning	7	0	0	1	1	1
Blockchain/Distributed ledger technology (DTL)	8	0	0	0	1	1
Internet of things	9	0	0	0	0	1
Wearable devices	10	0	0	0	0	1
Business analytics	11	0	1	1	1	1
Quantum computing	12	0	0	0	0	1
Cybersecurity	13	0	1	1	1	1
6G Network	14	0	0	0	0	1
Cryptocurrencies	15	0	0	0	1	1
Digital asset	16	0	0	0	0	1
Fintech	17	0	0	0	0	1
Demographic changes	18	0	1	1	1	1
Technologies enabling smart working	19	0	1	1	1	1
Metaverse	20	0	0	0	0	1
Generative AI	21	0	0	0	1	1
Communication plan	22	0	1	1	1	1
Training	23	0	1	1	1	1
Operative model	24	0	1	1	1	1

The matrix shown above is made so that if $t_{a,b,c}(j, \ell) = 1$, we also have $t_{a,b,c}(j, \ell + 1) = 1$.

Step 1. Measurement of the DMS for the elementary parts (leaves) of the company

In this step, we define the value of the DMS, denoted in the following as

$$m_{a,b,c}$$

for each of the elementary parts a, b, c (in which $a = 1, \dots, A$; $b = 1, \dots, B_a$; $c = 1, \dots, C_{a,b}$) into which the company is divided. $m_{a,b,c}$ is an integer taking values from 0 to L . In the digital maturity model, we follow $L = 4$.

Determining the value $m_{a,b,c}$ can be done directly by comparing the company's reality with what is provided in the textual descriptions defined in preliminary fulfilment ii. The direct measurement is then validated by checking whether the set of digital items provided by the theoretical model are all used for the specific business function. Data collection can refer to one of the following four types:

1. interviews;
2. questionnaires;
3. automatic detections by procedures;
4. detections by ad hoc processing.

Direct measurement

Following the most straightforward procedure, the person in charge of the specific business function is asked up to $L + 1$ questions, where the first question in the sequence is the one related to level 0 of the DMS, then moves on to the question corresponding to level $\ell = 1$, and so on. In each question, the surveyor ascertains whether a business function operates according to what is illustrated in the text descriptions related to the level. For example, in the case of the customer service function, the question for level $\ell = 2$ of the DMS is as follows:

The following statement corresponds to the situation in the company? “The business function has begun to invest in innovative technologies, and some of the operational processes have been automated; however, digital transformation does not affect all areas of the function”.

In case the answer is positive, the enumerator in charge of DMS assigns value 1 to the dichotomous variable $r_{a,b,c}(\ell)$. It continues with the interview, asking questions corresponding to level $\ell = 2$. In the case that the answer is negative, the enumerator assigns value 0 to the dichotomous variable $r_{a,b,c}(\ell)$ and stops the survey because if a business function does not reach a certain level of digital maturity, it certainly cannot meet the requirements of the next level (see following example).

DMS level ℓ	Question	Value of the variable $r_{a,b,c}(\ell)$
0	Is the customer service function based exclusively on manual processes?	1
1	Are the processes of the customer service function carried out with the partial support of digital applications but are not yet automated?	1
2	The customer service function has begun to invest in innovative technologies and some of the operational processes have been automated; However, doesn't digital transformation affect all areas of the function?	1
3	Has the customer service function automated all operational processes, both core and support?	0
4	The customer service function has integrated automated operational processes with analytics solutions for data analysis and with a specific governance model; Is the digital transformation fully assimilated into the culture of the people who have responsibility for the function?	0

The value $m_{a,b,c}$ is obtained simply by summing the values of the variable $r_{a,b,c}(\ell)$:

$$m_{a,b,c} = \sum_{\ell=0}^L r_{a,b,c}(\ell). \quad (1)$$

Let us now consider a more complicated case in which a specific level of the DMS can only be achieved if two or more requirements are met. In this situation, each condition can be expressed with a single question. The variable $r_{a,b,c}(\ell)$ takes value 1 only if all questions corresponding to the various requirements of the level are answered positively. The measurement of DMS is always done according to formula 1.

Verification of the value of the variable $m_{a,b,c}$ by the digital items

Suppose that the direct measurement has assigned a value of the DMS of the business part (a, b, c) equal to 3, being thus, $m_{a,b,c} = 3$. With respect to preliminary requirement iii, the (a, b, c) function must then adopt all the digital items provided for that level and so it results in $t_{a,b,c}(j, 3) = 1$.

To verify that the $m_{a,b,c}$ level is assigned correctly, it is therefore necessary to conduct a survey to know all the digital items used by the company part in question.

At the end of this survey, the value of a dichotomous variable $u_{a,b,c}(j)$, will be known, where

$$u_{a,b,c}(j) = \begin{cases} 1 & \text{if digital item } j \text{ (} j = 1, \dots, J \text{) is used by the company sector } a, b, c \\ 0, & \text{otherwise} \end{cases}.$$

Consequently, from a formal point of view, if the company is assigned level ℓ of the DMS, the following condition must occur

$$\sum_{j=1}^J t_{a,b,c}(j, \ell) u_{a,b,c}(j) = \sum_{j=1}^J t_{a,b,c}(j, \ell). \quad (2)$$

If condition 2 is not verified, the DMM manager has two alternatives. He can lower the level of the variable $m_{a,b,c}$ assigned by direct measurement. Alternatively, he/she can confirm the assessment already given, believing that the detected violation of condition 2 is not so severe as to compromise the company's digital maturity level.

Step 2. Calculation of the DMS for the aggregated parts (branches and trunk) of the holding by aggregating the DMS of the leaves

The calculation of the DMS for the aggregate parts of the firm is obtained by weighted averages of the $m_{a,b,c}$ values determined in step 1.

The digital maturity index for the second-level part b of the company, denoted in the following as $m_{a,b}$, is obtained as

$$m_{a,b} = \text{round} \left(\sum_{c=1}^{C_{a,b}} \delta_{a,b,c} w_{a,b,c} m_{a,b,c} / \sum_{c=1}^{C_{a,b}} \delta_{a,b,c} w_{a,b,c} \right), \quad (3)$$

where: $\text{round}(\cdot)$ denotes the rounding function of the term included in parentheses; $w_{a,b,c}$ is the variable that defines the weight of the part (a, b, c) of the firm; and $\delta_{a,b,c}$ denotes a dichotomous variable that takes value 1 if a part (a, b, c) is present among the parts of the firm and takes value 0 otherwise.

If the maturity index must always be expressed as an integer, rounding defined in step B is required. The transition from natural numbers to integer numbers means that the DMS represents business reality somewhat less accurately. However, it facilitates communication within the company.

It is necessary to use the variable $\delta_{a,b,c}$ because sometimes the subdivision of the company predicted by the theoretical model is not reflected in the company's operational reality. Some elementary parts (a,b,c) may not be recognizable in the operational models adopted by the company.

Similar to the above, the digital maturity index for the function a of the first level is obtained as

$$m_a = \text{round} \left(\sum_{b=1}^{B_a} \delta_{a,b} w_{a,b} m_{a,b} / \sum_{b=1}^{B_a} \delta_{a,b} w_{a,b} \right),$$

where $\delta_{a,b}$ and $w_{a,b}$ have similar meanings to those already illustrated for $\delta_{a,b,c}$ and $w_{a,b,c}$.

Finally, the digital maturity index for the whole company is obtained as:

$$m = \text{round} \left(\sum_{a=1}^A \delta_a w_a m_a / \sum_{a=1}^A \delta_a w_a \right).$$

Choice of weights

The choice of weights is a fundamental process to guarantee the precision of the model, so much so that the weights adopted in the proprietary algorithms of the consultancy companies that certify digital maturity are not made public, for obvious reasons of protection of company secrecy.

The weighting of a model is connected to the following factors:

- the area in which the model is used;
- the state of maturity of the digital technologies considered;
- the strategic orientation of the company which may place greater emphasis on one sector than others

A variety of methods can be used to **determine the weights** $w_{a,b,c}$ at the elementary function level (a,b,c) . Weights can:

1. be defined based on a subjective judgment of the expert responsible for defining the company's digital maturity;
2. assume an equal value for all functions. For example:

$$w_{a,b,c} = 1 / \sum_{a=1}^A \sum_{b=1}^{B_a} C_{a,b};$$

3. be calculated based on a variable that measures the company's commitment to the specific function; such as, for example, the cost associated with resources for carrying out the function;

4. be obtained as a univariate synthesis of different data related to digital maturity available in the company's information systems. This summary can be carried out either subjectively, taking into account the specific company reality, or by adopting a statistical criterion.

- Subjective criterion.
- Statistical criterion. Different statistical techniques can be used for this purpose. In this context, principal

component analysis and factor analysis are the main suggested methods. Synthetic indices are an alternative method that can be used. The weights $w_{a,b}$ and w_a for calculating digital maturity for the company's higher-level functions can be determined either with subjective criteria or as an aggregation of the weights of the elementary functions, or:

$$w_{a,b} = \sum_{c=1}^{C_{a,b}} w_{a,b,c}, w_a = \sum_{b=1}^{B_a} \sum_{c=1}^{C_{a,b}} w_{a,b,c}.$$

Step 3. Presentation of the assessment results

Depending on the model and the measurement scale adopted, the summary result of the assessment is represented by the DMS of the analyzed company, eventually detailed for the different functions analyzed and compared with a benchmark.

Results. The application of the model in the business context enables the achievement of four main objectives:

- 1) drawing a clear vision of business development in terms of digitalization;
- 2) obtaining a competitive advantage through increased revenues and reduced costs resulting from the digitalization process and the introduction of new digital items;
- 3) possibility of comparing oneself with the market and other companies thanks to consistent quantitative metrics;
- 4) possibility of requesting public incentives (e.g. PNRR) thanks to an objective need mapping.

Application procedure

IT tools can apply the model. The use of tools guarantees greater efficiency in the analysis thanks to a highly automated process, and the possibility of immediate comparison of the analyses carried out and the results with the market benchmark, whose indicators are calculated using the same methodology. By applying the theoretical approach presented in this paper, it is possible to calculate the indicators of the company's digital maturity level (DMS), through which an organic digitalization plan (digital transformation) can be designed and implemented.

a. Detection (model steps 0 and 1)

The data collection phase begins with the identification of the level of relevance for the reference sector of each digital item (market appetite) expressed in terms of "Not relevant", "Nice to have", and "Must have" and of the processes in the perimeter for the company's calculation of digital maturity. For each process, the adoption degree of the digital items presents is indicated and expressed in terms of "Low", "Medium", and "High"

b. Processing (model step 2)

The data entered by the company for each process under analysis are automatically processed in order to calculate and subsequently represent:

- Relevance of digital items in the processes, compared to the reference sector;
- DMS of the analyzed company and detail by function (weighted result, calculated vs. relevance of digital items in the industry).

Starting from the data entered as input, relating to the adoption degree of the digital items on the processes, we proceed with the processing. In this phase, the result could be represented through a matrix comprising digital items and processes, which reports the adoption degree.

Presentation of the results (step 3 of the model)

Firstly, the data is processed and combined with the level of relevance or weighting in the reference sector of each digital item. This allows the visualization of the analyzed processes grouped by function according to a graphic matrix. The matrix correlates the adoption degree of the digital items present in the processes and their relevance to the sector. This helps identify the priorities of intervention for the company. For instance, it helps to identify functions whose processes are not very mature compared to the sector they belong to and digital items in which to invest and digitalize. The results are reported using a color scale where red corresponds to low or zero levels of digital maturity. Intermediate digital maturity levels are in orange, and high digital maturity levels are in green. Based on the matrix, it is possible to define a scale of priorities to plan interventions, to bridge the gap between the digital maturity of the company and the reference sector. Functions with lower values (more tending towards red) have a higher priority since there are digital items relevant to the reference sector and with low maturity levels. It is possible to use the resulting matrix to carry out benchmarking, comparing with similar companies or benchmark values. This is thanks to the reprocessing of the input data according to the same methodology. The model comprises three phases that allow us to identify the digital maturity level of the company, its functions, and their priority. This is hypothesized based on the combination of the previous information. Using this data, in the practical application of the model, it is possible and necessary to develop a personalized digitalization plan based on the evidence that has emerged. At this point, expert consultants are expected to intervene, identify priorities, and broaden the analysis with unconsidered business aspects, risk factors, critical business profiles, or compliance needs.

Research limitations. Since this is an approach based on the comparison with an ideal situation described in qualitative terms through assertions that describe the optimal combination between the use of digital technologies and processes, there is a certain amount of discretion which is mitigated through the adaptation of the ideal reference model

to the various company realities and related processes.

Managerial implications. From a managerial point of view, the measurement of the degree of digital maturity of a company and the evidence of the gaps relating to the best performers allow the construction of improvement paths oriented towards specific operational processes and focused on certain technologies. This analysis helps us identify market opportunities, evaluate costs and expected benefits, and estimate macro activation times. The intervention aims to prepare a “Digital Transformation Roadmap”. This is an organic planning of interventions based on prioritization, immediately activating quick win actions, and simultaneously launching structural interventions to increase digital maturity in the medium-long term.

Originality of the paper. Examining the available literature highlights the need for a rigorous conceptualization of the digital maturity measurement process, which in existing approaches adopts algorithms based on empirical evidence drawn from previous assessment experiences. A conceptual description of the digital maturity determination algorithm is contained in Brodny J, Tutak M (2021), where however the focus is placed on the evaluation of the digital maturity of 11 European countries observed as a whole. The article assesses the level of digital readiness of enterprises in these countries based on 14 determinants characterizing the most important areas of the digitalization process. Multi-criteria analysis aimed at assessing the digital maturity of countries was performed using the Multi-Criteria Decision-Making methods (the TOPSIS, MOORA, VIKOR), and entropy methods for delineating the weights of the determinants. To obtain an unambiguous assessment of the determined digital maturity, the mean-rank method was applied. The method of multidimensional scaling allowed for the analysis of similarities between the countries in question.

This work **aims to build a new theoretical measurement model** applicable to the generality of companies and based on computational algorithms adaptable to any reality through parameterization and weighting mechanisms.

References

- BOSTON CONSULTING GROUP, Digital Maturity, <https://www.bcg.com/capabilities/digital-technology-data/digital-maturity#:~:text=Digital%20maturity%20is%20the%20measure,companies%20launching%20a%20digital%20transformation>
- BRODNY J., TUTAK M. (2021) “Assessing the level of digital maturity of enterprises in the Central and Eastern European countries using the MCDM and Shannon’s entropy methods”. *PLoS ONE*, vol. 16, n. 7.
- DELOITTE, Digital Banking Maturity (2022), *Deloitte point of view on digital banking maturity and its impacts on the Italian Financial Services Industry landscape*, <https://www2.deloitte.com/it/it/pages/strategy-operations/monitor-deloitte/articles/digital-banking-maturity-2022.html>
- FINNIS J. (2020), *The Digital Transformation Agenda and GLAMs: A Quick Scan Report for European Culture*
- JOLLIFFE I.T., CADIMA J. (2016-04-13). “Principal component analysis: a review and recent developments”. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 374 (2065).
- KANE G.C., (2017) “Digital Maturity, Not Digital Transformation”, *MIT Sloan Management Review*, April 4, <https://sloanreview.mit.edu>. The general background of this concept of maturity is based on L. Hyatt, B. Hyatt, & J. Hyatt, “Effective Leadership Through Emotional Maturity”, *Academic Leadership Journal* 5, no. 2 (summer 2007): article 4.
- KUUSISTO O., KÄÄRIÄINEN J., HÄNNINEN K., SAARELA M. (2021), “Towards a Micro-Enterprise-Focused Digital Maturity Framework”, *International Journal of Innovation in the Digital Economy*, vol. 12, n. 1, January-March.
- MAZZIOTTA M., PARETO A. (2013), *Methods for Constructing Composite Indices: One for All Or All For One*. *Rivista Italiana di Economia Demografia e Statistica*. Volume LXVII n. 2 Aprile-Giugno 2013.
- RUSSO D., (2024), *A guide for managers and professionals to exploit the transformation of the finance in the next ten years. Effectively govern the transition to new financial ecosystem*, McGraw & Hill.
- RUTKOWSKI D., Digital Maturity: What It Is, How to Achieve It, and the Digital Maturity Model to Drive Business Transformation. In: *Performance Improvement Partners*. <https://www.pipartners.com/digital-maturity/>
- SCHUH G., ANDERL R., GAUSEMEIER J., TEN HOMPEL M., WAHLSTER W. (Eds.), *Acatech STUDY - Industrie 4.0 Maturity Index - Managing the Digital Transformation of Companies*

Track 3
International Business

Exploring the impact of cybersecurity on digital export: evidence from food industry

GIOVANNA TERRIZZI* ALBA MARINO*

MARIA CRISTINA CINICI* DANIELA BAGLIERI**

Abstract

Although agri-food enterprises have started to use advanced digital technologies for international trade, their exploitation may be hindered by their cyber risk aversion and reluctance to share sensitive information with foreign partners. Accordingly, this study aims to investigate firstly, whether the use of digital technologies has any effect on their export performance and secondly, whether cyber risk aversion may influence digital exporting. Through a quantitative study of a sample of 446 Italian companies operating in the food, beverages and tobacco industry, our results show that digital business technologies are key business assets to sustain export performance and that cyber risk perception negatively moderates digital exports.

Key words: digital technologies; export performance; cyber risk aversion; moderation; food; beverage

Framing of the research. Digital technologies have quickly changed the way international business is conducted (Nambisan, Zahra, & Luo, 2019). They enable firms to access foreign markets through business platforms that facilitate the connection between organizations and enable them to optimize their exchanges (Rakshit, Islam, Mondal & Paul, 2022; Carballo, Rodriguez Chatruc, Salas Santa, & Volpe Martincus, 2022; Marinagi, Trivellas, & Sakas, 2014; Ghalandari, 2013). Their wide availability and accessibility encourage companies of all sizes to leverage them for internationalization and, most often, digital technologies prove necessary for smaller companies that lack resources for more traditional entry modes (Cavusgil & Knight, 2015; Meyer, Li, Brouthers, & Jean, 2023). In recent years, agri-food companies have also started to exploit them to internationalize and efficiently manage trade with their partners, driven by increasingly globalized tastes and lifestyles and the growing demand for authentic food products from traceable and sustainable sources (Carballo, Rodriguez Chatruc, Salas Santa, & Volpe Martincus, 2022; Elia, Giuffrida, Mariani, & Bresciani, 2021; Popkin, 2006; Rashmi, Shree, & Singh, 2017). Moreover, recent Covid-19 pandemic has increased their dependence on digital technologies and online platforms, forcing actors to accelerate their adoption to ensure the continuity of food supplies and respond timely to disruptions (Hew, Wong, Tai, Ooi, & Lin, 2020). Several technologies connect suppliers and buyers through international platforms such as Foodem, Trace Register, Cropin, and Walmart Grocery (Chatterjee, Chaudhuri, Mariani, & Wamba, 2023; Elia, Giuffrida, Mariani, & Bresciani, 2021; McIntyre & Srinivasan, 2017). While Internet of Things (IoT) applications allow to track food in real time along the supply chain and environmental parameters useful for their storage, Blockchain and cloud computing applications allow to share such information with business partners (Ross & Blumenstein, 2015). Extant research shows that these technologies strengthen relationships between distant suppliers and distributors and speed up trade exchange in highly perishable food products, generating transparent, sustainable, and competitive supply networks (e.g., Tsolakis, Niedenzu, Simonetto, Dora and Kumar, 2021; Kittipanya-ngam and Tan, 2019; Crew, 2018). In highly disjointed production contexts, these advanced digital technologies may reduce information asymmetries between firms and enable more efficient business exchanges management without intermediaries and supporting infrastructure (Strange & Zucchella, 2017). Prior literature has recognized the usefulness of such technologies for the internationalization of the agri-food industry on many levels. They facilitate the identification of potential international partners and the connection with them, reduce foreign investment costs and improve the exchange efficiency while minimizing food waste and losses and, consequently, increasing products quality (e.g., Carballo, Rodriguez Chatruc, Salas Santa, & Volpe Martincus, 2022; Rakshit, Islam, Mondal, & Paul, 2022; Hervé, Schmitt, & Baldegger, 2020; Tseng and Johnsen 2011). The integration of digital technologies into agri-

* University of Messina
e-mail: giovanna.terrizzi@unime.it

• University of Messina
e-mail: alba.marino@unime.it

▲ University of Messina
e-mail: mariacristina.cinici@unime.it

** University of Messina
e-mail: daniela.baglieri@unime.it

food value chains may also enable companies to seize new opportunities through so-called big data mining, performing market analyses that reveal different purchasing trends in the multiple geographies involved (Wamba, Gunasekaran, Akter, Ren, Dubey, & Childe, 2017; Lee, 2017; Akter, Wamba, Gunasekaran, Dubey, & Childe, 2016). All these advantages of using digital technologies in internationalization strategies may result in export growth and, consequently, better overall economic performance.

Beyond their benefits, these technologies have also raised major cyber security concerns due to numerous hacker breaches against several industry companies since 2017 (Latino & Menegoli, 2022). Among the most serious, ransomware attacks on JBS in 2021, a Brazilian beef producer with factories around the world, and Rovagnati in 2022, an Italian company producing cured meats (Cen, Jiang, Qin, Jiang, Doss, 2023). Accordingly, international activities of agri-food firms through technologies may also be influenced by the perceived cyber risk and the measures put in place to counter it (Guerra & Boys, 2022). GlobalData shows that the percentage of food companies investing in cybersecurity has increased from almost 30% in 2021 to almost 45% in 2022¹. Extant research depicts how companies often adopt various cybersecurity measures to prevent cyber risks (e.g., Hasani, O'Reilly, Dehghantanha, Rezaei, and Levallet, 2023; Latino and Menegoni, 2022). The most common plan of action includes protections against attacks and defense mechanisms for the resilience of affected systems, such as systems vulnerability analysis, staff training on the safe use of digital technologies, antivirus software, firewalls, and data encryption (Zimmermann and Renaud, 2019; Lezzi, Lazoi, and Corallo, 2018). However, current assessments of their usefulness in terms of reducing perceived risk and economic return seem to be insufficient or incomplete. Indeed, previous literature appears to be theoretical and mainly focused on describing the factors that influence the decision to invest in cybersecurity (Hasani, O'Reilly, Dehghantanha, Rezaei, and Levallet, 2023) and measures to protect against particular forms of attack on the food chain (e.g., Manning, 2019, Manning and Soon, 2016), including ideological attacks (Bonell, Meiksin, Mays, Petticrew, & McKee, 2018) and agroterrorism (Spink and Moyer, 2011). Typically, the greater the organizations' risk aversion, the greater the investment in cybersecurity measures (Wessels, van den Brink, Verburgh, Cadet, & van Ruijven, 2021). While many studies consider these preventive actions crucial for corporate security (e.g., Hasani et al., 2023), data reveal they are not sufficient to reduce organizations' risk aversion towards advanced digital technologies. In fact, despite the investments in extensive cyber protection measures, most firms still fear cyber-attacks and feel unprepared to deal with them (World Economic Forum, 2014). Indeed, in highly uncertain contexts, investing in cyber security measures may enhance organizations' awareness of potential risks and, consequently, increase their aversion (van Schaik, Jeske, Onibokun, Coventry, Jansen, & Kusev, 2017). This phenomenon may lead companies to limit the use of the most vulnerable advanced technologies or reduce digital trade with unsafe specific organizations and rogue countries.

Purpose of the paper. Although existing studies have recognized the benefits of using advanced digital technologies, there are still few assessing their effects on food firms' economic performance (Liao, Wang, Baibing, and Weyman-Jones, 2016). Moreover, although studies on cyber risk and cybersecurity actions in the agri-food sector have recently increased, empirical analyses are needed to identify the effects on business performance (Latino and Menegoli, 2022).

Therefore, this project aims to investigate 1) the relationship between advanced digital technologies and export performance and 2) how cyber risk aversion - as the amount of cybersecurity measures taken by organizations - moderates the relationship between digital technologies and export performance. Specifically, in light of above arguments, we formulate the following hypotheses:

Hypothesis 1. The use of advanced digital technologies is positively correlated with agri-food firms' export performance.

Hypothesis 2. Organizations' cyber risk aversion negatively moderates the relationship between digital technology use and export performance.

Methodology. To test our hypotheses, we derive our data from the Survey on Industrial and Services Enterprises (Fonte: Banca d'Italia, Indagine sulle imprese industriali e dei servizi, [2005-2021]), annually conducted by the Bank of Italy. This survey collects information on investments, turnover, and other economic variables of enterprises with administrative headquarters in Italy, operating in the industrial and private non-financial services sectors with at least 20 employees and in the construction sector with at least 10 employees. For this study, we selected a sample of firms operating in the food, beverage, and tobacco industry. Although the focus of our study is not the tobacco industry, it was not possible to further refine the sample selection and limit it to food and beverage enterprises due to the structure of the original data. Moreover, the lack of records for several variables in many years constrained us to limit our analysis only to 2016. As a result, we obtained a cross-sectional dataset of 446 observations. The estimates were made using the Remote Execution (REX) system of the Bank of Italy, which allows remote processing of the data collected in the survey. To safeguard the confidentiality of information specific to the firms participating in the survey, the Bank of Italy limits access to its microdata through a remote processing system, which allows external researchers to perform econometric analyses without having direct access to the microdata.

Table 1 lists the variables relevant to the study. As dependent variable, we considered Export performance corresponding to the logarithm of firm's export sales volume. As independent variable, we considered Digital technology intensity, corresponding to the number of different technologies adopted by each firm, from 0 to 4. As moderator variable, we considered Cybersecurity, that is a proxy of organizations' cyber risk aversion. It is constructed as a factor variable loading two items, namely Cybersecurity investment and Cybersecurity intensity. Cybersecurity investment is a

¹ <https://www.just-food.com/dashboard/jobs/cybersecurity-hiring-levels-in-food-industry-remain-in-growth-data/>

continuous variable that refers to firm's investment in cybersecurity measures, while Cybersecurity intensity is an ordinal variable that counts the number of different cybersecurity measures adopted by each firm, from 0 to 4. Finally, we included five variables to control for firm and environmental heterogeneity.

Since our dependent variable, Export performance, is a continuous measure, we run a linear Ordinary Least Square (OLS) model. Given export performance's potential dependence on its past values, we also incorporate in the model a first-order autoregressive AR(1) process that includes the lagged value of the dependent variable as a regressor (Greene, 2003; Salomon and Jin, 2008; 2010). Its inclusion allows both to account for a dynamic firm-specific component and to control for data serial correlation (Deng, Jean, and Sinkovics, 2018; Reeb, Sakakibara, and Mahmood, 2012; Greene, 2003; García, Avella, and Fernández, 2012). Furthermore, to consider the possible delay with which the use of advanced digital technologies may be reflected in export performance, we specify a regression model with a one step-ahead dependent variable (Wang and Ma, 2018; Gao, Murray, Kotabe and Lu, 2010). In doing so, we mitigate possible endogeneity issues, such as reverse causality between dependent and independent variable, commonly observed in the relationship between international expansion and firm characteristics (Wang and Ma, 2018; Greene, 2003). Therefore, to test our hypotheses, we estimate two dynamic regression models. Firstly, we perform a dynamic regression model to test the positive effect of firm's digital technology intensity on export performance. Then, we perform another dynamic regression model to test the moderating effect of cyber risk aversion on the relationship between firm's digital technology intensity and export performance.

Results. Table 2 shows the descriptive statistics of the variables. For confidentiality reasons, the Bank of Italy does not release the minimum and maximum values of continuous variables. Although digital technologies are increasingly necessary for food, beverage and tobacco enterprises, their adoption appears still very low. Indeed, we note that on average our sample does not use even one of the four digital technologies considered (mean value = 0.38).

Table 3 shows Pearson's correlation coefficients between variables. Correlations between variables are low, excluding potential issues of multicollinearity (Wang and Ma, 2018).

Table 4 shows the results of our regression model. Model 1 represents the baseline model with control variables. As the F statistic is significant, they are collectively relevant in predicting export performance ($F = 87.94$, $p < 0.01$). In Model 2 and 4, we tested our hypotheses. Firstly, we tested the effect of digital technologies on export performance. Accordingly, Model 2 reveals that digital technology intensity has positive effects on export performance ($p < 0.01$). This result supports Hypothesis 1. Secondly, we tested the moderating effect of cybersecurity measures on the relationship between digital technology intensity and export performance. Accordingly, in Model 4, we added the interaction term between digital technology intensity and cybersecurity measures. Our results show that cybersecurity measures negatively moderate the relationship between digital technology intensity and export performance, as evidenced by the negative interaction term ($p < 0.10$). This supports Hypothesis 2, although we do not find strong support for the moderating effect of firm's cybersecurity measures on the relationship between advanced digital technology intensity and export performance.

As regards control variables, Firm size, Firm age, Past export performance and Geographical location - when organizations are located in northern Italy - are positive and significantly correlated with export performance. Surprisingly, product innovation is not significant. According to F statistics, all models in Table 4 have jointly significant coefficients. Whereas R² indicates that Model 4 fits the data better than other models. Finally, the variance inflation factor (VIF) of each regression model does not exceed 10, indicating no serious multicollinearity problems (Neter, Wasserman, and Kutner, 1990).

To check the robustness of our results, we introduced an alternative measure for digital technologies use, namely Share of investments in digital technologies, which is an ordinal variable ranging from 0 to 4. The results in Table 5 (Model 1 and 2) show a positive but non-significant coefficient. Therefore, Hypothesis 1 is not supported when using an alternative technology use measure; on the contrary, Hypothesis 2 is confirmed.

Research limitations. While acknowledging that the analysis is based on data that may not be considered exceptionally updated, it is essential to note that the nature of the low-tech sector under examination tends to exhibit relatively low dynamics. The unique characteristics of this sector suggest that the impact of digital technologies and cyber risk aversion may have experienced more gradual changes compared to high-tech industries. Consequently, the validity of the results is not necessarily compromised by the temporal gap. Additionally, it is noteworthy that this study stands out as one of the few quantitative investigations exploring the relationship between digital technologies, cyber risk aversion, and export performance in the low-tech sector. Despite the temporal considerations, the scarcity of such empirical research underscores the significance of the present findings, adding a unique dimension to the understanding of how advanced digital technologies impact internationalization strategies in traditionally low-tech industries. Secondly, the study considers small, medium-sized, and large companies alike, but the results may not necessarily be the same between them. Therefore, future studies should verify any differences between different sized enterprises. Thirdly, it is limited to cross-sectional data. The cross-sectional nature of the study provides information on correlations rather than unequivocal cause-and-effect mechanisms. Therefore, a more detailed analysis using panel data would be useful for further research. Finally, through more advanced statistical techniques, future research should consider the potential heterogeneity of the organizations included in the study and the initial differences between groups of companies exposed and not exposed to digital technologies and cybersecurity measures. In the future, the study could also be extended to several countries. Indeed, it is reasonable to assume that digitalization, together with other variables, may have different

effects on internationalization in different economic contexts. The adoption of some forms of digital technologies and cyber security measures are not geographically homogeneous, thus influencing the available policy options.

Managerial implications. The empirical results of this study suggest that food and beverage organizations should consider using advanced digital technologies to improve their export performance. Technology is a key tool to foster international expansion and increase trade efficiency. However, our research shows that high perceived cyber risks could curb their use. Organizations wishing to practice digital exporting should adopt a balanced approach that aims to protect business operations against cyber threats and mitigate perceived risks without compromising the use of technologies to enter and compete in international markets. As a result, they should engage to foster a corporate culture that recognizes both the need to protect data and the importance to innovate for business growth. Targeted training programs, specialized personnel, partnerships with security experts, and modern cybersecurity protocols are critical measures for responsible technology adoption. These measures are twofold; on the one hand, they improve risk awareness and reinforce best practices for addressing them; on the other hand, they bring the company closer to the technology and encourage it to leverage it.

Originality of the paper. This article addresses the call for digital trade studies focused on specific industries. Specifically, we focused on a single industry sector rather than the broader manufacturing environment and advanced technologies rather than the most common technologies, investigating their effect on firms' export performance. On the other hand, our study extends the research on digital exporting by analyzing how certain factors influence this positive relationship and interfere with it. In particular, we study how cyber risk aversion moderates the correlation between technologies and exports. Although the role of technology on internationalization strategies has been the subject of numerous studies, there is no exploration of this phenomenon within a traditionally low-tech sector.

References

- AKTER S., WAMBA S.F., GUNASEKARAN A., DUBEY R., CHILDE S.J. (2016), "How to improve firm performance using big data analytics capability and business strategy alignment?", *International Journal of Production Economics*, vol. 182, pp. 113-131.
- BONELL C., MEIKSIN R., MAYS N., PETTICREW M., MCKEE M. (2018), "Defending evidence informed policy making from ideological attack", *BMJ*, k3827.
- CARBALLO J., RODRIGUEZ CHATRUC M., SALAS SANTA C., VOLPE MARTINCUS C. (2022), "Online business platforms and international trade", *Journal of International Economics*, vol. 137, 103599.
- CAVUSGIL S. T., KNIGHT G. (2015), "The born global firm: An entrepreneurial and capabilities perspective on early and rapid internationalization", *Journal of International Business Studies*, vol. 46, n. 1, pp. 3-16.
- CEN M., JIANG F., QIN X., JIANG Q., DOSS R. (2024), "Ransomware early detection: A survey", *Computer Networks*, vol. 239, 110138.
- CHATTERJEE S., CHAUDHURI R., MARIANI M., WAMBA S.F. (2023), "Examining the role of intellectual capital on knowledge sharing in digital platform-based MNEs and its impact on firm performance", *Technological Forecasting and Social Change*, vol. 197, 122909.
- CREW S. (2018), "The potential of blockchain", *Food Science and Technology*, vol. 32, n. 1, pp. 54-56.
- DENG Z., JEAN R.J.B., SINKOVICS R.R. (2018), "Rapid expansion of international new ventures across institutional distance", *Journal of International Business Studies*, vol. 49, pp. 1010-1032.
- ELIA S., GIUFFRIDA M., MARIANI M.M., BRESCIANI S. (2021), "Resources and digital export: An RBV perspective on the role of digital technologies and capabilities in cross-border e-commerce", *Journal of Business Research*, vol. 132, pp. 158-169.
- GAO G.Y., MURRAY J.Y., KOTABE M., LU J. (2010), "A strategy tripod perspective on export behaviors: Evidence from domestic and foreign firms based in an emerging economy", *Journal of International Business Studies*, vol. 41, n. 3, pp. 377-396.
- GARCÍA F., AVELLA L., FERNÁNDEZ E. (2012), "Learning from exporting: The moderating effect of technological capabilities", *International Business Review*, vol. 21, n. 6, pp. 1099-1111.
- GHALANDARI K. (2013), "The Effect of Information and Communication Technology on Export Performance of Iranian Firms", *Research Journal of Applied Sciences, Engineering and Technology*, vol. 5, n. 17, pp. 4367-4372.
- GREENE W. H. (2003), *Econometric analysis (5th ed.)*, Upper Saddle River, NJ: Prentice Hall.
- GUERRA K.K., BOYS K.A. (2022), "A New Food Chain: Adoption and Policy Implications to Blockchain Use in Agri-Food Industries", *Applied Economic Perspectives and Policy*, vol. 44, n. 1, pp. 324-349.
- HASANI T., O'REILLY N., DEGHANTANHA A., REZANIA D., LEVALLET N. (2023), "Evaluating the adoption of cybersecurity and its influence on organizational performance", *SN Business & Economics*, vol. 3, n. 5, p. 97.
- HERVÉ A., SCHMITT C., BALDEGGER R. (2020), "Internationalization and Digitalization: Applying digital technologies to the internationalization process of small and medium-sized enterprises", *Technology Innovation Management Review*, vol. 10, n. 7, pp. 28-40.
- KITTIPANYA-NGAM P., TAN K.H. (2020), "A Framework for Food Supply Chain Digitalization: Lessons from Thailand", *Production Planning and Control*, vol. 31, pp. 158-172.
- LATINO M.E., MENEGOLI M. (2022), "Cybersecurity in the food and beverage industry: A reference framework", *Computers in Industry*, vol. 141, 103702.
- LEE C.K.H. (2017), "A GA-based optimization model for big data analytics supporting anticipatory shipping in Retail 4.0", *International Journal of Production Research*, vol. 55, n. 2, pp. 593-605.
- LEZZI M., LAZOI M., CORALLO A. (2018), "Cybersecurity for Industry 4.0 in the current literature: A reference framework", *Computers in Industry*, vol. 103, pp. 97-110.
- LIAO H., WANG B., BAIBING L., WEYMAN-JONES T. (2016), "ICT as a General-Purpose Technology: The Productivity of ICT in the United States Revisited", *Information Economics and Policy*, vol. 36, n. 3, pp. 10-25.

- MANNING L. (2019), "Food defence: refining the taxonomy of food defence threats", *Trends in Food Science & Technology*, vol. 85, pp. 107-115.
- MANNING L., SOON J.M. (2016), "Food safety, food fraud, and food defense: a fast-evolving literature: fast evolving literature of food", *Journal of Food Science*, vol. 81, pp. R823-R834.
- MARINAGI C., TRIVELLAS P., SAKAS D.P. (2014), "The Impact of Information Technology on the Development of Supply Chain Competitive Advantage", *Procedia - Social and Behavioral Sciences*, vol. 147, pp. 586-591.
- MCINTYRE D.P., SRINIVASAN A. (2017), "Networks, platforms, and strategy: emerging views and next steps", *Strategic Management Journal*, vol. 38, n. 1, pp. 141-160.
- MEYER K.E., LI J., BROUTHERS K.D., JEAN R. (2023), "International business in the digital age: Global strategies in a world of national institutions", *Journal of International Business Studies*, vol. 54, pp. 577-598.
- NAMBISAN S., ZAHRA S.A., LUO Y. (2019), "Global Platforms and Ecosystems: Implications for International Business Theories", *Journal of International Business Studies*, vol. 50, pp. 1464-1486.
- NETER J., WASSERMAN W., KUTNER M.H. (1990), "Applied Linear Statistical Models", 3rd edn, Irwin: Homewood, IL.
- POPKIN B.M. (2006), "Technology, transport, globalization, and the nutrition transition food policy", *Food Policy*, vol. 31, pp. 554-569.
- RAKSHIT S., ISLAM N., MONDAL S., PAUL T. (2022), "Influence of blockchain technology in SME internationalization: Evidence from high-tech SMEs in India", *Technovation*, vol. 115, 102518.
- RASHMI D., SHREE P., SINGH D.K. (2017), "Stable isotope ratio analysis in determining the geographical traceability of Indian wheat", *Food Policy*, vol. 79, pp. 169-176.
- REEB D., SAKAKIBARA M., MAHMOOD I.P. (2012), "From the editors: endogeneity in international business research", *Journal of International Business Studies*, vol. 43, n. 3, pp. 211-218.
- ROSS P.K., BLUMENSTEIN M. (2015), "Cloud Computing as a Facilitator of SME Entrepreneurship", *Technology Analysis & Strategic Management*, vol. 27, n. 1, pp. 87-101.
- SALOMON R. M., JIN B. (2008), "Does knowledge spill to leaders or laggards? Exploring industry heterogeneity in learning by exporting", *Journal of International Business Studies*, vol. 39, n. 1, pp. 132-150.
- SALOMON R. M., JIN B. (2010), "Do leading or lagging firms learn more from exporting?", *Strategic Management Journal*, vol. 31, n. 10, pp. 1088-1113.
- SPINK J., MOYER D.C. (2011), "Defining the public health threat of food fraud", *Journal of Food Science*, vol. 76, pp. R157-R163.
- STRANGE R., ZUCCELLA A. (2017), "Industry 4.0, global value chains and international business", *Multinational Business Review*, vol. 25, n. 3, pp. 174-184.
- TSENG K.M.K., JOHNSEN R.E. (2011), "Internationalization and the Internet in UK Manufacturing SMEs", *Journal of Small Business and Enterprise Development*, vol. 18, n. 3, pp. 571-593.
- TSOLAKIS N., NIEDENZU D., SIMONETTO M., DORA M., KUMAR M. (2021), "Supply Network Design to Address United Nations Sustainable Development Goals: A Case Study of Blockchain Implementation in Thai Fish Industry", *Journal of Business Research*, vol. 131, pp. 495-519.
- VAN SCHAIK P., JESKE D., ONIBOKUN J., COVENTRY L., JANSEN J., KUSEV P. (2017), "Risk perceptions of cyber-security and precautionary behaviour", *Computers in Human Behavior*, vol. 75, pp. 547-559.
- WAMBA S.F., GUNASEKARAN A., AKTER S., REN S.J.F., DUBEY R., CHILDE S.J. (2017), "Big data analytics and firm performance: Effects of dynamic capabilities", *Journal of Business Research*, vol. 70, pp. 356-365.
- WANG W., MA H. (2018), "Export strategy, export intensity and learning: Integrating the resource perspective and institutional perspective", *Journal of World Business*, vol. 53, pp. 581-592.
- WESSELS M., VAN DEN BRINK P., VERBURGH T., CADET B., VAN RUIJVEN T. (2021), "Understanding incentives for cybersecurity investments: Development and application of a typology", *Digital Business*, vol. 1, n. 2, 100014.
- WORLD ECONOMIC FORUM (WEF) WITH MCKINSEY & COMPANY (2014). *Risk and Responsibility in a Hyperconnected World*.
- ZIMMERMANN V., RENAUD K. (2019), "Moving from a 'human-as-problem' to a 'human-as-solution' cybersecurity mindset", *International Journal of Human-Computer Studies*, vol. 131, pp. 169-187.

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Tables and Figures

Table 1. Variables description

Variables	Type	Description
Dependent variable		
Export performance	Continuous variable	Logarithm of firm's export sales volume
Independent variable		
Digital technology intensity	Ordinal variable	Number of different technologies adopted by each firm, from 0 to 4.
Moderating variable		
Cybersecurity		Factor variable loading two variables, i.e. Cybersecurity Intensity (number of different cybersecurity measures by each firm, from 0 to 4) and Cybersecurity investment (firm's investment in cybersecurity measures)
Control variables		
Firm size	Ordinal variable	Firm size for employees' size classes (1 = 0 - 49 and 2 = 50 and over)
Firm age	Continuous variable	Logarithm of the difference between 2016 and the firm's founding year
Product innovation	Continuous variable	Logarithm of firm's expenditure on trial design and production activities
Geographical location	Ordinal variable	Geographical location of firm (South and islands = 1, Centre = 2, North = 3)
Past export performance	Continuous variable	Logarithm of firm's export sales volume at time t-1.

Source: own elaboration

Table 2. Descriptive statistics

Variable	N	Mean	Std. Dev.	Min	Max
1. Export performance (ln)	446	6.912697	3.740966	-	-
2. Digital technology intensity	446	0.38565	0.815121	0	4
3. Cybersecurity	446	2.336632	7.855954	-	-
4. Firm size	446	1.524664	0.499952	1	2
5. Firm age (ln)	446	3.58133	0.868213	-	-
6. Product innovation (ln)	446	1.469732	2.35758	-	-
7. Geographical location	446	2.132287	0.910852	1	3
8. Past export performance (ln)	446	5.630496	4.313253	-	-

Source: own elaboration.

Table 3. Pearson's correlations

	1	2	3	4	5	6	7	8
1. Export performance (ln)	.							
2. Digital technology intensity	0.2511	.						
3. Cybersecurity	0.128	0.28	.					
4. Past export performance (ln)	0.6922	0.221	0.0894	.				
5. Geographical location	-0.2463	-0.1022	-0.0976	-0.0744	.			
6. Firm size	0.3374	0.1862	0.0888	0.2516	-0.2317	.		
7. Product innovation (ln)	0.2079	0.2138	0.0987	0.2203	-0.1041	0.1550	.	
8. Firm age (ln)	0.1735	0.073	0.0425	0.1319	-0.1076	0.0673	0.1638	.

N = 446. Source: own elaboration.

Table 4. Linear regressions results

Dependent variable				
<i>Export performance</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Control variables				
<i>Firm size</i>				
0-49				
over 50	0.979*** (0.270)	0.915*** (0.268)	0.913*** (0.269)	0.901*** (0.268)
<i>Firm age (ln)</i>	0.258* (0.146)	0.245* (0.145)	0.244* (0.145)	0.255* (0.143)
<i>Product innovation (ln)</i>	0.055 (0.051)	0.037 (0.053)	0.036 (0.052)	0.036 (0.052)
<i>Geographical location</i>				
South and Islands				
Centre	-0.396 (0.353)	-0.479 (0.353)	-0.473 (0.351)	-0.468 (0.350)
North	1.359*** (0.269)	1.334*** (0.267)	1.325*** (0.269)	1.332*** (0.268)
AR(1) component				
<i>Past export performance</i>	0.545*** (0.038)	0.535*** (0.038)	0.535*** (0.038)	0.537*** (0.038)
Independent variable				
<i>Digital technology intensity</i>		0.351*** (0.120)	0.329*** (0.128)	0.383*** (0.126)
Moderating variable				
<i>Cybersecurity</i>			0.008 (0.017)	0.042 (0.029)
Interaction term				
<i>Digital technology intensity * Cybersecurity</i>				-0.014* (0.008)
<i>Constant</i>	1.893*** (0.563)	1.945*** (0.562)	1.943*** (0.561)	1.836*** (0.555)
<i>N</i>	446	446	446	446
<i>Model F statistics</i>	87.94***	81.08***	71.44***	63.55***
<i>R²</i>	0.54	0.55	0.55	0.56
<i>VIF</i>	1.15	1.15	1.16	1.68

Source: Own calculation. Standard error in brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$ (two tailed).

Table 5. Linear regressions results - alternative specification

Dependent variable		
<i>Export performance</i>	<i>Model 1</i>	<i>Model 2</i>
Control variables		
<i>Firm size</i>		
0-49		
over 50	0.966*** (0.270)	0.959*** (0.271)
<i>Firm age (ln)</i>	0.248* (0.147)	0.236* (0.148)
<i>Product innovation (ln)</i>	0.048 (0.052)	0.036 (0.053)
<i>Geographical location</i>		
South and Islands		
Centre	-0.403 (0.353)	-0.396 (0.351)
North	1.351*** (0.268)	1.347*** (0.269)
AR(1) component		
<i>Past export performance</i>	0.544*** (0.038)	0.545*** (0.038)
Independent variable		
<i>Share of investments in digital technologies</i>	0.111 (0.133)	0.156 (0.137)
Moderating variable		
<i>Cybersecurity</i>		0.043* (0.025)
Interaction term		
<i>Share of investments in digital technologies * Cybersecurity</i>		-0.021* (0.013)
<i>Constant</i>	1.902*** (0.563)	1.886*** (0.566)
<i>N</i>	446	446
<i>Model F statistics</i>	75.11***	59.29***
<i>R²</i>	0.55	0.55
<i>VIF</i>	1.14	1.58

Source: Own calculation. Standard error in brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$ (two tailed).

Industry 4.0, Sustainability, and Internationalization: A Systematic Literature Review

MARTINA TOMASETIG¹

Abstract

In today's rapidly changing business environment, the connection between Industry 4.0, sustainability, and internationalization holds high importance for scholars and practitioners alike. The integration of these three topics has gained significant attention in scholarly discourse in several research fields, from international business (IB) to operations, from sustainability to innovation, marketing, and entrepreneurial studies. This ongoing systematic literature review aims to uncover the relationship between Industry 4.0, sustainability, and internationalization at a firm level. The review employs the PRISMA approach and critically analyzes 55 high-quality journal articles. The research encompasses a descriptive and in-depth thematic analysis to extract insights and provide a thorough understanding of the state of the art. The work delves into the evolving perspectives, conceptual foundations, and empirical studies with the final objective of developing a synthetic framework to help identify the main topics of analysis and propose further research avenues, therefore providing actionable insights and contributing to the evolving discourse on integrating Industry 4.0 with sustainability in an international context.

Key words: Industry 4.0; internationalization; sustainability; literature review; international business; SDGs

Framing of the research. *In today's fast-paced VUCA world, where volatility, uncertainty, complexity, and ambiguity affect organizations' activities (Halloui et al., 2022), the relationship between Industry 4.0, sustainability, and internationalization has emerged as a critical nexus for organizations aiming to thrive in the global marketplace (Ciulli and Kolk, 2023). This research aims to map the existing literature on the convergence of these three topics, which have a transformative potential in understanding how firms do business.*

Digital transformation is moving trillions of dollars in economic value (Rüßmann et al., 2015) and has fundamentally altered various aspects of society, including how people live, work, think, and learn (Del Giudice et al., 2021). Digital development influences how firms operate nationally and internationally, boosting flexibility, speed, productivity, and quality (Rüßmann et al., 2015) while impacting internationalization processes, competitive advantage, and location choices (Li et al., 2022). Industry 4.0 affects the IB environment, emphasizing the interplay of digital innovation and social engagement, sustainability, and global entrepreneurship (Luo and Zahra, 2023). The impact digitalization has on social, ecological, and economic sustainability - the so-called Triple Bottom Line (Elkington, 1997) - has become a topic of growing interest, leading to flourishing literature that underlines the impact of digital technologies on sustainability at large (Broccardo et al., 2023). The study of the relationship between Industry 4.0 and sustainability is still relatively new. However, it has gained an exponentially growing interest from the academic community, leading to the development of theoretical frameworks (Beier et al., 2020; Isensee et al., 2020; Beltrami et al., 2021; Khan et al., 2021; Touriki et al., 2021; Holzmann and Gregori, 2023) and empirical analyses (Broccardo et al., 2023). Specifically, most recent studies underline the positive effect of adopting digital technologies on sustainable practices (Beltrami et al., 2021) and performance (Broccardo et al., 2023).

Concurrently, human-induced climate change underscores the urgency for sustainable business practices (IPCC, 2023). In this context, the United Nations' Sustainable Development Goals (SDGs) provide a strategic imperative and a global compass for businesses (Del Río Castro et al., 2021; UN DESA, 2023), calling upon the integration of sustainability not only as a societal obligation but also as a crucial component in shaping consumer preferences and business norms (IPCC, 2023). Sustainability efforts move together with the technological development of society (Del Río Castro et al., 2021; Broccardo et al., 2023). Integrating digital technologies and sustainability can drive better efficiency and effectiveness in business operations and reduce environmental impacts (Bag and Pretorius, 2022; Broccardo et al., 2023). Industry 4.0 can enable the implementation of sustainable practices across organizational boundaries, reducing information gaps and promoting collaboration among stakeholders (Ilinitch et al., 1998; Beltrami et al., 2021; Rejeb et al., 2022; Broccardo et al., 2023). Also, sustainability is expected to play a crucial role in pushing organizations toward technology adoption (Beltrami et al., 2021) even though this proposition remains an open question in academia (Rosa et al., 2020; Beltrami et al., 2021; Ghobakhloo et al., 2021; Perera et al., 2023). Sustainability in IB has become crucial

¹ University of Udine
e-mail: tomasetig.martina@spes.uniud.it

for organizations operating in global markets, leading to better environmental performance and management (Gómez-Bolaños et al., 2022).

Ultimately, with the rising between-countries inequalities and polycrisis (UN DESA, 2023), businesses are urged not to abandon global strategies despite global geopolitical tensions (Altman and Bastian, 2023). Internationalization allows firms to develop their activities globally, thus gaining significant competitive advantages in international markets (Jantunen, 2005). In recent years, the discipline has gained substantial interest in the emerging topics of digital technologies (Luo and Zahra, 2023) and sustainable development (Gómez-Bolaños et al., 2022). The degree of firm internationalization has been generally associated with positive, even though not linear, financial performance (Hsu and Boggs, 2003). Nonetheless, scholars have overlooked IB activities' social and environmental effects (Luo and Zahra, 2023).

All these challenges intensify the need for transformative change (Altman and Bastian, 2023), which may be achieved through a better holistic understanding of the complex interrelationships between digitalization, sustainability, and international strategies. The existing literature has partially scrutinized these aspects. However, a significant research gap remains (Ciulli and Kolk, 2023), thus requiring a novel analysis of the matter. Such a need has been underlined in a recent call by the Journal of International Business Studies (JIBS), which identifies calls for research to integrate Industry 4.0 and sustainability in IB research (Luo and Zahra, 2023).

Purpose of the paper. This work-in-progress systematic literature review (Massaro et al., 2016) aims to a) identify the main topics arising from studying the relationship between Industry 4.0, sustainability, and internationalization at a firm level in the existing literature and b) point out the directions for future research identified in studies concurrently addressing the three topics.

The study comprehensively reviews 55 high-quality journal articles to achieve its purpose. Through a rigorous examination, we delve into the context of these papers, seeking to extract insights that provide a thorough understanding of the existing state of the research (Paul and Criado, 2020). The review's findings will be synthesized through a dual-analysis approach encompassing a descriptive and in-depth thematic analysis. This approach allows us to uncover the main topics explored in the existing literature. The study's primary objective resides in developing a synthetic framework articulating the primary issues and their interconnection, representing this research domain's state of the art. Finally, the study will extend its impact by proposing future research questions, providing a foundation for developing this field of analysis.

Overall, we aim to respond to a compelling research call, providing a new perspective on the relevance of Industry 4.0 and sustainability in IB research.

Methodology. We employed the PRISMA methodology (Page et al., 2021), a structured approach recognized for its systematic review process. This method encompasses four steps to ensure the review's rigor and replicability – identification, screening, eligibility, and inclusion (Figure 1).

Step 1: Identification. We identified the papers using the Scopus and Web of Science (WOS) databases. Both are deemed two of the most comprehensive databases for academic literature and are widely used for developing literature reviews in various disciplines (Rosa et al., 2020). First, the keyword selection was performed. The keywords are classified into three clusters – Industry 4.0, sustainability, and internationalization. Words referred to Industry 4.0 were identified considering both keywords widely connected to the Industry 4.0 concept (Beltrami et al., 2021), as well as to its technologies at an academic (Frank et al., 2019) and practitioner's level (Rüßmann et al., 2015). The terms related to sustainability considered the work by Beltrami et al. (2021), a literature review on the relationship between digitalization and sustainability, and the work by Sarkis and Zhu (2018), which only reviews papers on sustainability. Finally, the keywords on internationalization were selected considering all the internationalization phenomena. Therefore, the focus was put on broad terms of internationalization (Fan et al., 2021), traditional MNEs (Ocelík et al., 2023), entry modes (Cuervo-Cazurra et al., 2023), and new internationalization phenomena (Paul and Rosado-Serrano, 2019; Romanello and Chiarvesio, 2019). The keywords were combined in a unique string using the OR and AND logical operators. Only articles and reviews in business, management, and accounting areas published in ABS-ranked journals (Chartered Association of Business Schools, 2021) written in English and published from 2011 to 2024 were considered. These restrictions were applied to guarantee the quality of the examined works, thus focusing the analysis on the "best available evidence" (Durach et al., 2017).

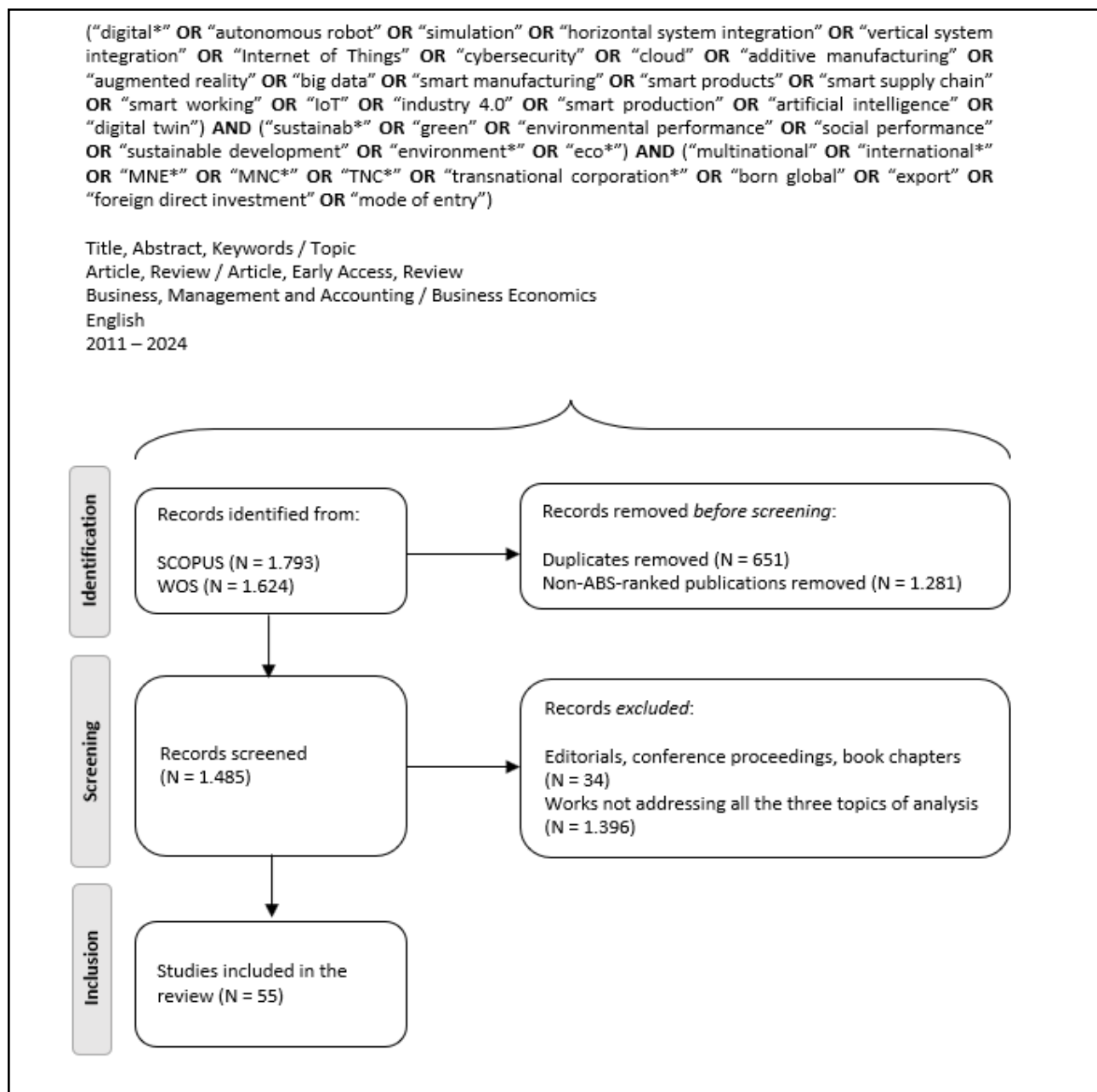
Step 2: Screening. The research performed on the Scopus database returned 1.793 results, whereas 1.624 documents were extracted from the WOS Core Collection database. We merged the two into a unique dataset containing 3.417 documents. Next, duplicates were removed, and non-ABS-ranked papers were excluded. The identified sample included 1.485 documents. Microsoft Excel and IBM-SPSS software were used to analyze the results of the research query, identify ABS-ranked papers, and delete duplicates. The documents were thoroughly screened by reading their abstract. Whenever the information provided in the abstract did not discern the paper's content, the full text was screened to assess its coherence with the analysis topic. The complexity of the subject called for an attentive process of exclusion of the papers carried out by the authors. Exclusion criteria were set considering the research aims of the work (Petticrew and Roberts, 2008).

The papers needed to be journal articles or literature reviews. Papers not falling within these categories (e.g., editorials, conference proceedings, book chapters) were removed. Furthermore, the documents needed to address all three topics. All papers missing at least one of these dimensions and works focused only on technical considerations (e.g., engineering studies on specific technologies and optimization simulations not providing managerial contributions) were excluded from the sample.

Step 3: Eligibility Assessment. Applying the exclusion and inclusion criteria allowed us to identify 55 papers extracted from the two databases. The works were read, analyzed, coded, and classified. In addition to the data extracted from Scopus and WOS, the following information was included for further analysis: type of research (theoretical, empirical, or literature review), the methodology adopted, main research findings and unit of analysis, digitalization topic addressed, sustainability topic addressed, internationalization focus and the interconnection of the three issues, future research avenues suggested, country of study, hypotheses or propositions developed, theoretical lens, framework, model adopted.

Step 4: Inclusion. In the final phase of the research, a comprehensive examination of the 55 selected articles was undertaken. This involved a descriptive analysis and an in-depth thematic study, with the final aim of creating a synthetic framework that systematically categorizes studies exploring the nexus of Industry 4.0, sustainability, and internationalization.

Figure 1: PRISMA 2020 flow diagram for new systematic reviews



Source: our elaboration

Preliminary Results and Future Steps. Preliminary findings from the analysis, including descriptive and thematic coding, reveal several critical insights regarding the existing literature on the convergence of digitalization, sustainability, and internationalization.

Descriptive findings. The descriptive analysis followed the fashion of previous literature reviews (Ocelík et al., 2023; Romanello & Chiarvesio, 2019) to achieve a good representation of the research trajectory on the relationship between Industry 4.0, sustainability, and internationalization and to provide a compelling narrative, which underlines the multidisciplinary of the topic. The 55 articles were published between 2015 and 2024, with a notable rise in publications culminating in 20 papers published in 2023. The primary source for these articles was the *Journal of Cleaner Production* (9), followed by *Technological Forecasting and Social Change* (5).

Looking at the field categorization provided within the ABS ranking (Chartered Association of Business Schools, 2021), the articles selected belong to several research fields. The works were primarily published in IB and area studies journals (12). However, a great deal of work also comes from outlooks on ethics, CSR, and management (10), sectoral studies (9), innovation (8), and operations management (4). The sample also includes articles published in the fields of information management (2), economics (2), social sciences (2), strategy (1), marketing (1), entrepreneurship (1), organizational studies (1), finance (1) and human resource management (1).

Most of the scrutinized papers were empirical (33). Nonetheless, many theoretical articles are also present in the sample (14), suggesting that a substantial body of work conceptualizes the interrelation of the topics under scrutiny. Finally, 8 papers were literature reviews. The breakdown of empirical papers allows for a further distinction of the methodological characteristics of the studies. Among the 33 papers, 15 employed quantitative methods, 14 qualitative methods, and 4 a mixed method approach.

We can identify two main categories by looking at the geographical distribution of empirical studies. The first includes single-country studies (15). The second refers to cross-country analyses (18). Within the single country set of articles, most are developed within Asia (8) and European countries (4), whereas the African and American continents are scrutinized in 2 and 1 papers, respectively. Most articles opted for a cross-country design, showcasing a global perspective that includes multiple nations and regions. Most empirical papers (8) took an overall international approach.

Thematic analysis. We can glimpse several study perspectives by looking into the content of prior literature reviews. Some reviews address the pressing issues of the impact of COVID-19 on the social sustainability of global supply chains (Sajjad, 2021) or the crisis management potential of digital technologies (Galetsi et al., 2023). Others explore broader trends, such as the transformation of international human resource management and the role of digital technologies in international mobility (Fan et al., 2021) or the potential of Industry 4.0 for sustainable development of GVCs (Awan et al., 2021) and MNEs (Dias Lopes et al., 2023; Ocelík et al., 2023). A growing interest exists in how digital tools can be harnessed for economic growth and social good, especially in developing countries (Ghauri et al., 2022). Concerns around the responsible implementation of digitalization, including cybersecurity risks (Sanili Aydin and Uste, 2022) and ensuring data privacy and ethics (Galetsi et al., 2023), emerge as relevant themes. These reviews provide a valuable foundation for understanding this evolving field, highlighting opportunities and challenges that demand further investigation.

At a conceptual level, the research delves into the intricate connections between digitalization, sustainability, and internationalization (George and Schillebeeckx, 2022). A common theme is the potential of digital technologies, including AI and Big Data, to address sustainability challenges within MNEs and GVCs (Pla-Barber et al., 2021; George and Schillebeeckx, 2022; Wedemeier and Wolf, 2022; Choy et al., 2023; Ciulli and Kolk, 2023; Wang, 2023; Etemad, 2024). These technologies can enhance control mechanisms, improve decision-making, and promote sustainability (Pla-Barber et al., 2021; Choy et al., 2023; Wang, 2023). Nonetheless, concerns exist around the environmental impact of digitalization, such as e-waste, and the potential for exacerbating social inequalities (Dauvergne, 2022; Ciulli and Kolk, 2023; Yi et al., 2023). Interestingly, sustainability is emerging as a driver of internationalization strategies, influenced by changing consumer preferences and pressure to address climate change (Ghauri et al., 2021; Choy et al., 2023; Asakawa and Clegg, 2024; Etemad, 2024). The complex and evolving landscape of IB requires new theoretical frameworks and a focus on the opportunities and challenges digitalization presents (Verbeke and Hutzschenreuter, 2021; Ghauri et al., 2022; Malik and Froese, 2022; Ciulli and Kolk, 2023). Collaboration and partnerships with local stakeholders are crucial for navigating the complexities of IB activities and achieving shared value creation using digital technologies for sustainability (Choy et al., 2023; Yi et al., 2023; Asakawa and Clegg, 2024).

A preliminary review of the empirical studies highlights recurring themes across the literature. Firstly, a distinction can be made between studies addressing MNEs versus international SMEs. Overall, there is widespread recognition of the transformative impact of digital technologies, including Industry 4.0, cloud computing, AI, and 3D printing, in driving sustainability efforts and enhancing organizational competitiveness in MNEs (Tatham et al., 2015; Ajwani-Ramchandani et al., 2021; Il Park and Xiao, 2021; Patchell and Hayter, 2021; Oyinola et al., 2022; Cortese et al., 2023; Costa et al., 2023; Ferreira et al., 2023; Li, Zhang, et al., 2023). These technologies enable resource optimization, supply chain resilience, and tailored solutions, thereby contributing to environmental conservation, social sustainability, and improved performance and reputation (Stroud, 2020.; Akhtar et al., 2018; Forcadell et al., 2020; Díaz-Chao et al., 2021; Costa et al., 2023; Ferreira et al., 2023; Li, Ye et al., 2023; Li, Zhang, et al., 2023). Conversely, no common understanding of digitalization's positive effects on SMEs' performance is identified. Some researchers argue that digitalization can play a constructive role in SMEs' internationalization and sustainability strategies (Mamabolo and Lekoko, 2021; Del Giudice et al., 2023; Falcke et al., 2023), while other works underscore the challenges deriving from Industry 4.0 and sustainability adoption (De Lucas Ancillo et al., 2022; Dwivedi et al., 2022; Oliva et al., 2022a; Jamwal et al., 2023; Suchek et al., 2023; Choi et al., 2024) and identify those as competing growth paths in case of SMEs' internationalization (Denicolai et al., 2021).

Secondly, several studies delve into business model adaptation and sustainability in IB settings (Asi et al., 2023; Li, Lahy, et al., 2023; Ringvold et al., 2023; Oghazi et al., 2024; Thornton, 2024) underlying the progressive shift of international enterprises' business models towards circular digitally enabled ones. Also, the literature focuses on global supply chain and logistics (Holl and Mariotti, 2022; Marrucci et al., 2022), confirming the positive effect of digitalization on the sustainability of supply chain management.

Finally, research at the individual level addresses consumer attitudes toward digital technologies (Ratten, 2015), providing several insights into the ethical evaluation companies need to consider when introducing digital innovation in global markets.

Future research avenues. Consistent calls for future research permeate the selected works, highlighting the need to address gaps, understand stakeholder interests, and explore implications for governance, organizational structures, and location advantages (Awan et al., 2021; Ocelík et al., 2023).

First, there is a need to analyze the role of Industry 4.0 technologies and circular economy in global supply chains. Existing literature has highlighted the potential of digital technologies in promoting circular economy principles in supply chain management (Awan et al., 2021; Dauvergne, 2022). However, empirical research on the topic is lacking.

Second, novel research shall investigate the role of entry modes and international performance in the context of Industry 4.0. Research has primarily focused on the bright side of digitalization and its effect on sustainable IB (Oliva et al., 2022; Dias Lopes et al., 2023). Nonetheless, a need emerges to delve into the specific entry modes and their impact on IB performance in the era of digitalization.

A third area of novel research addresses the role of digital technologies and environmental costs in global manufacturing. While studies have highlighted the positive impact of digital technologies on environmental and social sustainability in manufacturing (Ferreira et al. 2023; Li, Ye et al. 2023), there is a need to investigate further the potential ecological costs associated with the widespread adoption of Industry 4.0 technologies at an international level.

Finally, Industry 4.0 and sustainable consumption behavior in global markets should be addressed. Existing works have explored the impact of Industry 4.0 on sustainable consumption (Ratten, 2015). However, a gap remains in developing empirical research to understand consumer behavior in the context of digital transformation in diverse international markets.

Future steps for research development. Notably, this research is a work-in-progress. The following research steps will further develop the preliminary findings through a more systematic approach. The next steps will include refining the descriptive and thematic analysis by organizing the data into a synthetic framework. Additionally, conducting a comprehensive literature synthesis to identify critical patterns, themes, and gaps will be crucial. Subsequently, the research can address these gaps through empirical studies that delve deeper into the relationship between digitalization, sustainability, and internationalization. Finally, integrating theoretical perspectives and applying robust methodologies will enhance the credibility and rigor of this literature review.

Research limitations. This ongoing research paper presents limitations that should be acknowledged.

Firstly, the study's scope is limited to a review of journal articles, excluding conference proceedings and book chapters. Given the time required to publish journal articles, this choice may lead to not capturing all the novel research trends.

Secondly, the rigorous analysis approach (Page et al., 2021) may have excluded relevant papers that did not fit the pre-defined inclusion criteria.

Finally, the development of a synthetic framework, while helpful in identifying the main topics of analysis and proposing future research avenues, may not capture the full complexity of the relationship between digitalization, sustainability, and internationalization.

Managerial implications. This work-in-progress research offers valuable insights with significant organizational consequences by reviewing the literature on Industry 4.0, sustainability, and internationalization at a firm level. For researchers interested in pursuing this study area, the preliminary findings highlight some critical research gaps and suggest future research avenues.

For businesses, the research provides valuable guidance on leveraging digitalization to support sustainable practices within IB operations, allowing firms to explore opportunities to enhance resource efficiency, reduce environmental impact, and potentially improve brand reputation. Also, firms can become aware of the downsides of Industry 4.0 adoption and gain an understanding of strategic insights on leveraging digitalization and sustainability for thoughtful international strategies.

Additionally, policymakers can utilize the findings to understand the complex challenges and opportunities at the intersection of digitalization, sustainability, and internationalization. This knowledge can inform the development of policies encouraging MNEs and SMEs to adopt responsible digital business practices in the global marketplace.

Originality of the paper. This ongoing research addresses a critical research gap by conducting a systematic literature review on the convergence of Industry 4.0, sustainability, and internationalization at a firm level.

The work analyzes 55 high-quality journal articles and delves into the context of these papers to extract insights and provide a thorough understanding of the existing state of the research (Massaro et al., 2016). The review employs descriptive and thematic analysis to uncover the main topics explored in the literature, evidencing the primary themes, and offering a representation of the state of the art in this research domain (Ocelík et al., 2023).

The focus on the interplay between these three elements provides a novel perspective on IB research. This work responds to a compelling call for research in the IB area (Luo and Zahra 2023). By highlighting the transformative potential of digital technologies in driving sustainable practices in IB strategies, the research addresses a highly relevant topic in today's rapidly changing business environment. The development of a framework of analysis stemming from the literature review offers a valuable starting point for further discussion and investigation within this emerging field of research.

References

- ALTMAN SA, BASTIAN CR (2023), "The State of Globalization in 2023", *Harvard Business Review*.
- AWAN U., SROUFE R., SHAHBAZ M. (2021), "Industry 4.0 and the circular economy: A literature review and recommendations for future research", *Business Strategy and the Environment*, vol. 30, n. 4, pp. 2038–2060.
- BAG S., PRETORIUS JHC (2022), "Relationships between industry 4.0, sustainable manufacturing and circular economy: proposal of a research framework", *International Journal of Organizational Analysis*, vol. 30, n. 4, pp. 864–898.
- BEIER G., ULLRICH A., NIEHOFF S., REISSIG M., HABICH M. (2020), "Industry 4.0: How it is defined from a sociotechnical perspective and how much sustainability it includes – A literature review", *Journal of Cleaner Production*, vol. 259, 120856.
- BELTRAMI M., ORZES G., SARKIS J., SARTOR M. (2021), "Industry 4.0 and sustainability: Towards conceptualization and theory", *Journal of Cleaner Production*, vol. 312, 127733.
- BROCCARDO L., TRUANT E., DANA LP (2023), "The interlink between digitalization, sustainability, and performance: An Italian context," *Journal of Business Research*, vol. 158., 113621.
- CHARTERED ASSOCIATION OF BUSINESS SCHOOLS (2021), *ABS Academic Journal Guide 2021*.
- CIULLI F., KOLK A. (2023), "International Business, digital technologies and sustainable development: Connecting the dots", *Journal of World Business*, vol. 58, n. 4, 101445.
- CUERVO-CAZURRA A., DURAN P., ARREGLE JL, VAN ESSEN M. (2023), "Host Country Politics and Internationalization: A Meta-Analytic Review", *Journal of Management Studies*, vol. 60, n. 1, pp. 204–241.
- DURACH CF, KEMBRO J., WIELAND A. (2017), "A New Paradigm for Systematic Literature Reviews in Supply Chain Management", *Journal of Supply Chain Management*, vol. 53, n. 4, pp. 67–85.
- ELKINGTON JOHN. (1997), *Cannibals with forks: the triple bottom line of 21st century business*, New Society Publisher, Gabriola Island.
- FAN D., ZHU CJ, HUANG X., KUMAR V. (2021), "Mapping the terrain of international human resource management research over the past fifty years: A bibliographic analysis", *Journal of World Business*, vol. 56, n. 2., 101185.
- FRANK AG, DALENOGARE LS, AYALA NF (2019), "Industry 4.0 technologies: Implementation patterns in manufacturing companies", *International Journal of Production Economics*, vol. 210, pp. 15–26.
- GHOBAKHLOO M., FATHI M., IRANMANESH M., MAROUFKHANI P., MORALES ME (2021), "Industry 4.0 ten years on: A bibliometric and systematic review of concepts, sustainability value drivers, and success determinants", *Journal of Cleaner Production*, vol. 302, 127052.
- DEL GIUDICE M., SCUOTTO V., PAPA A., TARBA SY, BRESCIANI S., WARKENTIN M. (2021), "A Self-Tuning Model for Smart Manufacturing SMEs: Effects on Digital Innovation", *Journal of Product Innovation Management*, vol. 38, n. 1, pp. 68–89.
- GÓMEZ-BOLAÑOS E., ELLIMÄKI P., HURTADO-TORRES NE, DELGADO-MÁRQUEZ BL (2022), "Internationalization and environmental innovation in the energy sector: Exploring the differences between multinational enterprises from emerging and developed countries", *Energy Policy*, vol. 163, 112867.
- HALLIOUI A., HERROU B., SANTOS RS, KATINA PF, EGBUE O. (2022), "Systems-based approach to contemporary business management: An enabler of business sustainability in a context of industry 4.0, circular economy, competitiveness and diverse stakeholders", *Journal of Cleaner Production*, vol. 373, 133819.
- HOLZMANN P., GREGORI P. (2023), "The promise of digital technologies for sustainable entrepreneurship: A systematic literature review and research agenda", *International Journal of Information Management*, vol. 68, 102593.
- HSU C.-C., BOGGS DJ (2003), "Internationalization and Performance: Traditional Measures and Their Decomposition", *The Multinational Business Review*, vol. 11, n. 3, pp. 23–49.
- ILINITCH AY, SODERSTROM NS, THOMAS TE (1998), "Measuring corporate environmental performance", *Journal of Accounting and Public Policy*, vol. 17, pp. 383–408.
- IPCC (2023), *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]*. IPCC, Geneva, Switzerland, pp. 35–115.
- ISENSE C., TEUTEBERG F., GRIESE KM, TOPI C. (2020), "The relationship between organizational culture, sustainability, and digitalization in SMEs: A systematic review", *Journal of Cleaner Production*, vol. 275, 122944.
- JANTUNEN A. (2005), "Entrepreneurial Orientation, Dynamic Capabilities and International Performance", *Journal of International Entrepreneurship*, vol. 3, pp. 223–243.
- KHAN IS, AHMAD MO, MAJAVA J. (2021), "Industry 4.0 and sustainable development: A systematic mapping of triple bottom line, Circular Economy and Sustainable Business Models perspectives", *Journal of Cleaner Production*, vol. 297, 126655.
- LI F., CHEN Y., ORTIZ J., WEI M. (2022), "The theory of multinational enterprises in the digital era: state-of-the-art and research priorities", *International Journal of Emerging Markets*, vol. 19, n. 2, pp. 390–411.
- LUO Y., ZAHRA SA (2023), "Industry 4.0 in international business research", *Journal of International Business Studies*, vol. 54, pp. 403–417.
- MASSARO M., DUMAY J., GUTHRIE J. (2016), "On the shoulders of giants: undertaking a structured literature review in accounting", *Accounting, Auditing and Accountability Journal*, vol. 29, n. 5, pp. 767–801.
- OCELÍK V., KOLK A., CIULLI F. (2023), "Multinational enterprises, Industry 4.0 and sustainability: A multidisciplinary review and research agenda", *Journal of Cleaner Production*, vol. 413, 137434.

- PAGE MJ, MCKENZIE JE, BOSSUYT P.M., BOUTRON I., HOFFMANN TC, MULROW CD, SHAMSEER L., TETZLAFF JM, AKL EA, BRENNAN SE, CHOU R., GLANVILLE J., GRIMSHAW JM, HRÓBJARTSSON A., LALU MM, LI T., LODER EW, MAYO-WILSON E., MCDONALD S., MCGUINNESS LA, STEWART LA, THOMAS J., TRICCO AC, WELCH VA, WHITING P., MOHER D. (2021), “The PRISMA 2020 statement: An updated guideline for reporting systematic reviews”, *The BMJ*, vol. 372, n. 71.
- PAUL J., CRIADO AR (2020), “The art of writing literature review: What do we know and what do we need to know?”, *International Business Review*, vol. 29, n. 4, 101717.
- PAUL J., ROSADO-SERRANO A. (2019), “Gradual Internationalization vs Born-Global/International new venture models: A review and research agenda”, *International Marketing Review*, vol. 36, n. 6, pp. 830-858.
- PERERA P., SELVANATHAN S., BANDARALAGE J., SU JJ (2023), “The impact of digital inequality in achieving sustainable development: a systematic literature review”, *Equality, Diversity and Inclusion*, vol. 42, n. 6, pp. 805-825.
- PETTICREW M., ROBERTS H. (2008), *Systematic Reviews in the Social Sciences A PRACTICAL GUIDE*, Blackwell Publishing, Oxford.
- REJEB A., SUHAIZA Z., REJEB K., SEURING S., TREIBLMAIER H. (2022), “The Internet of Things and the circular economy: A systematic literature review and research agenda”, *Journal of Cleaner Production*, vol. 350, 131439.
- DEL RÍO CASTRO G., GONZÁLEZ FERNÁNDEZ MC, URUBURU COLSA Á. (2021), “Unleashing the convergence amid digitalization and sustainability towards pursuing the Sustainable Development Goals (SDGs): A holistic review”, *Journal of Cleaner Production*, vol. 280, 122204.
- ROSA P., SASSANELLI C., URBINATI A., CHIARONI D., TERZI S. (2020), “Assessing relations between Circular Economy and Industry 4.0: a systematic literature review”, *International Journal of Production Research*, vol. 58, n. 6, pp. 1662–1687.
- RÜSSMANN M., LORENZ M., GERBERT P., WALDNER M., JUSTUS J., ENGEL P., HARNISCH M. (2015), *Industry 4.0 The Future of Productivity and Growth in Manufacturing Industries*, vol. 9, n. 1, pp. 54-89.
- SARKIS J., ZHU Q. (2018), “Environmental sustainability and production: taking the road less travelled”, *International Journal of Production Research*, vol. 56, n. 1–2, pp. 743–759.
- TOURIKI FE, BENKHATI I., KAMBLE SS, BELHADI A., EL FEZAZI S. (2021), “An integrated smart, green, resilient, and lean manufacturing framework: A literature review and future research directions”, *Journal of Cleaner Production*, vol. 319, 128691.
- UN DESA (2023), *The-Sustainable-Development-Goals-Report-2023*

Websites

<http://www.societamanagement.it>
<http://www.sinergiejournal.it>

The advantage of stateness abroad: an analysis of the social networks of state-owned enterprises

GABRIELE GALLI¹ ROBERTO URBANI²

Abstract.

The present research delves into the intricate role of network structures at the board level in steering the internationalization strategies of state-owned enterprises (SOEs). By integrating Social Network Analysis (SNA), this study meticulously explores how network centrality, density, and the diversity of ties influence SOEs' endeavors in global markets. Drawing upon theoretical frameworks from International Business and corporate governance, the analysis scrutinizes the impact of network characteristics on the international activities and market expansion of SOEs, with a particular focus on the European context. The findings reveal that network centrality enhances SOEs' ability to form international deals, while network density is linked to a competitive advantage in global markets. Additionally, the diversity of network ties is found to significantly contribute to successful market expansion. These insights not only shed light on the mechanisms guiding SOEs' global expansion but also underscore the importance of understanding network structures for policymakers, practitioners, and scholars in the field of International Business. The study, while centered on Europe, highlights the broader applicability of its findings to SOEs' internationalization strategies in various geopolitical and economic settings, offering a foundation for future comparative studies.

Key words: State-owned enterprises, Internationalization, International Business, Foreign markets, Social network analysis, Network theory

Framing of the research. State-owned enterprises (SOEs) are becoming increasingly important worldwide. According to the OECD, the proportion of SOEs in the top 500 global companies has seen an increase of three times from the first years of this century (OECD, 2023). SOEs in the OECD area are valued at over 2 trillion USD and are highly concentrated in strategic sectors. Half of SOEs by value operate in the network industries (telecoms, electricity and gas, transportation and postal services) and SOEs cross-border activity has diversified and increased in this century (Cuervo-Cazurra et al., 2014). For decades, SOEs have faced an evolving landscape in different political and geographical areas. During the last century, especially after the Second World War, developed countries have seen a strong increase in the development of new SOEs and in their international activity, while emerging economies led the global scenarios only in the last 30 years (IMF, 2020). This process has led to the creation of global players.

SOEs contribute to the domestic development and business goals. Moreover, SOEs serve as a vehicle to reach fundamental non-business (political) objectives by governments, such as the supply of critical resources, national security and technological knowledge. A clear example of this phenomenon is the case of the Italian oil&gas national company ENI in Algeria after the beginning of the Ukraine-Russia conflict. With the new agreement, the Italian government was able to solve the incumbent problem of raw materials supply (gas) through the one of main SOEs in the energetic sector.

The International business (IB) literature shows a similar path to the development of SOEs in the business world mentioned before, focusing on different periods, geographical contexts and institutional, political, economic and governance features (Cuervo-Cazurra et al., 2023). For these reasons, SOEs are crucial actors in the international and domestic landscape both, as well as a relevant topic for policy, institutions, firms and practitioners.

This research aims to pose again the attention on the European context as in the seminal papers on SOEs and internationalization, considering the limited attention in the last decade of studies on emerging markets with a prevalence of Chinese companies. In order to reach this goal, we use a social network analysis of European SOEs to investigate the role of network centrality, density and diversity of network ties in shaping their internationalization activity. With this research, we aim to contribute to the ongoing debate on SOEs internationalization extending the view on board of directors features and focusing on a unique international context. Drawing on previous theories and contending their assumptions, we contribute to the literature on SOEs and internationalization, developing a set of hypotheses on SOEs' formal network structure.

¹ LUISS University
e-mail: ggalli@luiss.it

² Università Campus Bio-Medico di Roma
e-mail: r.urbani@unicampus.it

Social Network Analysis (SNA) is a methodological approach used to analyze the patterns of interaction among social entities such as individuals, groups, organizations, or even entire societies. This analysis focuses on understanding the relationships and networks that form among these entities and how these relationships impact behaviors, decisions, and outcomes. SNA examines various aspects of these networks, including the structure (like network density or centrality), the quality of relationships (like strength or reciprocity), and the dynamics of network changes over time.

SNA is applied in various fields, including sociology, anthropology, psychology, business, and more recently, in online social media studies. It provides insights into how information flows, how influential certain entities are within a network, and how subgroups and communities form within larger networks.

The book of Wasserman & Faust (1994) is considered a comprehensive and authoritative text in the field, providing both theoretical and practical guidance on conducting social network analysis. It covers a wide range of topics, from basic concepts and measures in network analysis to its applications in various disciplines.

SNA in the field of International Business is a methodological tool focused on analyzing social networks among individuals, groups, organizations, or entire nations. This approach examines how relationships among these actors influence behaviors, resource allocation, information flows, and overall success in the international business context.

SNA emphasizes studying network structures, looking at aspects such as the density of connections, bridges between different groups, or central nodes within the network. This analysis can reveal hidden dynamics, such as power distribution, access to resources, innovation diffusion, strategic alliance formation, and cultural or geographical barriers within and among organizations.

In International Business, SNA is particularly useful for understanding how global networks of communication and cooperation influence business strategies, international expansion, and competitiveness. For instance, it can help companies identify key strategic partners, understand how information travels across different cultures and markets, and develop strategies to navigate complex international networks.

Tichy et al. (1979) is one of the earliest and most influential works applying social network analysis in an organizational context and provides a solid foundation for understanding how this methodology can be applied in the realm of business.

Studying State-Owned Enterprises (SOEs) in the field of International Business is important for several reasons:

a) *Economic Impact and Prevalence:* SOEs are significant players in the global economy. They often control substantial shares in key sectors such as energy, utilities, and telecommunications. Understanding the operations and strategies of SOEs is crucial due to their impact on global trade and investment patterns.

b) *Government Influence and Policy Implications:* SOEs are unique in that they are influenced by government policies and objectives. This dual role of being economic and political entities makes it essential to study how they balance commercial objectives with governmental mandates, and how this affects international trade and investment environments.

c) *Competitive Dynamics:* SOEs can operate under different rules from private sector companies, including receiving state support or subsidies. This can significantly alter competitive dynamics in international markets, raising important questions about market fairness, competition policy, and the level playing field in international trade.

d) *Globalization and Market Entry Strategies:* SOEs are increasingly engaging in internationalization strategies. Studying their approaches to entering foreign markets, forming international partnerships, and navigating diverse regulatory landscapes contributes to a broader understanding of global business practices.

e) *Cross-Cultural Management and Governance:* SOEs often have different management and governance structures compared to private firms. This raises interesting questions about how these structures influence international business practices, cross-cultural management, and corporate governance in an international context.

f) *Innovation and Technology Transfer:* Some SOEs are at the forefront of innovation in their respective industries. Studying them can provide insights into how state involvement affects technological advancement and the international transfer of technology.

g) *Response to Global Challenges:* SOEs often play critical roles in responding to global challenges such as climate change, energy security, and sustainable development. Understanding their strategies and actions in these areas is crucial for comprehending broader efforts in addressing global issues.

First studies concerning the internationalization of SOEs in IB literature appeared starting from the 1970s, focusing on advanced economies (Aharoni, 1980; Vernon, 1979). Since the beginning of this branch of research, authors suggested different influences and impacts of state ownership on international expansion, highlighting the advantages or disadvantages of states (Cuervo-Cazurra & Li, 2021). However, after these pioneering studies for many years the interest on SOEs vanished, SOEs were considered inherently inefficient entities and in many European countries push forward intensive privatization plans. In the last decade, new studies have emerged especially focusing on emerging economies that led the international environment from early 2000s, reporting state-owned firms' internationalization as a prominent topic in IB literature (Cuervo-Cazurra, 2018; Grøgaard et al. 2019; Cuervo-Cazurra et al. 2023). SOEs are particular kind of companies in which the government (or other national public entities) owns shares of capital, often a majority stake, although minority ownership is sometimes considered within SOEs due to the presence of significant influence in business decisions (Inoue et al., 2013). Moreover, a growing number of studies is considering the new nature of these companies globally, focusing on "hybrid" SOEs, in which the government owns only a partial percentage of equity shares (Estrin et al., 2016; Chen et al., 2018; Bruton et al., 2015).

These types of firms have characteristics related to the specific goals and interests they pursue, thus generating peculiar differences in the ownership and board compared to private firms. Governments can directly influence the

management of such companies to achieve different types of objectives. The first substantial difference from private firms concerns the type of goals pursued, which is not coincident with opportunity to maximise profit. In fact, the State, through its involvement in the capital of companies, wants to ensure the so-called “non-business objectives” that involve the pursuit of national interests (Cuervo-Cazurra et al., 2014), such as the supply of natural resources, energy and security (Bass & Chakrabarty, 2014; Buckley et al., 2008). These non-business objectives may collide with the goal of profit maximisation. Indeed, national interests, driven by politics and governments, are given priority.

Consequently, corporate governance mechanisms in this type of companies present specific characteristics that need more in-depth studies (Grosman et al. 2016), considering, fundamental aspects such as political features, risks and performance (Tihanyi et al., 2019). In international business literature, we can find mixed results about state ownership and internationalization, that confirm the need for more studies. Some authors argue a negative influence of state ownership on firm internationalization (Wu & Chen, 2014; Zhang et al., 2011), while others suggest a positive relationship (Hennart et al., 2017; Benito et al., 2016) or inconsistent results (Liang et al., 2015; Hu & Cui, 2014). However, the influence of state ownership on internationalization remains still unclear (Musacchio & Lazzarini, 2014).

Purpose of the paper. The escalating prominence of state-owned enterprises (SOEs) in the global marketplace, coupled with their evolving roles across strategic sectors, underscores the need for a deeper examination of the factors influencing their internationalization strategies. This paper endeavors to dissect the intricate interplay between network structures at the board level and the internationalization processes of SOEs. Positioned at the nexus of International Business (IB) studies, corporate governance, and social network analysis, the purpose of this paper is multifaceted, aiming to elucidate the underexplored dynamics that shape SOEs' global market activities.

At the core of this investigation is the ambition to unveil how the centrality, density, and diversity of ties within SOEs' board networks impact their internationalization strategies. This focus emerges from a recognition of the profound yet nuanced effects that formal and informal network structures can have on organizational outcomes. Through a detailed social network analysis, this paper seeks to contribute to a nuanced understanding of the network-related mechanisms that facilitate or impede SOEs' international endeavors.

This research is driven by a purpose to bridge critical gaps in the current body of literature concerning the internationalization of SOEs. While previous studies have offered valuable insights into various aspects of SOEs' operations and strategies, there remains a significant lack of understanding regarding the role of network structures. By integrating theories from the realms of IB, corporate governance, and social network analysis, this paper aims to offer a comprehensive framework that can explain the complex dynamics at play in the internationalization of SOEs.

Another pivotal aim of this paper is to recenter the academic discourse on the European context of SOE internationalization. Recognizing the unique political, economic, and institutional landscape of Europe, this study seeks to illuminate how these factors, in conjunction with network structures, influence SOEs' international strategies. This focus is intended to not only fill a geographical gap in the literature but also to provide insights that could inform policy and strategic decision-making within and beyond the European context.

Employing social network analysis as the primary methodological approach, this paper sets out to make a significant methodological contribution to the study of SOEs. By meticulously mapping and analyzing the network structures of SOE boards, this research aims to offer new methodological avenues for exploring the relationship between network characteristics and organizational strategies. This approach underscores the paper's commitment to advancing the methodological tools available for investigating the complexities of SOEs in the international arena.

Beyond its academic contributions, this paper is motivated by the purpose to offer practical implications for policymakers, corporate leaders, and practitioners. By uncovering the roles that network structures play in shaping SOEs' international strategies, this research aims to provide actionable insights that can guide the formulation of policies and strategies to enhance the global competitiveness of SOEs.

In conclusion, this paper seeks to advance our understanding of the internationalization strategies of SOEs by focusing on the role of network structures at the board level, particularly within the European context. Through a comprehensive theoretical and methodological approach, this research aspires to bridge existing gaps in the literature, contribute to the development of new analytical frameworks, and offer practical insights for the effective management and governance of SOEs in the global marketplace.

Methodology. This chapter outlines the methodological framework employed in this study to investigate the influence of network structures at the board level on the internationalization strategies of state-owned enterprises (SOEs). Given the complexity of the research objectives, a multifaceted approach, incorporating Social Network Analysis (SNA) and leveraging a combination of secondary data sources, is adopted. This methodology is designed to ensure a rigorous examination of the network characteristics of SOEs and their correlation with internationalization activities.

The first step involves the identification and selection of European SOEs to be included in the study. The selection criteria are based on the enterprises' state ownership status, their engagement in international activities, and their strategic importance within their respective domestic economies. This process aims to assemble a diverse sample that reflects a wide range of industries and geographical contexts within Europe, ensuring the robustness and generalizability of the study's findings.

The links within the network are defined by the board members' connections across different SOEs. These connections are identified through board membership overlaps, where an individual serves on the boards of multiple SOEs, thereby

creating a link between them. This approach to defining links provides insights into the formal network ties that potentially facilitate information exchange, strategic alliances, and other forms of collaboration among SOEs.

With the firms and links identified, the study proceeds to construct the networks using UCINET, a comprehensive software package designed for the analysis of social network data. The construction of these networks allows for the visualization and analysis of the structural properties of the SOEs' board networks, including centrality, density, and diversity of ties.

Using UCINET, several key SNA metrics are calculated to assess the network characteristics of SOEs. These include:

- Centrality Measures: Degree and betweenness centrality are calculated to understand the prominence and influence of individual SOEs within the network.

- Network Density: This metric assesses how interconnected the SOEs are within the network, providing insight into the overall cohesion and potential for resource sharing among them.

- Diversity of Network Ties: The heterogeneity of the SOEs' connections in terms of industry sectors and geographical locations is analyzed to gauge the breadth of their network exposure.

Data for this study is collected from a combination of sources, including Orbis for corporate information, M&A databases for details on international strategic alliances and other forms of international engagement, and additional industry-specific databases for sectoral analysis. This multi-source approach ensures a comprehensive and accurate dataset for analysis.

The study employs a combination of qualitative and quantitative analytical techniques. For quantitative analysis, regression models are used to examine the relationship between network characteristics and SOEs' internationalization measures, such as the number of international alliances, market expansion, and competitive advantage indicators. Qualitative insights are derived from case studies and thematic analysis of strategic reports and public statements, providing depth to the understanding of how network structures influence SOEs' international strategies.

The methodology outlined in this chapter provides a robust framework for exploring the complex relationships between network structures at the board level and the internationalization strategies of SOEs. By employing a comprehensive approach that combines social network analysis with a rich dataset, this study aims to uncover the nuanced mechanisms through which network characteristics can influence SOEs' behavior and performance in the international arena.

Results. Through the application of Social Network Analysis (SNA), this study has illuminated the intricate ways in which network structures at the board level significantly shape the internationalization strategies of state-owned enterprises (SOEs). The preliminary findings reveal that SOEs occupying central positions within their networks are more adept at forming international alliances, joint ventures, and direct investments. This centrality facilitates access to essential resources and information, thus propelling SOEs towards international engagement. Additionally, the study underscores the competitive advantage gained by SOEs within denser networks, where the interconnectedness among enterprises fosters a conducive environment for knowledge and resource sharing, crucial for navigating international markets. Moreover, SOEs with a broad spectrum of network ties across various industries and geographical regions have demonstrated success in penetrating new international markets, attributed to the diverse insights and opportunities these ties provide.

Research limitations. While this study provides valuable insights into the role of network structures at the board level in influencing the internationalization strategies of state-owned enterprises (SOEs), it is important to acknowledge several limitations that may affect the generalizability and interpretation of the findings. These limitations also highlight areas for further research.

The research primarily concentrates on the European context, examining SOEs within a relatively stable and integrated economic and political landscape. While this focus allows for an in-depth understanding of SOEs' internationalization strategies within developed markets, it may limit the applicability of the findings to SOEs operating in vastly different geopolitical and economic environments, such as emerging or less integrated markets. Future research could address this limitation by conducting comparative studies that include SOEs from diverse geographical contexts, thereby enhancing the global applicability of the findings.

The study's emphasis on Social Network Analysis (SNA) and quantitative metrics for analyzing network structures and their impact on SOEs' internationalization might overlook qualitative aspects that are equally critical. These aspects include the nature of interpersonal relationships within networks, the influence of cultural factors on network dynamics, and the strategic decision-making processes of boards. Qualitative studies, employing interviews, case studies, or ethnographic methods, could provide deeper insights into these dimensions, complementing the quantitative findings and offering a more holistic view of SOEs' network structures.

This research captures a specific snapshot of network structures and internationalization activities, potentially overlooking the evolving nature of these elements over time. Networks are dynamic, with relationships and positions within the network likely to change as SOEs adapt their strategies in response to internal and external factors. Longitudinal studies could address this limitation by tracking changes in network structures over time and their impact on SOEs' internationalization strategies, offering insights into the temporal dynamics of networks and strategic adaptation.

The analysis focuses on formal network ties at the board level, potentially underestimating the role of informal networks, such as personal relationships between executives or interactions at lower organizational levels, which can also significantly influence SOEs' internationalization efforts. Future research could broaden the scope of network

analysis to include both formal and informal network ties, providing a more comprehensive understanding of the networking strategies that facilitate international expansion.

Acknowledging these limitations is crucial for situating the study's contributions within the broader field of international business and corporate governance research. By addressing these limitations in future studies, scholars can build on the findings presented here, further enriching our understanding of the complex interplay between network structures and the internationalization strategies of SOEs.

Managerial implications. The findings from this study on the impact of network structures at the board level on the internationalization strategies of state-owned enterprises (SOEs) carry profound implications for managers and policymakers involved in or with SOEs. These implications are crucial for enhancing the strategic positioning and global competitiveness of SOEs. Herein, we elaborate on the managerial implications drawn from the study's insights.

The study highlights the importance of centrality within SOEs' networks, indicating that SOEs with central positions in their network are more likely to engage successfully in international activities. For managers, this underscores the need to strategically cultivate network ties that enhance the organization's centrality. Building and maintaining relationships with key stakeholders, both within and outside the industry, can provide SOEs with access to vital information, resources, and opportunities critical for international expansion. Managers should, therefore, prioritize networking as a strategic tool, actively seeking board members with extensive connections or investing in relationships that bridge the SOE to new markets.

The positive correlation between network density and competitive advantage in international markets suggests that dense networks, where SOEs are interconnected through multiple ties, facilitate knowledge and resource sharing. Managers should leverage this by fostering a culture of collaboration and information exchange within their networks. Participating in industry consortiums, strategic alliances, and joint ventures can be effective ways to enhance network density. Moreover, policies encouraging inter-firm collaboration can lead to a more cohesive and supportive industry environment, bolstering the international competitiveness of all involved SOEs.

The diversity of network ties, encompassing a wide range of industries and geographic regions, has been shown to significantly contribute to the success of SOEs in international markets. Managers should, therefore, seek to diversify their networks deliberately. This could involve pursuing board members with international experience or forming strategic partnerships with firms in different sectors or countries. Such diversity not only broadens the SOE's perspective and access to different markets but also equips it with varied resources and knowledge bases to navigate the complexities of global expansion.

For policymakers, the study's findings emphasize the role of government in facilitating the internationalization of SOEs through network structures. Policies that encourage cross-border partnerships, international board appointments, and participation in international business consortia can significantly enhance the global reach of SOEs. Governmental support mechanisms, such as facilitating access to international networks through diplomatic channels or trade missions, can also play a crucial role. Furthermore, policymakers should consider the regulatory environment and its impact on SOEs' ability to form and maintain diverse and dense networks.

The managerial implications of this study provide a roadmap for SOEs and their stakeholders to harness the power of network structures for international success. By strategically cultivating centrality, leveraging network density, and exploiting the diversity of network ties, SOEs can significantly enhance their internationalization strategies. Additionally, supportive policies and government actions can amplify these effects, contributing to the global competitiveness and success of SOEs. The insights offered by this study not only contribute to the strategic management literature but also offer practical guidance for managers and policymakers aiming to navigate the complex terrain of international business..

Originality of the paper. The research presented in this paper brings a fresh perspective to the study of state-owned enterprises (SOEs) and their internationalization strategies, contributing original insights to the academic discourse and providing a nuanced understanding of the role of network structures at the board level. The originality of this paper is manifest in several key aspects:

This study breaks new ground by examining the impact of network structures on the internationalization strategies of SOEs, a topic that has received limited attention in existing literature. By focusing on the centrality, density, and diversity of ties within SOEs' board networks, the research sheds light on how these social structures influence SOEs' ability to engage in international markets. This novel focus not only fills a significant gap in the field of international business but also adds to our understanding of the complex dynamics that underpin the global operations of SOEs.

The paper distinguishes itself by centering its analysis on SOEs within the European context, a geographical focus that has been somewhat neglected in favor of studies on emerging markets. This emphasis provides valuable insights into the internationalization processes of SOEs in a developed market environment, highlighting unique challenges and opportunities that arise from Europe's distinct economic, political, and institutional landscape. The European focus enriches the discourse on SOEs by offering a comparative lens through which to view the internationalization strategies of state-owned entities across different global contexts.

Employing Social Network Analysis (SNA) to explore the relationship between network characteristics and the internationalization strategies of SOEs represents a methodological advancement in the field. This approach allows for a detailed examination of the structural properties of networks and their impact on organizational outcomes. By utilizing SNA, the paper introduces a novel methodological framework that enhances the analytical rigor with which the

international activities of SOEs can be studied, offering a model that can be replicated and expanded upon in future research.

Beyond its academic contributions, the originality of this paper also lies in its practical and policy implications. The findings offer actionable insights for managers of SOEs and policymakers, highlighting the strategic importance of cultivating diverse and central network positions to enhance internationalization efforts. By outlining the benefits of dense network structures for knowledge sharing and collaboration, the paper provides a blueprint for SOEs aiming to increase their competitiveness in the global arena. For policymakers, the research underscores the role of network-enhancing policies in facilitating the international expansion of SOEs, suggesting areas for regulatory reform and international cooperation.

Lastly, this paper contributes to ongoing theoretical debates regarding the advantages and challenges of stateness in the context of international business. By integrating insights from corporate governance, international business theory, and social network analysis, the study offers a comprehensive theoretical framework that elucidates the multifaceted influences of state ownership on SOE internationalization. This contribution not only advances theoretical understanding but also invites further scholarly inquiry into the intersecting domains of state ownership, network theory, and international strategy.

In sum, the originality of this paper is evident in its novel focus, geographical emphasis, methodological innovation, practical implications, and theoretical contributions. It paves the way for future research in the field of international business and offers valuable guidance for the strategic management and governance of SOEs in the global marketplace.

References

- AHARONI Y. (1980), "The state owned enterprise as a competitor in international markets", *The Columbia Journal of World Business*, vol. 15, n. 1, pp. 14-22.
- AWATE S., LARSEN M.M., MUDAMBI R. (2012), "EMNE catch-up strategies in the wind turbine industry: Is there a trade-off between output and innovation capabilities?", *Global Strategy Journal*, vol. 2, n. 3, pp. 205-223.
- BASS A., CHAKRABARTY S. (2014), "Resource security: Competition for global resources, strategic intent, and governments as owners", *Journal of International Business Studies*, vol. 45, n. 8, pp. 961-979.
- BENITO G.R., RYGH A., LUNNAN R. (2016), "The benefits of internationalization for state-owned enterprises", *Global Strategy Journal*, vol. 6, n. 4, pp. 269-288.
- BRUTON G.D., PENG M.W., AHLSTROM D., CIPRIAN S., XU K. (2015), "State-owned enterprises around the world as hybrid organizations", *Academy of Management Perspectives*, vol. 29, n. 1, pp. 92-114.
- BUCKLEY P.J., CROSS A.R., TAN H., XIN L., VOSS H. (2008), "Historic and emergent trends in Chinese outward direct investment", *Management International Review*, vol. 48, n. 6, pp. 715-748.
- CHEN V.Z., MUSACCHIO A., LI S. (2019), "A Principals-Principals Perspective of Hybrid Leviathans: Cross-Border Acquisitions by State-Owned MNEs", *Journal of Management*, vol. 45, n. 7, pp. 2751-2778.
- CUERVO-CAZURRA A. (2018), "Thanks but no thanks: State-owned multinationals from emerging markets and host-country policies", *Journal of International Business Policy*, vol. 1, n. 3-4, pp. 128-156.
- CUERVO-CAZURRA A., LI C. (2021), "State ownership and internationalization: The advantage and disadvantage of stateness", *Journal of World Business*, vol. 56, n. 1, pp. 101112.
- CUERVO-CAZURRA A., GROSMAN A., MEGGINSON W.L. (2023), "A review of the internationalization of state-owned firms and sovereign wealth funds: Governments' nonbusiness objectives and discreet power", *Journal of International Business Studies*, vol. 54, n. 1, pp. 78-106.
- DENG Z., YAN J., VAN ESSEN M. (2018), "Heterogeneity of political connections and outward foreign direct investment", *International Business Review*, vol. 27, n. 4, pp. 893-903.
- ESTRIN S., MEYER K.E., NIELSEN B., NIELSEN S. (2016), "Home country institutions and the internationalization of state owned enterprises: A cross-country analysis", *Journal of World Business*, vol. 51, n. 2, pp. 294-307.
- GRØGAARD B., RYGH A., BENITO G. R. (2019), "Bringing corporate governance into internalization theory: State ownership and foreign entry strategies", *Journal of International Business Studies*, vol. 50, n. 8, pp. 1310-1337.
- GROSMAN A., OKHMATOVSKIY I., WRIGHT M. (2016), "State control and corporate governance in transition economies: 25 Years on from 1989", *Corporate Governance: An International Review*, vol. 24, n. 3, pp. 200-221.
- GUO C., LV P. (2018), "Network position of independent director in cross-border mergers and acquisitions", *International Journal of Emerging Markets*, vol. 13, n. 1, pp. 118-135.
- HENNART J.F., SHENG H.H., CARRERA J.M. (2017), "Openness, international champions, and the internationalization of Multilatinas", *Journal of World Business*, vol. 52, n. 4, pp. 518-532.
- HU H.W., CUI L. (2014), "Outward foreign direct investment of publicly listed firms from China: A corporate governance perspective", *International Business Review*, vol. 23, n. 4, pp. 750-760.
- IMF (2020), "Fiscal monitor, April 2020: Policies to support people during the Covid-19 pandemic: <https://www.imf.org/en/Publications/FM/Issues/2020/04/17/Fiscal-Monitor-April-2020-Policies-to-Support-People-During-the-COVID-19-Pandemic-49278>
- INOUE C.F., LAZZARINI S. G., MUSACCHIO A. (2013), "Leviathan as a minority shareholder: Firm- level implications of state equity purchases", *Academy of Management Journal*, vol. 56, n. 6, pp. 1775-1801.
- LIANG H., REN B., SUN S.L. (2015), "An anatomy of state control in the globalization of state- owned enterprises", *Journal of International Business Studies*, vol. 46, n. 2, pp. 223-240.
- MARIOTTI S., MARZANO R. (2019), "Varieties of capitalism and the internationalization of state- owned enterprises", *Journal of International Business Studies*, vol. 50, n. 5, pp. 669-691.

- MEYER K.E., DING Y., LI J., ZHANG H. (2014), "Overcoming distrust: How state-owned enterprises adapt their foreign entries to institutional pressures abroad", *Journal of International Business Studies*, vol. 45, n. 8, pp. 1005-1028.
- MUSACCHIO A., LAZZARINI S.G. (2014), "Reinventing state capitalism. Boston, MA: Harvard University Press.
- OECD (2023), "OECD Forum Network: <https://www.oecd-forum.org/posts/an-increasing-role-of-state-owned-enterprises-in-the-global-economy-calls-for-better-governance>."
- PAN Y., TENG L., SUPAPOL A.B., LU X., HUANG D., WANG Z. (2014), "Firms' FDI ownership: The influence of government ownership and legislative connections", *Journal of International Business Studies*, vol. 45, n. 8, pp. 1029-1043.
- SHI, W., SUN S. L., PENG M. W. (2012), "Sub-national institutional contingencies, network positions, and IJV partner selection", *Journal of Management Studies*, vol. 49, n. 7, pp. 1221-1245.
- SHIJAKU E., LARRAZA-KINTANA M., URTASUN-ALONSO A. (2020), "Network centrality and organizational aspirations: A behavioral interaction in the context of international strategic alliances", *Journal of International Business Studies*, vol. 51, pp. 813-828.
- TICHY N. M., TUSHMAN M. L., FOMBRUN C. (1979), "Social network analysis for organizations", *Academy of Management Review*, vol. 4, n. 4, pp. 507-519.
- TIHANYI L., AGUILERA R.V., HEUGENS P., VAN ESSEN M., SAUERWALD S., DURAN P. (2019), "State ownership and political connections", *Journal of Management*, vol. 45, n. 6, pp. 2293-2321.
- VERNON R. (1979), "The international aspects of state-owned enterprises", *Journal of International Business Studies*, vol. 10, n. 3, pp. 7-14.
- WASSERMAN S., FAUST K. (1994), *Social Network Analysis: Methods and Applications*. Cambridge University Press.
- WU J., CHEN X. (2014), "Home country institutional environments and foreign expansion of emerging market firms", *International Business Review*, vol. 23, n. 5, pp. 862-872.
- WU J., WOOD G., KHAN Z. (2021), "Top management team's formal network and international expansion of Chinese firms: The moderating role of state ownership and political ties", *International Business Review*, vol. 30, n. 3, pp. 101803.
- ZHANG J., ZHOU C., EBBERS H. (2011), "Completion of Chinese overseas acquisitions: Institutional perspectives and evidence", *International Business Review*, vol. 20, n. 2, pp. 226-238.

La strategia ‘Grab and Go’: Intuizioni teoriche preliminari e possibili implicazioni

MARTINA CASTRONOVO¹ ANNA MINA² PAQUALE MASSIMO PICONE³

Abstract

Sempre più frequentemente, i manager sono chiamati a valutare le strategie di internazionalizzazione da far intraprendere alle loro imprese. Tradizionalmente, le barriere all'ingresso poste in essere dai big player e le distanze esistenti tra mercati domestici e internazionali hanno calmierato l'interesse di espansione geografica. Sebbene queste considerazioni siano ancora valide perché viviamo in un contesto di semi-globalizzazione, le progressive integrazioni tra le economie hanno alimentato l'orientamento delle imprese a valutare con maggiore attenzione le opzioni di espansione. Tuttavia, i potenziali benefici legati all'internazionalizzazione devono essere confrontati con i rischi, le conseguenze e le criticità gestionali di porre in essere investimenti significativi per sostenere l'ingresso in mercati distanti. In questo lavoro - ancora in fieri - noi proponiamo uno schema teorico-interpretativo che consenta di comprendere se e in che modo le alleanze strategiche rappresentano un “cavallo di Troia” e, dunque, supportano la scelta di un'impresa - denominata docking firm - che, tramite l'alleanza stessa, intende penetrare il mercato internazionale. Per avanzare tale argomentazione, questo studio ricorre alla teoria delle opzioni reali. In definitiva, la ricerca concettualizza la strategia grab and go e prova a identificare- almeno concettualmente -una linea di demarcazione tra la cooperazione pura e il camouflage cooperativo.

Parole chiave: alleanze strategiche, coopetition, mercati internazionali, ‘grab and go’, opzioni reali

Inquadramento della ricerca. Le alleanze strategiche rappresentano un tema fondamentale e frequente, sia nell'ambito della pratica manageriale, sia negli studi di strategia d'impresa, in generale, e di International Business (IB), in particolare. Nel corso del tempo, diversi studi hanno, infatti, esplorato il tema delle alleanze alla luce di diverse e complementari prospettive quali, ad esempio, la Teoria dei Costi di Transazione (Aubert et al., 1996; Hennart, 1988; Kogut, 1988; Williamson, 1989), la Teoria basata sulle Risorse (Andersen & Kheam, 1998, Das & Teng, 2000, 2003; Peng, 2001) e la Teoria Istituzionalista (Dacin, Oliver & Roy, 2007).

L'interesse allo studio delle alleanze in IB - che si manifesta in un'ampia, continua e copiosa ricerca (Morschett, Schramm-Klein & Swoboda, 2010; Oliveira, Lumineau & Ariño, 2023; Schellenberg, Harker & Jafari, 2018; Zahoor, Khan, & Shenkar, 2023) - muove dalla considerazione che le alleanze costituiscono un'alternativa strategica per le imprese che valutano l'ingresso in nuovi mercati (Brouthers & Hennart, 2007; Dyer et al., 2018), nonché un importante antecedente alla formazione delle stesse. Un fil rouge lungo tutta la letteratura esistente è che le alleanze consentono alle imprese di avere accesso, ma anche combinare (e ricombinare) risorse e capacità complementari. Se considerate come modalità di ingresso in un mercato internazionale, si suole osservare che le alleanze consentono alle imprese l'accesso a nuovi mercati e il superamento di distanze, siano esse reali e/o percepite, di natura culturale, amministrativa, geografica ed economica (Chen & Hennart, 2002). Allo stesso tempo, tuttavia, le alleanze sottendono delle criticità gestionali e dei rischi connessi, ad esempio, al mancato allineamento culturale e/o strategico tra i partner, che può condurre all'emergere di comportamenti opportunistici (Parkhe, 1993).

Dal momento che «le alleanze non sono molto stabili per natura» (trad. ns, Rajan & Dhir, 2020, p. 352), il numero crescente di imprese che ricorrono alle alleanze - anche tra rivali (Hamel, 1991; Hamel, Doz & Prahalad, 1989; Lado Boyd & Hanlon, 1997; Parkhe, 1993) -, unitamente al crescente numero di alleanze che falliscono ha, di fatto, dischiuso la necessità di indagare sulle ragioni sottese al perché alcune alleanze prosperano, rispetto ad altre che terminano anche prima della loro durata pianificata (Sadowski & Duysters, 2008; Reuer & Zollo, 2005). Se questo è valido per le alleanze, in generale, è ancor più vero per le alleanze in IB (McCutchen. & Swamidass, 2008; Serapio & Cascio, 1996). Ne segue che, parallelamente alla ricerca sui driver sottesi alla formazione delle alleanze, gli studiosi hanno anche indagato gli elementi che ne determinano la dissoluzione.

¹ Università LUMSA
e-mail: m.castronovo1.dottorati@lumsa.it

² Università LUMSA
e-mail: a.mina1@lumsa.it

³ Università di Palermo
e-mail: pasqualemassimo.picone@unipa.it

Se le risorse e le capacità in dotazione dei partner di un'alleanza sono elementi imprescindibili e le complementarità delle risorse spiegano i processi di creazione di valore delle alleanze in mercati internazionali, ma anche la loro eventuale dissoluzione (Dyer et al., 2018), la dissoluzione delle alleanze è dunque da ricondurre alla differenza tra il valore creato dall'alleanza e le aspettative dei partner (Min, 2017). In altre parole, anche nel contesto di IB, la dissoluzione delle alleanze risente delle aspettative dei partner dell'alleanza che ricorrono sin dalla fase di formazione della stessa, definendone, sia le caratteristiche della alleanza, sia il modo in cui i partner sono strategicamente coinvolti nella relazione e, a sua volta, l'evoluzione dell'alleanza stessa. In nuce, riconosciamo che le aspettative sottese alla formazione delle alleanze richiedono ulteriore indagine. Questo lavoro si inserisce in tale dibattito muovendosi dalla letteratura di IB e adottando la prospettiva delle opzioni reali.

Sovente, la decisione di entrare in un mercato estero induce l'impresa a optare tra le tre principali modalità: esportazioni dirette; investimento diretto in un paese straniero (FDI) e; partnership con altre imprese tramite contratti di distribuzione. Diversi lavori hanno adottato la Teoria dei Costi di Transazione ed indagato in che modo l'incertezza ambientale, di settore e di paese, e la specificità delle risorse condizionano le decisioni di ingresso nei mercati internazionali (Anderson & Gatignon, 1986; Gatignon & Anderson, 1988; Gomes-Casseres, 1989; Hennart 1988, 1989, 1991). Altri lavori, emersi a partire dai primi anni del 2000, hanno adottato il modello OLI (Ownership, Location, Internalization) quale quadro teorico e riconosciuto i vantaggi di proprietà e posizione sottese alle scelte di ingresso (Bradley & Gannon, 2000; Brouthers, Brouthers & Werner, 1996; Pinho, 2007; Shrader, Oviatt & McDougall, 2000). Secondo la Teoria delle Risorse, il trasferimento di risorse chiave e complementari consente alle imprese di migliorare il vantaggio competitivo (Barney, 1991). Secondo la teoria Istituzionalista, la formazione di alleanze è rintracciabile nelle disposizioni proprie del contesto istituzionale del paese ospitante (Shellenberg et al., 2018). In estrema sintesi, la letteratura di IB riconosce che, in presenza di incertezza, le imprese preferiscono entrare in nuovi mercati sostenendo livelli inizialmente bassi di investimento che aumentano nel tempo, e la scelta dei tipi di alleanza strategica (licenze, franchising, joint venture, e così via) dipende dalle esigenze dei partner coinvolti e dal contesto in cui operano.

Muovendoci dalla letteratura di IB, in generale, e dal ruolo dell'incertezza per la scelta sulle modalità di ingresso nei mercati internazionali, in specie, (Chi, Li, Trigeorgis & Tsekrekos, 2019; Reuer e Ragozzino, 2014; Trigeorgis & Reuer, 2017; Santoro & McGill, 2005) riteniamo che la teoria delle opzioni reali si presti particolarmente a interpretare il fenomeno. Il ragionamento sulle opzioni reali ci consente di comprendere come le imprese gestiscono le loro alleanze in presenza di asimmetrie informative e di risorse e con conoscenze relativamente limitate sulle dinamiche di mercato in essere (Kogut & Kulatilaka, 2004). Più specificamente, secondo la teoria delle opzioni reali, le alleanze strategiche conferiscono all'impresa entrante una maggiore flessibilità per affrontare elevati livelli di incertezza. Il ragionamento supportato dalla teoria delle opzioni reali mette in luce che se le imprese competono in condizioni di particolare incertezza, possono effettuare piccoli investimenti con la possibilità di consolidarli, espanderli o abbandonarli a seguito. In altre parole, i piccoli investimenti agiscono come un'opzione call che un'impresa può detenere fino alla sua scadenza o esercitare quando si verificano circostanze esterne vantaggiose (Cuypers & Martin, 2007). Le imprese eserciteranno la loro opzione call quando il valore dell'attività sottostante supera il prezzo di esercizio (Cuypers & Martin, 2007).

Obiettivo del paper. La ricerca - ancora in fieri - accoglie la sfida di concettualizzare una situazione ideal-tipo in cui la conclusione delle alleanze dipende dalla strategia che l'impresa entrante definisce nella fase di formazione. In particolare, il presente lavoro si propone di far leva sul ragionamento alla base delle opzioni reali per tracciare una forma specifica di alleanza strategica in IB. Vedendo le alleanze strategiche come una option call, riconosciamo che l'opzione di partecipare all'alleanza può essere rivalutata e modificata nel tempo. Questo approccio porta a diversi percorsi di azione che l'impresa può seguire nel futuro e concettualizza il camouflage cooperativo che le alleanze possono assumere. Quindi, teorizziamo una strategia "grab-and-go" che informa su un possibile percorso nella fase post-formazione delle alleanze strategiche.

Seguendo il ragionamento sotteso alle opzioni reali, si interpretano le alleanze strategiche come opzioni call che permettono di differire la scelta di integrazione verticale o orizzontale. Questo passaggio si evidenzia in seno alla definizione dell'accordo, che permette di comprendere se l'alleanza sottende una semplice cooperazione o è una forma di camouflage.

Metodologia. La ricerca si trova ancora in una fase embrionale di natura teorico-concettuale. Tale fase sostanzialmente speculativa si basa sull'interpretazione -ancora in corso - delle alleanze alla luce della teoria delle opzioni reali. In questo lavoro offriamo una concettualizzazione della strategia grab-and-go quale strategia che consente all'impresa entrante di raccogliere rapidamente risorse e conoscenze necessarie e prendere una decisione informata riguardo l'ingresso in nuovi mercati geografici. Nello specifico, si identificano due fasi: la fase "grab", che muove dalla cooperazione per acquisire le conoscenze e le risorse, l'accesso al mercato e ai fornitori e; la fase "go", dove l'impresa muove dalle conoscenze fino a quel momento acquisite per definire il corso di azione più appropriato. Attraverso la separazione dei due momenti è possibile mettere in luce il passaggio che intercorre tra la fase di "cooperazione visibile" e la fase di competizione. La cooperazione assume la sua "forma visibile" durante la fase grab per poi evolversi verso una forma di interplay di cooperazione e competizione e, dunque, avviare la fase di sostanziale rivalità. Tale forma di cooperazione visibile può assumere la doppia forma di "pure cooperazione" oppure già da subito di camouflage. In quest'ultimo caso emerge direttamente un interplay di cooperazione e competizione dove la competizione è camuffata (filosoficamente, questa forma richiama la matrice Confuciana di cooptation così come concettualizzata da Minà e Dagnino, 2021; Dagnino e Minà, 2021). Di fatti, nella fase go il partner che entra nel mercato rappresenta un potenziale rivale.

La strategia grab-and-go caratterizza la valutazione delle decisioni di ingresso e delle relazioni con i partner riguardanti le opzioni to defer or stage. In particolare, l'alleanza è vista come una relazione temporanea e altamente indirizzata a rinviare la decisione di integrazione e facilitare un processo di ingresso graduale per superare le barriere d'ingresso e impedire reazioni dei rivali già presenti nel mercato.

La concettualizzazione proposta può essere d'uopo per approfondire le seguenti fasi. La prima fase è quella di Grab. Questa è la fase di coinvolgimento in cui l'impresa entrante (denominata docking firm) inizia una relazione apparentemente cooperativa con una impresa (denominata docked firm) nel mercato di destinazione. Questa cooperazione funge da opzione call e consente alla docking firm di acquisire le conoscenze e le risorse necessarie per valutare le varie incertezze legate alla penetrazione in un nuovo mercato. L'obiettivo è raccogliere informazioni sul mercato target (dinamiche competitive, preferenze dei clienti, fattori regolatori e altre informazioni rilevanti). Sfruttando la relazione con la docked firm, l'impresa entrante ottiene accesso alle conoscenze e alla rete del partner. Ciò renderà, ad esempio, più facile una rapida ed efficiente raccolta di informazioni sul nuovo mercato. Questa fase è caratterizzata dal trasferimento di conoscenze, dalle attività congiunte e dalla collaborazione per costruire una solida comprensione del mercato estero. In questa fase, l'impresa assume un comportamento di cooperazione visibile dove la rivalità rimane potenziale, e la sua evoluzione dipende dai cambiamenti e dagli sviluppi nel mercato.

La seconda fase è la fase Go: se sono stati registrati effetti positivi durante la fase di grab, l'impresa può decidere di esercitare l'opzione in modo espansivo, dando origine a processi di integrazione verticale (configurandosi come option to alter scale) o di integrazione orizzontale (configurandosi come option to grow). Al contrario, se le variazioni registrate non sono allineate alle aspettative e stanno diminuendo, l'impresa può scegliere di non esercitare l'opzione (se la relazione cooperativa non ha iniziato ad assumere una prospettiva cooperativa) o piuttosto esercitare l'opzione di uscita, terminando la relazione.

Implicazioni pratiche. La principale implicazione del nostro studio riguarda la selezione del partner. L'alleanza rappresenta uno strumento per prendere decisioni non estremamente vincolanti per il futuro, consentendo all'impresa entrante di esercitare l'opzione in seguito. Chiamando l'attenzione sul rischio di una strategia grab-and-go, riconosciamo l'importanza dei segnali lungo l'alleanza. Se la docked firm riuscisse a cogliere le vere intenzioni prima che la docking firm possa esercitare l'opzione, potrebbe mettere in atto una serie di azioni che anticipino la durata della fase go, riducendo le probabilità di esercitare l'opzione. Tuttavia, noi riconosciamo la complessità di identificare i segnali trasmessi in modo indiretto dall'impresa docking e determinare la scadenza anticipata dell'opzione con conseguente effetto rebound.

Originalità del paper. La ricerca, ancora in corso, mira ad offrire la concettualizzazione della strategia grab-and-go alla luce della prospettiva teorica delle opzioni reali e, successivamente, proporre delle analisi empiriche (di tipo qualitativo-longitudinale). La ricerca affronta gli argomenti proposti da Min (2017) secondo cui la fine delle alleanze può essere attribuita alla differenza tra il valore creato da un'alleanza stessa e le aspettative dei partner. Concettualizziamo questa strategia in due fasi. Nella fase di grab, l'impresa focale decide di strutturare la cooperazione per acquisire conoscenze sul nuovo mercato geografico e le risorse necessarie per competere in tale mercato. Nella seconda fase - la fase go - l'impresa può decidere di entrare nel mercato attraverso flussi di integrazione verticale o orizzontale diretta, proporre un'operazione di business combination o uscire. In questo modo, contribuiamo alla letteratura esistente in due modi. In primo luogo, concettualizziamo il camouflage cooperativo che l'alleanza strategica può assumere. Sosteniamo che il momento della selezione del partner sia cruciale per attivare il processo e parlare della strategia grab and go. L'idea è che le imprese cercano di allearsi sfruttando una tattica di camuffamento, ovvero di aprire un'opzione strategica. Quindi, studi successivi alla luce della teoria delle opzioni reali potranno consentirci di identificare taluni criteri di partner selection che si rivelano cruciali per avviare tale processo strategico. Questa riflessione ha anche implicazioni per la struttura dell'alleanza. In particolare, nonostante non richieda investimenti significativi, le docking firm saranno inclini a strutturare un'alleanza strategica attraente per le docked firm. Questo tipo di alleanza non segue criteri altamente definiti, ma è la migliore forma che consente di avvicinarsi al partner rispetto agli obiettivi finali di ingresso e soprattutto di camuffamento. Questa ricerca potrà contribuire a identificare il ciclo di vita delle alleanze strategiche in cui la cooperazione iniziale è solo una fase transitoria o, di fatto, uno step di camuffamento. Da un punto di vista teorico questo significa rappresentare le alleanze strategiche come trampolino di lancio per la competizione in tempi successivi.

Bibliografia

- ANDERSEN O., KHEAM L.S. (1998), "Resource-based theory and international growth strategies: an exploratory study", *International Business Review*, vol. 7, n. 2, pp. 163-184.
- ANDERSON E., GATIGNON H. (1986), "Modes of foreign entry: a transaction cost analysis and propositions", *Journal of International Business Studies*, vol. 1, n. 3, pp. 1-26.
- AUBERT B.B., RIVARD S., PATRY, M. (1996), "A transaction cost approach to outsourcing behavior; some empirical evidence", *Information and Management*, vol. 30, pp. 51-64.
- BARNEY J. (1991), "Firm resources and sustained competitive advantage", *Journal of Management*, vol. 17, n. 1, pp. 99-120.
- BRADLEY F., GANNON M. (2000), "Does the firm's technology and marketing profile affect foreign market entry?", *Journal of International Marketing*, vol. 8, n. 4, pp. 12-36.

- BROUHERS K.D., HENNART J.F. (2007), "Boundaries of the firm: Insights from international entry mode research", *Journal of Management*, vol. 33, n. 3, pp. 395-425.
- BROUHERS K.D., BROUHERS L.E., WERNER S. (1996), "Dunning's eclectic theory and the smaller firm: The impact of ownership and locational advantages on the choice of entry-modes in the computer software industry", *International Business Review*, vol. 5, n. 4, pp. 377-394.
- CHEN S.F.S., HENNART J.F. (2002), "Japanese investors' choice of joint ventures versus wholly-owned subsidiaries in the US: The role of market barriers and firm capabilities", *Journal of International Business Studies*, vol. 33, pp. 1-18.
- CHI T., LI J., TRIGEORGIS L.G., TSEKREKOS A.E. (2019), "Real options theory in international business", *Journal of International Business Studies*, vol. 50, pp. 525-553.
- CUYPERS I.R., MARTIN X. (2007), "Joint ventures and real options: An integrated perspective", *Real Options Theory*, (Eds), Emerald Group Publishing Limited, pp. 103-144.
- DACIN M.T., OLIVER C., ROY J. (2007), "The legitimacy of strategic alliances: An institutional perspective", *Strategic Management Journal*, vol. 28, pp. 169-187.
- DAGNINO G.B., MINÀ A. (2021), "Unraveling the philosophical foundations of co-opetition strategy", *Management and Organization Review*, vol. 17, n. 3, pp. 490-523.
- DAS T.K., TENG B.S. (2000), "A resource-based theory of strategic alliances", *Journal of Management*, vol. 26, n. 1, pp. 31-61.
- DAS T.K., TENG B.S. (2003), "Partner analysis and alliance performance", *Scandinavian Journal of Management*, vol. 19, n. 3, pp. 279-308.
- DYER J., GODFREY P., JENSEN R., BRYCE D., PASTORE A. (2018), *Strategic Management. Principi e Applicazioni*, Milano: ISEDI.
- GATIGNON H., ANDERSON E. (1988), "The multinational corporation's degree of control over foreign subsidiaries: An empirical test of a transaction cost explanation", *Journal of Law, Economics, and Organization*, vol. 4, n. 2, pp. 305-336.
- GOMES-CASSERES B. (1989), "Joint ventures in the face of global competition", *Sloan Management Review*, vol. 30, n. 3, pp. 17-26.
- HAMEL G. (1991), "Competition for competence and interpartner learning within international strategic alliances", *Strategic Management Journal*, vol. 12, n. S1, pp. 83-103.
- HAMEL G., DOZ Y.L., PRAHALAD C.K. (1989), "Collaborate with your competitors and win", *Harvard Business Review*, vol. 67, n. 1, pp. 133-139.
- HENNART J.F. (1988), "A transaction cost theory of equity joint ventures", *Strategic Management Journal*, vol. 9, n. 4, pp. 361-373.
- HENNART J.F. (1989), "Can the 'new forms of investment' substitute for the 'old forms?' A transaction costs perspective", *Journal of International Business Studies*, vol. 20, pp. 211-234.
- HENNART J.F. (1991), "The transaction costs theory of joint ventures: An empirical study of Japanese subsidiaries in the United States", *Management Science*, vol. 37, n. 4, pp. 483-497.
- KOGUT B. (1988), "Joint ventures: the theoretical and empirical perspectives", *Strategic Management Journal*, vol. 9, n. 4, pp. 319-332.
- KOGUT B., KULATILAKA N. (2004), "Real options pricing and organizations: The contingent risks of extended theoretical domains", *Academy of Management Review*, vol. 29, n. 1, pp. 102-110.
- LADO A.A., BOYD N.G., HANLON S.C. (1997), "Competition, cooperation, and the search for economic rents: A syncretic model", *Academy of Management Review*, vol. 22, n. 1, pp. 110-141.
- MCCUTCHEN JR W.W., SWAMIDASS P.M., TENG B.S. (2008), "Strategic alliance termination and performance: The role of task complexity, nationality, and experience", *Journal of High Technology Management Research*, vol.18, n.2, pp. 191-202.
- MIN J. (2017), "Sensitivity of alliance termination to prealliance conditions: Expectation effects of alliance partners", *Organization Studies*, vol. 38, n. 7, pp. 917-936.
- MINÀ A., DAGNINO G.B. (2021), *Foundations of Coopetition Strategy: A Framework for Competition and Cooperation*. Routledge-Giappichelli.
- MORSCHETT D., SCHRAMM-KLEIN H., MCCUTCHEN JR W. W., SWAMIDASS P. M., TENG B. S. (2008), "Strategic alliance termination and performance: The role of task complexity, nationality, and experience", *Journal of High Technology Management Research*, vol. 18, n. 2, 191-202.
- OLIVEIRA N., LUMINEAU F., ARIÑO A. (2023), "Time in international strategic alliances: Progress and prospect", *Journal of World Business*, vol.58, n.4, 101456.
- PARKHE A. (1993), "Partner nationality and the structure-performance relationship in strategic alliances", *Organization Science*, vol. 4, n. 2, pp. 301-324.
- PENG M.W. (2001), "The resource-based view and international business", *Journal of Management*, vol. 27, pp. 803-829.
- PINHO J.C. (2007), "The Impact of Ownership: Location-Specific Advantages and Managerial Characteristics on SME Foreign Entry Mode Choices", *International Marketing Review*, vol. 24, n. 6, pp. 715-734.
- RAJAN R., DHIR S. (2020), "Alliance termination research: a bibliometric review and research agenda", *Journal of Strategy and Management*, vol. 13, n. 3, pp. 351-375.
- REUER J.J., RAGOZZINO R. (2014), "Signals and international alliance formation: The roles of affiliations and international activities", *Journal of International Business Studies*, vol. 45, pp. 321-337.
- REUER J.J., ZOLLO M. (2005), "Termination outcomes of research alliances", *Research Policy*, vol. 34, n. 1, pp. 101-115.
- SADOWSKI B., DUYSTERS G. (2008), "Strategic technology alliance termination: An empirical investigation", *Journal of Engineering and Technology Management*, vol. 25, n. 4, pp. 305-320.
- SANTORO M.D., MCGILL J.P. (2005), "The effect of uncertainty and asset co-specialization on governance in biotechnology alliances", *Strategic Management Journal*, vol. 26, n. 13, pp.1261-1269.
- SCHELLENBERG M., HARKER M.J., JAFARI A. (2018), "International market entry mode-a systematic literature review", *Journal of Strategic Marketing*, vol. 26, n. 7, pp. 601-627.
- SERAPIO JR M.G., CASCIO W.F. (1996), "End-games in international alliances", *Academy of Management Perspectives*, vol. 10 n.1, pp. 62-73.

- SHRADER R.C., OVIATT B.M., McDOUGALL P.P. (2000), "How new ventures exploit trade-offs among international risk factors: Lessons for the accelerated internationalization of the 21st century", *Academy of Management Journal*, vol. 43, n. 6, pp. 1227-1247.
- SWOBODA B. (2010), "Decades of research on market entry modes: What do we really know about external antecedents of entry mode choice?", *Journal of International Management*, vol.16, n.1, 60-77.
- TRIGEORGIS L., REUER J.J. (2017), "Real options theory in strategic management", *Strategic Management Journal*, vol. 38, n. 1, pp. 42-63.
- WILLIAMSON O.E. (1985), *The Economic Institutions of Capitalism*, Basic Book, New York.
- WILLIAMSON O.E. (1989), "Transaction cost economics", *Handbook of Industrial Organization*, vol. 1, pp. 135-182.
- ZAHOOOR N., KHAN Z., SHENKAR O. (2023), "International vertical alliances within the international business field: A systematic literature review and future research agenda", *Journal of World Business*, vol. 58, n.1, 101385.

L'imprenditorialità femminile migrante nei business familiari

GIULIO PALMAS¹ MICHELA FLORIS²

Abstract

L'imprenditorialità femminile migrante costituisce un'area di studio dinamica e in costante evoluzione, distinguendosi per le sue peculiarità legate a contesti personali, strutturali e socioculturali. Gli studi evidenziano che questo tipo di imprenditoria è profondamente radicata in una struttura sociale e culturale, sostenuta da reti familiari ed etniche essenziali per l'avviamento e la gestione dell'attività. Nonostante l'aumento dell'interesse accademico, l'imprenditoria femminile migrante, in particolare nelle aziende familiari, rimane un'area ancora parzialmente esplorata. Utilizzando la lente teorica dell'embeddedness multipla, questo studio intende esplorare le complesse dinamiche che caratterizzano le imprese gestite da donne migranti, con un focus specifico sulle interazioni tra i fattori contestuali, familiari e individuali che contribuiscono al successo. Attraverso l'analisi approfondita delle esperienze di dieci imprenditrici migranti, il presente studio mira a delineare i fattori che sostengono o ostacolano i percorsi imprenditoriali, mettendo in luce l'importanza del contesto socio-economico e culturale, nonché delle reti di supporto familiare ed etnico, e del capitale umano individuale. L'aspetto innovativo di questa ricerca consiste nello studio dell'interconnessione tra questi elementi, evidenziando come la resilienza individuale e il sostegno etnico-familiare hanno facilitato l'adattamento a contesti imprenditoriali ostili. I risultati di questo studio mettono in luce una varietà di esperienze eterogenee, enfatizzando l'urgenza di adottare approcci più integrati e personalizzati nei programmi di supporto alle imprenditrici migranti. Questo studio non solo contribuisce al dibattito sull'imprenditorialità migrante ma fornisce spunti importanti per responsabili politici e attori del supporto imprenditoriale, sottolineando la necessità di migliorare l'accesso a risorse, formazione e reti di supporto. Infine, si evidenzia la necessità di ulteriori studi per esplorare la varietà di percorsi imprenditoriali migranti, al fine di promuovere un ecosistema più inclusivo e sostenibile.

Key words: *imprenditorialità femminile migrante; reti familiari ed etniche; aziende familiari; Embeddedness multipla; dinamiche imprenditoriali; sostenibilità aziendale*

Framing of the research. *L'importanza di esaminare l'imprenditorialità femminile migrante risiede nella sua correlazione con gli obiettivi fondamentali dell'Agenda 2030 delle Nazioni Unite per lo sviluppo sostenibile. In particolare, questa ricerca si allinea con l'obiettivo 5, che mira a "Raggiungere l'uguaglianza di genere ed emancipare tutte le donne e le ragazze", contribuendo all'emancipazione femminile attraverso la creazione di opportunità economiche e promuovendo l'uguaglianza di genere nel mondo dell'imprenditoria. L'obiettivo 8, volto a "Promuovere una crescita economica sostenuta, inclusiva e sostenibile, occupazione piena e produttiva e un lavoro dignitoso per tutti", viene supportato incoraggiando una crescita economica inclusiva attraverso l'innovazione e la creazione di posti di lavoro offerti dalle imprese guidate da donne migranti. Infine, con l'obiettivo 10, che si propone di "Ridurre le disuguaglianze sia all'interno dei Paesi che tra di loro", la ricerca promuove l'integrazione sociale e la riduzione delle disuguaglianze economiche e sociali, evidenziando il contributo significativo delle donne migranti all'economia e alla società dei paesi ospitanti e di origine. (Nazioni Unite, 2023).*

Le iniziative imprenditoriali da parte delle donne migranti non solo garantisce il sostentamento proprio e delle famiglie ma contribuisce anche allo sviluppo economico e sociale sia delle comunità ospitanti sia di quelle d'origine. (Chreim, Samia, et al. 2018)

Inoltre, la necessità di approfondire questi argomenti è accentuata dal contesto globale caratterizzato da veloci mutamenti geopolitici, economici e sociali. I recenti conflitti in Ucraina e Palestina, uniti alle ripercussioni della pandemia di Covid-19, hanno influenzato non solo i flussi migratori ma anche creato nuove opportunità e sfide per le imprenditrici migranti. In particolare, la crisi migratoria a seguito dell'invasione russa dell'Ucraina nel febbraio 2022 ha creato un ingente flusso migratorio verso l'Europa, mettendo sotto pressione le politiche di asilo e migrazione degli Stati membri dell'UE. Secondo le ultime stime al febbraio 2024 fornite da UNHCR, più di 6 milioni di profughi ucraini si trovano attualmente in Europa, con un notevole numero di essi che ha cercato asilo in paesi confinanti come Polonia,

¹ Università di Cagliari
e-mail: giulio.palmas@unica.it

² Università di Cagliari
e-mail: michela.floris78@unica.it

Repubblica Ceca, Bulgaria, e Romania, oltre che in destinazioni più lontane come Germania e Regno Unito. (UNHCR, 15 febbraio 2024)

In risposta all'ingente afflusso di rifugiati verso l'Europa, l'Unione Europea ha attivato il meccanismo di protezione temporanea. Questa misura straordinaria, introdotta per la prima volta con la Direttiva 2001/55/CE, mira a offrire un rifugio sicuro e un accesso rapido ai diritti fondamentali per coloro che fuggono da situazioni di emergenza. Questo strumento risulta particolarmente rilevante per le imprenditrici migranti, poiché questa protezione temporanea fornisce accesso immediato al mercato del lavoro, alloggio, istruzione per i loro figli, assistenza medica e sociale, creando così una base da cui possono avviare o continuare le proprie attività imprenditoriali.

La pandemia di Covid-19 ha imposto sfide senza precedenti, in particolare la chiusura delle frontiere ha colpito duramente le imprese gestite dai migranti, specialmente quelle dipendenti dal commercio transfrontaliero. Questo contesto ha accentuato le sfide già esistenti nel settore formale a causa di barriere socio-culturali, economiche e politiche, spingendo molti migranti ad operare in lavori informali. Le donne, in particolare, si impegnano in una serie di attività nel settore informale, a causa della possibilità di operare senza il bisogno di capitali ingenti o competenze specialistiche, utilizzando queste occupazioni come ultima risorsa per sopravvivere nell'ambiente urbano dinamico. (Jenberu, Kasse, 2021) Questo contesto ha reso alcune donne completamente dipendenti dai loro partner o dalle reti di supporto per la sopravvivenza, limitando la loro autonomia finanziaria e aumentando la loro vulnerabilità economica. Sebbene alcune donne abbiano ricevuto aiuti da ONG, chiese e reti sociali, l'accesso a tali supporti variava significativamente in base allo status di rifugiato, alla classe sociale e ad altri fattori intersezionali. Le donne con uno status legale meno stabile, come le richiedenti asilo, avevano meno probabilità di accedere agli aiuti governativi. Nonostante queste sfide, è emersa una forte solidarietà all'interno delle comunità di migranti, con esempi di condivisione di risorse limitate e supporto reciproco. (Mulu, 2021)

Gli sviluppi tecnologici, compreso l'uso dell'automazione, dell'intelligenza artificiale e della robotica, stanno trasformando i mercati globali, offrendo sia nuove opportunità che sfide significative, in particolare nei settori a bassa qualificazione dove i lavoratori migranti sono spesso impiegati. Inoltre, la disparità digitale, dovuta a limitazioni nell'accesso a internet, rappresenta un ostacolo significativo. Sebbene le nuove tecnologie creino nuove opportunità di lavoro, esse si concentrano in settori avanzati che potrebbero non essere facilmente accessibili ai migranti a causa della mancanza di programmi di formazione adeguati. (Kerwin, 2020) È quindi fondamentale che le istituzioni attuino iniziative di formazione incentrate sui migranti che non solo forniscano le competenze tecniche necessarie nei settori ad alta tecnologia, ma promuovano anche l'integrazione culturale e linguistica. Tuttavia, c'è il rischio che le iniziative specifiche di genere possano indirizzare le donne migranti verso settori stereotipati come la moda e il cucito, limitando la loro partecipazione a settori più innovativi e tecnologicamente avanzati. (Solano, 2023) L'attuazione di corsi di formazione specifici per i migranti incentrati sulle tecnologie avanzate potrebbe attrarre i migranti che hanno già elevate competenze tecniche.

La digitalizzazione, inoltre, offre alle imprenditrici migranti strumenti preziosi per mantenere e rafforzare i legami con i propri cari rimasti nel paese di origine. Le barriere dovute alla distanza possono essere superate attraverso sistemi di videochiamate che permettono loro di restare in costante contatto con le famiglie e le reti di supporto. La letteratura, ha inoltre evidenziato l'importanza dell'utilizzo dei social network e il ruolo della clientela prevalentemente femminile nel rendere il lavoro delle imprenditrici migranti più sicuro, sottolineando come le piattaforme digitali possano servire non solo per il marketing e la vendita ma anche come strumenti di empowerment e protezione. Questo non solo fornisce un sostegno emotivo cruciale, ma facilita anche la condivisione di conoscenze e risorse che possono essere estremamente importanti per l'avvio e la gestione delle loro imprese. Tale capacità di rimanere connessi non solo rafforza il tessuto sociale tra i paesi ma apre anche opportunità di business transnazionali, sfruttando i legami familiari ed etnici per esplorare nuovi mercati.

In aggiunta, le strategie adottate dalle imprenditrici per agire in contesti a rischio, come l'avvio di attività commerciali in sobborghi sicuri o l'impiego di figure maschili per gestire le operazioni quotidiane, rappresentano pratiche efficaci per mitigare i rischi connessi alla xenofobia. (Oumlil, 2023)

Purpose of the paper. Lo scopo di questo studio è quello di colmare una specifica lacuna nella letteratura esistente, esplorando in modo approfondito l'imprenditorialità migrante femminile all'interno delle aziende familiari. Attraverso l'esame dettagliato delle esperienze di dieci imprenditrici migranti, lo studio mira a identificare e comprendere i fattori contestuali, familiari e individuali che possono agevolare o impedire il loro successo imprenditoriale. La ricerca si propone di esplorare in modo critico come queste imprenditrici navigano tra le sfide e le opportunità nel loro percorso imprenditoriale, ponendo particolare enfasi sul ruolo del capitale sociale e sulle reti di supporto familiare ed etnico.

Attraverso un approccio metodologico qualitativo, basato su interviste approfondite, il presente lavoro cerca di offrire nuove prospettive sull'importanza delle dinamiche interne e esterne alle aziende familiari gestite da donne migranti. Questo lavoro si avvale della teoria dell'embeddedness come framework interpretativo per analizzare le esperienze delle imprenditrici migranti. Tale teoria, che enfatizza l'importanza del contesto sociale, economico e culturale in cui le imprese sono radicate, ha guidato l'elaborazione delle domande di intervista e l'interpretazione dei dati raccolti. Attraverso questo approccio teorico, si è cercato di comprendere come le relazioni personali e professionali, insieme alle condizioni socio-economiche e culturali, influenzino le decisioni imprenditoriali e il successo delle attività guidate da donne migranti.

Inoltre, il lavoro intende contribuire alla letteratura sull'imprenditorialità migrante evidenziando strategie efficaci e potenziali barriere, con l'obiettivo di suggerire politiche e programmi specifici che sostengano e promuovano l'imprenditorialità femminile migrante, consentendo a queste donne di raggiungere il successo imprenditoriale e

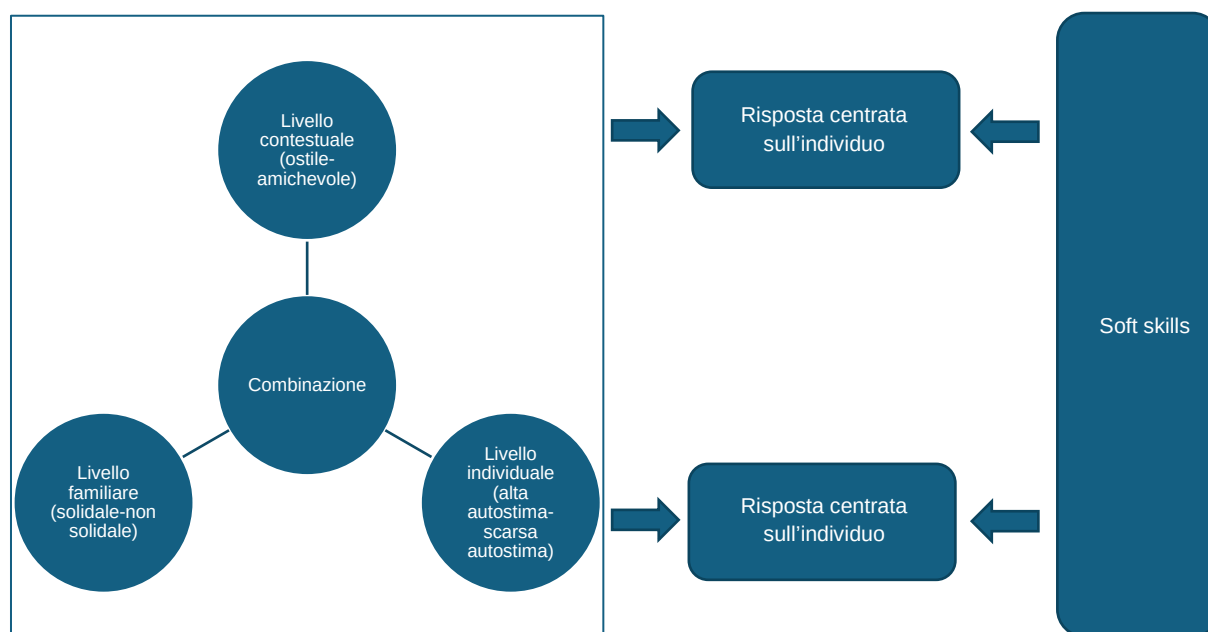
contribuire al tessuto economico e sociale delle comunità ospitanti. In particolare, le politiche di ricongiungimento familiare si rivelano essenziali, fornendo alle imprenditrici migranti il supporto indispensabile per avere successo in un contesto imprenditoriale competitivo e sconosciuto. La ricerca si pone, quindi, come un ponte tra teoria e pratica, cercando di evidenziare percorsi di successo e aree di miglioramento nel contesto dell'imprenditorialità migrante femminile.

Methodology. Questo studio adotta un approccio di studio multi caso per esaminare in dettaglio le esperienze di dieci imprenditrici migranti, tutte attivamente coinvolte in aziende familiari all'interno della stessa regione italiana. Il campione è costituito da donne provenienti da diverse nazionalità, il che introduce una vasta gamma di background culturali e professionali. Con un'istruzione media elevata, il 70% delle partecipanti vanta un Master, mentre il 30% ha una laurea triennale. L'età media del gruppo è di 44,1 anni, segnalando un livello di maturità professionale che promette una ricchezza di esperienze e competenze. Dal punto di vista familiare, il campione mostra una divisione interessante: il 60% delle imprenditrici non ha figli, evidenziando potenzialmente minori vincoli personali, mentre il restante 40% ha due o più figli, suggerendo una complessità aggiuntiva nella gestione dell'equilibrio tra vita professionale e responsabilità familiari. Lo stato civile delle partecipanti si divide equamente, con il 60% sposato e il 40% single.

La selezione mirata delle intervistate è stata basata sul loro significativo ruolo all'interno delle aziende familiari, assicurando che tutte fossero impegnate in posizioni di leadership o comunque apicali per l'attività. Al fine di rispettare i principi etici fondamentali, abbiamo ottenuto il consenso informato da ciascuna imprenditrice, garantendo la riservatezza e l'anonimato dei dati raccolti. Le interviste sono state condotte di persona, in inglese, per superare le barriere linguistiche e assicurare una comunicazione chiara. Questa scelta ha permesso una discussione fluida e aperta, offrendo alle partecipanti la possibilità di esprimersi liberamente e senza fraintendimenti.

La documentazione raccolta, sia primaria (interviste) che secondaria (relazioni aziendali, siti web, social media, e articoli di stampa), ha fornito una base di dati ricca e variegata per l'analisi. Adottando un approccio induttivo, due codificatori indipendenti hanno analizzato il materiale, identificando temi emergenti e conducendo un'analisi incrociata per evidenziare modelli e divergenze tra i casi. Qualsiasi potenziale discrepanza nell'interpretazione dei dati sarebbe stata risolta con il parere di un terzo codificatore. Tuttavia, la coerenza delle analisi ha precluso la necessità di tale misura, confermando l'oggettività del processo di codifica.

Results. I risultati dello studio evidenziano l'importanza delle interazioni tra contesto, famiglia e livello individuale nell'imprenditorialità femminile migrante. La combinazione di queste dimensioni crea delle esperienze uniche che influenzano profondamente il percorso imprenditoriale di ciascuna donna. Queste diversità hanno portato a due prospettive sulle azioni imprenditoriali: una incentrata sull'individuo e l'altra sull'azienda. In particolare il contesto può essere percepito come amichevole ("Prospero in un ambiente che mi accoglie calorosamente mentre costruisco i miei sogni in questa comunità amichevole!") o ostile ("Sento che la mia presenza qui non è gradita"), la famiglia come solidale ("La mia famiglia è unita dall'amore, colmando le distanze con calore e sostegno alla mia iniziativa imprenditoriale") o non solidale ("...la mia famiglia è lontana, quindi capisco di non poter ottenere un vero aiuto, ma non ricevo nemmeno una parola di incoraggiamento da loro, e questo mi rende triste"), e il livello individuale può essere caratterizzato da un'alta autostima ("Credo in me stessa e navigo con fiducia la mia sfida imprenditoriale, trasformando le difficoltà in opportunità") o da una bassa autostima ("Non sono sicura delle mie abilità, ma mi sforzo di superare la mia mancanza di fiducia mentre affronto la sfida imprenditoriale"). Sulla base di queste percezioni, le imprenditrici migranti formulano una risposta cognitiva specifica, intenzionale o meno, facendo leva su azioni imprenditoriali ben definite, centrate sull'individuo ("Spesso, mi sento sola contro tutti. C'è sfiducia qui, e la mia famiglia è lontana (...) Per affrontare queste sfide, sto lavorando su me stessa. (...) Frequento corsi per specializzarmi, mi sforzo di acquisire ancora più competenze (...) per dimostrare a me stessa e agli altri che valgo.") o sull'azienda ("Sento di avere una base solida su cui continuare a crescere la mia attività. La mia famiglia mi sostiene, sono apprezzata qui, e mi sento forte, come una leonessa. (...) La mia attività crescerà ancora di più."). Queste risposte sembrano essere il risultato di specifiche soft skills esibite dalle donne durante le loro narrazioni. I risultati esposti in questo studio forniscono una panoramica significativa delle sfide e delle opportunità incontrate dalle imprenditrici migranti. È importante notare che questa ricerca è attualmente un work in progress. Progetti futuri includeranno l'ampliamento del campione di studio e un'indagine più approfondita sulle implicazioni teoriche e pratiche delle nostre scoperte.



Research limitations. Sebbene lo studio mostri intuizioni interessanti, è importante riconoscere alcune limitazioni che ne circoscrivono la portata e la generalizzabilità. La prima limitazione riguarda la dimensione del campione, con soli dieci interviste la rappresentatività è limitata, il che può restringere la capacità di generalizzare i risultati a un contesto più ampio. Nonostante le esperienze dettagliate forniscano approfondimenti significativi, studi futuri potrebbero beneficiare dell'inclusione di un numero maggiore di partecipanti per potenziare e confermare i risultati dello studio.

Un secondo aspetto da prendere in considerazione è l'assenza di un'analisi approfondita sugli effetti delle dimensioni aziendali. Lo studio non ha esplorato in dettaglio come le diverse dimensioni aziendali possano influenzare le dinamiche imprenditoriali individuate. Questo rappresenta una variabile da considerare nelle ricerche future, in quanto una comprensione più ampia di queste relazioni potrebbe offrire ulteriori spunti per il sostegno e lo sviluppo dell'imprenditorialità femminile migrante.

Un ulteriore aspetto, la concentrazione su una regione specifica dell'Italia, sebbene abbia permesso un'indagine approfondita, limita la generalizzabilità dei risultati ad altri contesti geografici. Le particolarità culturali, economiche e sociali della regione esaminata possono aver influito sulle esperienze delle imprenditrici in modi che potrebbero non essere replicabili altrove. Pertanto, è auspicabile che ricerche future esplorino l'imprenditorialità femminile migrante in diverse aree geografiche per valutare la consistenza delle nostre scoperte attraverso vari contesti.

Infine, un'ulteriore area di indagine che emerge particolarmente rilevante riguarda l'analisi comparativa sull'ambientamento delle donne migranti di una stessa nazionalità nei diversi paesi di destinazione. Lo studio non ha approfondito come specifiche comunità nazionali affrontano e si adattano alle sfide imprenditoriali nei contesti in cui si trasferiscono. Pertanto, sarebbe di grande interesse per le ricerche future esaminare in modo più dettagliato come le imprenditrici migranti, provenienti da uno stesso paese di origine, si inseriscono nell'ecosistema imprenditoriale e sociale dei loro paesi ospitanti.

Managerial implications. I risultati dello studio forniscono un supporto significativo alle imprenditrici e alle professioniste migranti, comprese le consulenti e le altre titolari d'impresa, offrendo indicazioni preziose sui fattori che possono favorire o ostacolare i comportamenti imprenditoriali. Prevedendo le potenziali preoccupazioni e i problemi, in particolare le barriere contestuali, familiari e individuali, le imprenditrici migranti possono affrontare efficacemente le sfide all'interno delle aziende familiari transnazionali.

È fondamentale sottolineare il vantaggio che le aziende familiari transnazionali possano trarre dal mantenimento di legami commerciali non solo con il proprio Paese d'origine ma anche esplorando nuovi mercati. Grazie alle loro esperienze di vita uniche, i migranti si trovano in una posizione privilegiata per gestire e sviluppare attività imprenditoriali che superano i confini nazionali. Tuttavia, gli studiosi hanno evidenziato che le esperienze migratorie, pur essendo una risorsa potenziale, non garantisce automaticamente il successo imprenditoriale. È pertanto necessario che le imprenditrici migranti siano supportate con programmi di formazione all'imprenditoria che riconoscano e valorizzino le loro conoscenze e competenze specifiche, includendo moduli dedicati alla gestione delle attività transfrontaliere, all'accesso a reti internazionali e alla comprensione delle varie normative commerciali, potenziando così la loro capacità di massimizzare le risorse a disposizione.

I risultati dello studio enfatizzano anche la necessità di un'analisi più sfumata che riconosca la diversità delle esperienze migranti, sottolineando l'importanza di evitare generalizzazioni. (Mittmasser, 2022) Inoltre, il ruolo critico dei politici è fondamentale nell'implementazione di misure proattive che favoriscano programmi di formazione all'imprenditorialità su misura, essenziali per potenziare le capacità individuali e mitigare gli impatti di ambienti sfidanti.

L'importanza delle politiche di ricongiungimento familiare svolge un ruolo fondamentale nel supportare queste donne a superare le barriere familiari, che spesso rappresentano un ostacolo significativo al loro percorso imprenditoriale. La possibilità del ricongiungimento familiare non solo offre un supporto emotivo indispensabile ma anche una maggiore stabilità e sicurezza, elementi cruciali per l'avviamento e la crescita di imprese in un paese straniero. Tuttavia, il ricongiungimento familiare porta a volte a restrizioni aggiuntive, specialmente in contesti dove la presenza fisica di membri della famiglia, può comportare limitazioni culturali o sociali. In tali situazioni, potrebbe essere preferibile incentivare programmi che promuovano un uso efficace dei social media per mantenere i legami familiari. Questa strategia permetterebbe di evitare le restrizioni che possono sorgere dal ricongiungimento fisico, offrendo alle donne migranti la possibilità di mantenere relazioni familiari stabili e di supporto attraverso la comunicazione digitale, senza incontrare gli ostacoli imposti da determinate norme culturali.

Allo stesso modo, la semplificazione delle procedure burocratiche relative all'avvio e alla gestione di imprese può ridurre significativamente il carico amministrativo, consentendo loro di concentrarsi maggiormente sullo sviluppo e l'espansione delle loro attività.

Un ulteriore aspetto cruciale evidenziato dallo studio riguarda l'importanza del sostegno fornito all'interno delle imprese sociali gestite da donne migranti. Queste realtà non solo facilitano l'ingresso delle nuove imprenditrici nel mercato ma offrono anche un supporto emotivo fondamentale, specialmente in momenti di vulnerabilità personale come il divorzio o la perdita del coniuge. L'esistenza di queste reti di supporto dimostra come la solidarietà femminile possa superare i confini professionali, rafforzando il benessere e la resilienza delle imprenditrici. Di conseguenza, è essenziale che le politiche favoriscano la creazione e lo sviluppo di queste iniziative, facilitando l'accesso a finanziamenti e benefici fiscali, per sostenere l'integrazione e il successo delle imprenditrici migranti nei tessuti economici locali e contribuire al loro benessere personale.

Originality of the paper. Questo studio si distingue dalle ricerche precedenti, che spesso hanno trattato separatamente il contesto e il livello individuale, evidenziando invece la loro interconnessione e coesistenza. In particolare, questa ricerca approfondisce le esperienze delle imprenditrici migranti affermate nel contesto delle imprese familiari, il che aggiunge complessità alle loro interazioni con ambienti multipli - il loro Paese d'origine e il Paese ospitante. Attraverso questo approccio, si offre una prospettiva unica per comprendere le percezioni sfumate del contesto, variando dalla cordialità all'ostilità. Le dinamiche cognitive rivelate, strettamente legate alle dinamiche dell'azienda familiare, illustrano le strategie di adattamento impiegate da questi imprenditori per affrontare le sfide e raggiungere il successo. Incrociando l'ambito dell'azienda familiare con fattori personali e contestuali, il presente studio arricchisce la comprensione di come le imprenditrici migranti di successo manovrino attraverso le complesse dinamiche di interazione, illuminando il loro percorso imprenditoriale distintivo tra diversi contesti culturali e commerciali.

References

- CHREIM S., SPENCE M., CRICK D., LIAO X. (2018), "Review of female immigrant entrepreneurship research: Past findings, gaps and ways forward", *European Management Journal*, vol. 36, n. 2, pp. 210-222.
- JENBERU A.A., KASSE G.M. (2021), "Deriving forces and socioeconomic status of women in the urban informal sector in Bichena Town, West-Central Ethiopia", *Journal of Social and Economic Development*, vol. 23, n. 2, pp. 258-282.
- KERWIN D. 2020. International migration and work: charting an ethical approach to the future", *Journal on Migration and Human Security*, vol. 8, n. 2, pp. 111-133.
- MITTMASER C. (2022), "“Because you’ve lived in different places all your life”–How mobility trajectories create cross-border entrepreneurial opportunities for migrants in Switzerland", *Geoforum*, vol. 129, pp. 161-171.
- MULU N.N.T. (2021), "COVID-19 and its effects on the lives and livelihoods of Congolese female asylum seekers and refugees in the city of Cape Town", *African Human Mobility Review*, vol. 7, n. 1.
- OUMLIL K. (2023), "Counter-Narratives about Sub-Saharan Migrant Women in the Digital Public Sphere", *Arab Media & Society*, n. 35.
- SOLANO G. (2023), "A level playing field for migrant entrepreneurs? The legal and policy landscape across EU and OECD countries", *International Migration*, vol. 61, n. 2, pp. 27-47.

Websites

<https://unric.org/it/agenda-2030/>
<https://data.unhcr.org/en/situations/ukraine>

When algorithms help cross-cultural management educators: a proposed supportive tool

BICE DELLA PIANA¹ FRANCESCO DI VINCENZO² CHIARA SIGNORE³ MARIO TREROTOLA⁴

Abstract

This study explores the conceptualization and design of a supportive tool aiming at assessing the student Cross-Cultural Competence (CCC) within the context of higher education. Employing Principal Component Analysis (PCA) and non-hierarchical Cluster Analysis (non-HCA), the research aims to discern patterns and similarities in student data to aid in the conceptualization of the supportive tool for cross-cultural management educators. It coherently to the relevant literature discourse examines the impact of several factors, including experiences in foreign countries and participation in academic courses with a cross-cultural emphasis. This algorithm is also designed to assist in creating tailored strategies for enhancing students' CCC by exploiting identified cluster compositions. Data was gathered through a specifically designed survey based on literary research orientations and distributed to students across bachelor's and master's degree programs at the University of Salerno. The PCA identified three principal components exerting a significant influence on students' capability to navigate diverse cultural environments. Subsequent non-HCA defined distinct student traits, thereby providing deeper insights into the assessment of CCC. The algorithm, based upon these statistical methodologies, can enhance the automation of future survey analyses across diverse contexts. This advancement provides cross-cultural management educators with a supportive tool for fostering CCC through the deployment of customized educational strategies, tailored to the unique attributes of the students.

Key words: principal component analysis; non-hierarchical cluster analysis; assessment; cross-cultural competence; cultural intelligence; algorithm

Framing of the research. In the evolving landscape of higher education, the imperative to cultivate cross-cultural competence (CCC) among students has never been more pronounced. The university environment emerges as a critical opportunity for the CCC education among students, equipping them with the requisite skills to effectively engage in international contexts. CCC has been defined by Gertsen (1990) as the ability of individuals to function effectively within the context of another culture. Cross-cultural training programs frequently focus on elements conducive to brief instructional periods, such as specific behavioral skills and knowledge that can be readily assessed, often at the expense of a more comprehensive cultural understanding and the development of metacognitive abilities (Johnson et al., 2006). Earley & Ang (2003) broadened the conventional notion of CCC, incorporating cognitive, behavioral, and motivational dimensions but also a metacognitive component, thereby introducing the concept of CQ. It has been defined as the ability of individuals to effectively navigate and manage interactions within culturally diverse environments (Earley & Ang, 2003) and this construct provides insight into variance in intercultural competence (Eisenberg et al., 2013). The CQ is a multidimensional construct aggregated from four dimensions representing different capabilities. Cognitive CQ regard explicit knowledge of values, norms, and practices in various cultures (Earley & Ang, 2003). It also includes knowledge of the social, economic, and legal systems of different cultures. Metacognitive CQ refers to an individual's level of conscious cultural awareness and it relies on advanced cognitive strategies and in-depth information processing (Van Dyne et al., 2012). This dimension is associated with awareness of others' cultural preferences and intentions both before and during cross-cultural interaction. Motivational CQ reflects the ability to direct attention and energy toward learning about and performing effectively in situations marked by cultural differences (Ang et al., 2007). A high level of motivational CQ enables individuals to more effectively manage both the emotional and cognitive aspects of multicultural situations, which can often generate uncertainty and anxiety (Van Dyne et al., 2012). Furthermore, they demonstrate a keen interest in learning about various aspects of different cultures and display increased confidence in adapting to culturally diverse situations (Eisenberg et al., 2013). The last dimension, the behavioral CQ refers to the ability to display

¹ University of Salerno
e-mail: bdellapiana@unisa.it

² University of Salerno
e-mail: fdvincenzo@unisa.it

³ University of Salerno
e-mail: csignore@unisa.it

⁴ Politecnico of Torino
e-mail: mario.trerotola@polito.it

suitable verbal and non-verbal behaviors when interacting with culturally diverse individuals. It includes a wide and adaptable range of behaviors, including aspects such as tone, gestures, personal space, dress codes, and time management, which are appropriate for intercultural interactions (Eisenberg et al., 2013). The development of culturally intelligent resources is achievable through a positive approach towards diversity, with cross-cultural educators playing a pivotal role in fostering effective interactions among individuals from varied cultural backgrounds. CQ is dynamic, and individuals can enhance their competences through a range of strategies, including training and coaching programs, personalized development plans, or, most significantly, through direct experiences where participants are immersed in a culturally distinct environment (Rand, 2015). Griffith et al. (2016) highlighted different evidence of reliability and validity of intercultural competence assessment including the Cultural Intelligence Scale (CQS) (Ang et al., 2007). The internationalization of academic curricula and exposure to diverse cultures have been instrumental in creating opportunities for significant transformations in education and learning, thereby enhancing international cross-fertilization, but to understand how to develop customized strategies tailored to the unique needs of students, it is essential to identify common patterns of characteristics that enable the definition of objectives for each student group.

Purpose of the paper. The purpose of the paper is search for similarities and hidden patterns between students, using PCA and a non-HCA to identify key components contributing to CCC of the students to develop a technological tool: an algorithm designed to serve as an auxiliary resource for cross-cultural educators. This algorithm aims to facilitate the formulation of targeted strategies for the future enhancement of CCC among students, by interpreting and applying the patterns that delineate the compositions of identified clusters thought the analysis of the impact of study abroad experiences, the number of countries visited, and participation in cross-cultural related courses.

Methodology. During the four-year period 2019-2022, a questionnaire was administered by the 3CLab - Cross Cultural Competence Learning and Education research lab at the University of Salerno with the aim of measuring the CQ level of university students. The survey was implemented via the CAWI (Computer Assisted Web Interviewing) approach. The choice of this methodology stems from the possibility of constructing a tailor-made questionnaire, asking questions targeted to the research objectives through a clear, easy-to-complete interface that can be used at anytime and anywhere in the world (Amaturo, 2012). The research sample consisted of university students enrolled in both bachelor's and master's degree courses.

The questionnaire is divided into three different sections. The first part of the form includes questions referring to socio-demographic information of the respondents: gender, age, country of origin, country where the pre-university education was completed to ascertain whether it was conducted abroad. The second part is aimed at investigating the enabling factors for the development of students' CCC. Based on the literature, it was determined that the questionnaire should incorporate a question about experiences abroad lasting at least one month. Several studies have been interested in the results obtained from short-term experiences (Chieffo & Griffiths, 2004; Dwyer, 2004) and according to Fowers and Davidov (2006), there is strong evidence of the effectiveness of this type of experience in promoting intercultural interest, knowledge, and cultural awareness. Moreover, having visited different countries also appears to be an additional factor conditioning CCC. For this reason, students were asked to indicate the number of countries they had visited. The questionnaire also includes questions regarding whether students attended a specific course related to cross-cultural topics. Several studies have highlighted the positive impact that courses focused on cross-cultural issues can have improving students' CQ levels (Ramsey & Lorenz, 2016; Eisenberg et al., 2013; MacNab, 2012). The survey concludes with the self-assessment model developed by Ang et al. (2007), the CQS which allows us to define the students' CQ level. It consists of 20 items, sorted by the four dimensions of Cultural Intelligence (Metacognitive, Cognitive, Motivational and Behavioral), which define the overall CQ score and level for each dimension. Using a seven-mode Likert scale, students define their degree of agreement/disagreement with the proposed statements following the model of Van Dyne et al. (2015), whose research has supported the predictive validity of CQ with student self-reported measures. To develop the CQS, Ang et al. (2007) reviewed the literature on CQ and intercultural competence. They supplemented it with the contribution of several interviews with eight managers with extensive global experience. Different fields of study were used to determine the specific items. In particular, the authors referred to educational and cognitive psychology (O'Neil & Abedi, 1996), which assesses the awareness, planning, regulation, monitoring, and control of cognitive thinking and learning processes; the Human Relation Areas (Murdock's, 1987; Triandis, 1994), including the economic, legal and social systems of other cultures; the intrinsic satisfaction theory (Deci & Ryan, 1985), auto-efficacy in the intercultural context theory (Bandura, 2002) and intercultural communication for verbal and non-verbal flexibility (Hall, 1959; Gudykunst et al., 1988) were also assessed. The authors (Ang et al., 2007) demonstrated a good fit of the scale between the four-factor model and a sample of Singapore university students. Furthermore, they verified the reliability of the scale with three different studies. A first study provided cross-validation of the Cultural Intelligence Scale (CQS) across different samples, a second study assessed its generalization over time through cross-validation with a subset of respondents four months apart, and the last study assessed cross-country generalization with a cross-comparison of a sample from the United States versus the Singapore sample. A validation analysis of the scale was also conducted regarding the Italian version of the 20 items, providing further empirical support for the reliability of the CQS and the consistency of the four specific dimensions of cultural intelligence (Gozzoli & Gazzaroli, 2018).

The sample under consideration in this study comprises 137 individuals. The gender distribution within the sample includes 81 female and 56 male respondents. Age-wise, the sample is segmented as follows: approximately 48.18% of the individuals are aged between 18 to 22 years, 40.88% are within the 23 to 26 age brackets, 7.30% fall into the 27 to 30 range, and 3.65% are older than 30 years. These percentages offer a detailed view of the age composition of the sample. Regarding nationality, the sample features a broad diversity, encompassing n.3 individuals from Armenia, n.1 from

Belarus, n.1 from the Czech Republic, n.6 from Finland, n.1 from Greece, n.1 from Hungary, n.9 from India, n.105 from Italy, n.5 from Romania, n.1 from Spain, n.1 from Uganda, and n.3 from Ukraine.

The Principal Component Analysis (PCA) is a multivariate data analysis technique use to study, explore, and represent the variation present in the dataset using a small number of factors (PC). This allows the identification of one or more latent PCs that capture the similarities between the variables (Barbaranelli & D'Olimpio, 2006). It's a powerful tool in examine the correlation among variables in the dataset. It is based on the direct calculation of eigenvalues and eigenvectors with the aim of replacing the old observed variables with new variables that are a linear combination of the former that summarize their information. The components thus represent linear combinations of the original variables explaining the maximum variance (i.e. summarizing as much information as possible of the original variables) (Barbaranelli & D'Olimpio, 2006).

The analyses were conducted using SPSS software in its version 29 and the list of the variables selected from the survey to conduct the PCA are presented in Table 1. The number of PCs to be extracted has been defined by the Kaiser criterion (Kaiser, 1960; Barbaranelli & D'Olimpio, 2006): eigenvalue higher that 1 are considerate significant in the PCA. A Varimax type rotation (maximum interaction for coverage equal to 250) with Kaiser normalization has been applied to the variables so that the PCs calculated are linear combination of the original variables. In addition, the Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity indicate that the model is adequate (Kaiser, 1970; 1974; Barlett, 1954). Among the various solutions documented in the literature, the cluster analysis was performed using the k-means methodology. This is the most widespread non-hierarchical clustering method (Barbaranelli & D'Olimpio, 2006) and involves solving an algorithm for minimizing the distances between all possible centroids. It is a point-based clustering approach that initiates with the cluster centers positioned arbitrarily and continues by iteratively relocating the cluster centers at each step to reduce the clustering error (Likas et al., 2003). It produces changes in the partition by moving objects from one cluster to another based on Euclidean distance. The assignment of individual objects to groups is done in a way that maximizes the ratio between the "between-groups" variability and the "within-groups" variability, according to the criterion of "minimum variability within groups" and "maximum variability between groups" (Barbaranelli & D'Olimpio, 2006).

Table 1. Variables

Variables	Type	Information acquired
Education Abroad	Dichotomous variable 1: Different; 0: Equal	Whether the respondent pursued their non-college education abroad.
Period Abroad	Dichotomous variable 1: Yes; 0: No	Assessment of the duration of time spent abroad, with a minimum period of one month.
Number of countries visited	Nominal variable 1: 0-3; 2: 4-7 countries; 3: >8 countries	Evaluation of the total number of countries visited.
Cross-cultural courses attended	Dichotomous variable 1: Yes; 0: No	Respondent's attendance of at least one cross-cultural management, competence, or similar course
Mot CQ	Likert scale (1-7)	Motivational dimension of CQ
Cog CQ	Likert scale (1-7)	Cognitive dimension of CQ
Meta CQ	Likert scale (1-7)	Metacognitive dimension of CQ
Beh CQ	Likert scale (1-7)	Behavioral dimension of CQ

Results. The main results of our research are organized as follow. The first session is about the results of the PCA and non-HCA; the second session is focused on the formalized algorithm.

PCA and non-HCA results

Descriptive statistics regarding this sample are detailed in Table 2.

Table 2. Descriptive statistics

	Minimum	Maximum	Mean	Std. Deviation	Variance
Date	2019	2022	2020.31	.765	.585
Sex	0	1	.41	.493	.243
Age	0	3	.66	.770	.592
Cross-cultural courses attended	0	1	.19	.394	.155
Attended school	0	1	.07	.249	.062
Number of countries visited	1	3	1.55	.663	.440
Period Abroad	0	1	.32	.469	.220
Meta CQ	1.00	7.00	4.9307	1.23771	1.532
Cog CQ	1.00	7.00	4.06569	1.23972	1.537
Mot CQ	1.0	7.00	5.591	1.1378	1.295
Beh CQ	1.0	7.00	4.745	1.3741	1.888
CQ Overall	1.00	7.00	4.7898	.95452	.911

In our dataset, the eigenvalue continues to have a value >1 where it indicates 3 components representing a total variance of approximately 62%. For this region, it was decided to perform PCA with a 3-factor model (Table 3). Since the original variables may exist on various measurement scales, they are typically centered and scaled. KMO's values is close to the threshold value 0.7 representing the presence of sufficient correlation between the variables and the Barlett's test of sphericity is significant (Table 4). This constitutes an inferential test aimed at determining whether the variables are independent. Since the results of the test prove to be significant, it confirms the feasibility of a PCA. In summary, the PCA has revealed a model that consists of three distinct PCs. In the process of obtaining the rotated component matrix, which elucidates the composition of the PCs as presented in Table 5, we have excluded cross-loadings below 0.3 and grouped the factors by size.

Therefore, these PCs were analyzed to ascertain their impact on cross-cultural competence: Component 1 encompass the 4 dimensions of the CQ (as expected given the validation of the CQS above mentioned). Component 2 includes both the duration of time spent abroad for at least one month and the total number of countries visited. The latter, Component 3, consists of participation in cross-cultural training courses and includes any form of pre-university education undertaken in a foreign country. This three new PCs were saved in SPSS and normalized using the regression method to allow aggregate values and subsequent analyses: non-HCA.

Table 3. Total Variance Explained and application of the Kaiser criterion.

Component	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings			Rotation Sum Squared Loadings		
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.437	30.458	30.458	2.437	30.458	30.458	2.357	29.465	29.465
2	1.390	17.373	47.831	1.390	17.373	47.831	1.440	17.997	47.462
3	1.137	14.217	62.048	1.137	14.217	62.048	1.167	14.586	62.048
4	.920	11.504	73.552						
5	.647	8.084	81.636						
6	.573	7.165	88.801						
7	.497	6.214	95.015						
8	.399	4.985	100.000						

Table 4 KMO and Barlett's test of Sphericity

Kaiser-Meyer-Olkin Measure of Sample Adequacy		.698
Barlett's test of Sphericity	Approx. - Chi Square	178.219
	Df	28
	Sig.	<.001

Table 5. Rotated Component Matrix

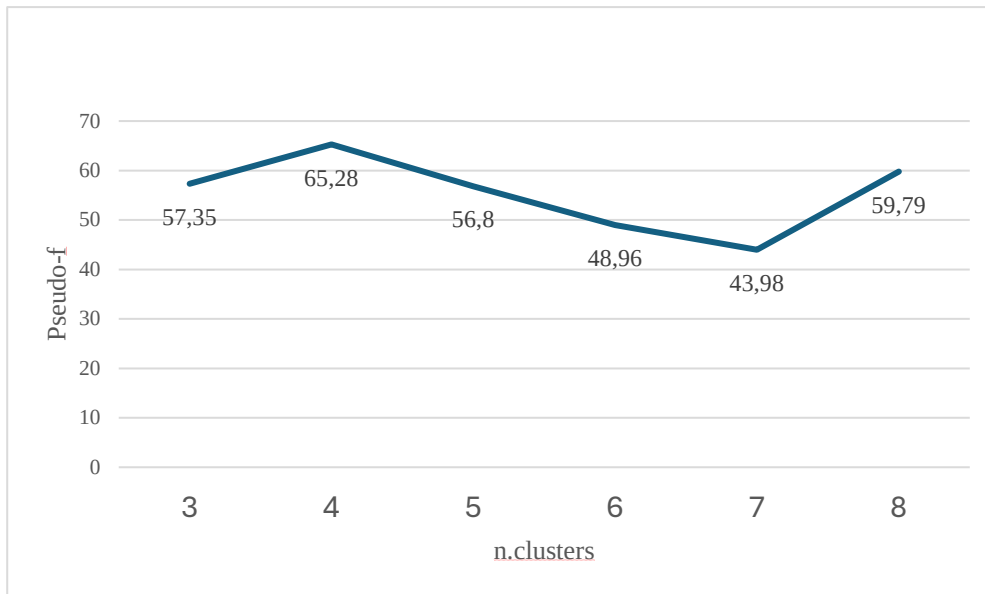
	Component		
	1	2	3
Meta CQ	.797		
Beh CQ	.784		
Mot CQ	.769		
Cog CQ	.701		
Number of countries visited		.822	
Education Abroad		.791	
Cross-cultural courses attended			.733
Attended school			.702

Based on the PCA conducted, we used the PCs as new variables to proceed with the definition of the clusters. To ascertain the optimal number of clusters, we empirically calculated and interpreted the pseudo-F statistic, which reaches its maximum value corresponding to the optimal cluster number (Calinski et al., 1974). The pseudo-F statistic has been computed as the ratio between the sum of the mean squares of the clusters and the mean square of the error, and it refers to the test statistic used to evaluate the overall significance of a cluster model. This type of test is associated with the analysis of variance (ANOVA) and is utilized to assess whether there are significant differences between the groups of data created through clustering maximizing the differences among cases in the different clusters. The hypothesis positing four clusters exhibited a score of 65.28, the highest among all other options considered (figure 1), and Table 6 displays that the model's significant. The four determined clusters are composed of, respectively, 55, 40, 29, and 13 units.

Table 6. Anova

	Cluster		Error		F	Sig.
	Mean square	df	Mean square	df		
Component 1	23.269	3	.498	133	46.755	<.001
Component 2	31.108	3	.321	133	96.648	<.001
Component 3	26.635	3	.422	133	63.151	<.001

Figure 1. Progression of Pseudo-F Statistical Measures



The findings of this study reveal the development and validation of a three-factor tool derived from the PCA, which facilitates a nuanced understanding of CCC among university students. This innovative approach delineates the intricate PCs, enabling a detailed exploration of the constituents of cultural competence. Subsequently, through the application of k-means cluster analysis, the research methodology allows for the identification of distinct profiles within the student population. Our classification based on the identified PCs allowed us to determine 4 clusters that uncovers common patterns among subsets of the population, shedding light on the variegated landscape of CCC within a diverse academic cohort. The four clusters exhibit distinct characteristics as depicted in Figure 3. Specifically, the subjects within Cluster 1 (n.55), have been grouped together due to their significantly higher levels of CQ compared to the other components. This could suggest that for these students, it might prove beneficial to plan activities to be carried out abroad and participation in CCC training. Conversely, Cluster 2 comprises 40 subjects who exhibit low levels across all PCs, particularly about the CQ and the experience abroad. This indicates that rather than participation in CCC courses, it would be beneficial to engage mechanisms capable of enhancing the overall level of CQ and to recommend their participation in programs, such as Erasmus, to effectively improve their CCC. Cluster 3 is distinguished by 29 subjects who excel notably in their experiences abroad. This cluster indicates the necessity for these individuals to formalize their experiences through specific CCC related courses to also increase their own CQ. Suggesting new experiences abroad would be superfluous. The latter cluster represents a “niche” group of subjects, evidenced by its smaller size relative to the others (n.13). These are students who have reported significant levels across all three detected PCs.

Figure 2. Final Cluster Centers



The proposed algorithm as supportive tool for cross cultural management educator

This methodology was outlined as a supportive tool through an algorithm that can help cross-cultural management educators. Figure 3 shows the pseudocode that delineates the proposed algorithm that initially applies PCA to the normalized dataset to identify the main axes of variance. It employs statistical tests-KMO and Bartlett's-to verify the

data's suitability for PCA. On meeting the threshold criteria, it extracts significant components, applies varimax rotation to maximize variance, and computes component scores. Subsequently, it performs k-means clustering to partition the data into optimal clusters, determined by a pseudo-F statistic. The final output presents the clustered data. Employing these statistical methodologies, the presented algorithm significantly contributes to the automation of analytical processes in survey research across a spectrum of contexts. It can help the deployment of specific strategies that are intricately customized to align with the distinct characteristics and cultural backgrounds of the students, thereby enhancing educational outcomes in a cross-cultural framework.

Figure 3. Pseudocode for Principal Component Analysis and k-Means Clustering

```

Data: Data to be analyzed.
Result: Component scores and clustering results.
load_data(file_path);
Function perform_PCA(data, variables)
    data_normalized ← normalize(data[variables]);
    covariance_matrix ← calculate_covariance(data_normalized);
    eigenvalues, eigenvectors ←
        eigen_decomposition(covariance_matrix);
    kmo_value, kmo_model ← calculate_KMO(data[variables]);
    bartlett_test_value, bartlett_test_p_value ←
        bartlett_sphericity_test(data[variables]);
    if kmo_value > threshold_KMO and bartlett_test_p_value <
        threshold_significance then
        selected_components ← select_components(eigenvalues);
        rotated_components ← varimax_rotation(eigenvectors,
            selected_components);
        component_scores ← compute_scores(data_normalized,
            rotated_components, selected_components);
        return component_scores;
    end
    else
    | return None;
    end
Function perform_k_means(data, num_clusters)
    centers ← initialize_centers(data, num_clusters);
    clusters ← assign_clusters(data, centers);
    while not convergence(centers, clusters) do
    | centers ← update_centers(clusters);
    | clusters ← assign_clusters(data, centers);
    end
    return clusters;
Function
    data ← load_data(file_path);
    variables ← ["Meta CQ", "Cog CQ", "Mot CQ", "Beh CQ",
        "Number of countries visited", "Education Abroad",
        "Cross-cultural courses attended"];
    pca_scores ← perform_PCA(data, variables);
    if pca_scores is not None then
    | optimal_num_clusters ← calculate_pseudo_F(pca_scores);
    | cluster_results ← perform_k_means(pca_scores,
        optimal_num_clusters);
    | output_results(cluster_results);
    end

```

Research limitations. The research is conducted on a unique sample collected by the 3CLab – Cross Cultural Competence Learning & Education. The specificity of the sample might limit the generalizability of the findings to other population. In this case, our analysis was confined to a sample of students, predominantly of Italian origin. Expanding the sample, both in terms of cultural diversity and by incorporating the analysis of managers and professionals could prove to be of significant interest for future research endeavors. Such an enlargement of the sample scope would not only enrich the understanding of CCC across different societal sectors but also enhance the generalizability and applicability of our findings to a broader context. Moreover, the selection of variables to be examined was guided by the existing literature on factors capable of influencing CCC, as highlighted in the discussion. However, this approach may not preclude the omission of additional variables that could be beneficial to consider. This algorithm serves as a comprehensive foundation, setting the stage for the future expansion and enhancement of a comprehensive supportive tool designed for cross-cultural management educators, anticipating continuous improvements and expansions in its functionalities.

Managerial implications. This analysis paves the way for the formulation of tailored developmental strategies, aimed at enhancing CCC of students on a cluster-by-cluster basis. The clusters, in terms of composition and size, can vary based on the sample being analyzed, but this methodological setup remains significantly useful for determining different groups

and customizing specific improvement strategies for them. Moreover, the defined algorithm makes it possible to automate these statistical steps to quickly determine the different clusters and thus define customized CCC development strategies. In doing so, the research offers practical implications for the design of targeted interventions to foster CCC among university students and for managers. The strategic application of this three-factor PCA and subsequent cluster analysis exemplifies a forward-thinking approach to educational research, affirming the importance of personalized learning pathways in the cultivation of global citizens equipped to navigate the complexities of a multicultural world.

Originality of the paper. To the best of the authors' knowledge, this represents a first attempt to apply PCA techniques and non-HCA in an algorithm to identify common patterns among students in order to develop and suggest future specific intervention strategies to increase CCC.

References

- AMATURO E. (2012), *Metodologia della ricerca sociale*, Torino: Utet
- ANG S., VAN DYNE L., KOH C., NG K.Y., TEMPLER K J., TAY C., CHANDRASEKAR N.A. (2007), "Cultural intelligence: Its measurement and effects on cultural judgment and decision making, cultural adaptation and task performance", *Management and organization review*, vol. 3, n. 3, pp. 335-371.
- BANDURA A. (2002), "Social cognitive theory in cultural context", *Applied psychology*, vol. 51, n. 2, pp. 269-290.
- Bandura A., Walters R.H. (1977), *Social learning theory* (Vol. 1), Prentice Hall: Englewood cliffs.
- BARBARANELLI C., D'OLIMPIO F. (2006), *Analisi dei dati con SPSS* (Vol. 2), Milano: Led.
- BARTLETT M.S. (1954), "A note on the multiplying factors for various χ^2 approximations", *Journal of the Royal Statistical Society. Series B (Methodological)*, pp. 296-298.
- CALIŃSKI T., HARABASZ J. (1974), "A dendrite method for cluster analysis", *Communications in Statistics-theory and Methods*, vol. 3, n. 1, pp. 1-27.
- CHIEFFO L., GRIFFITHS L. (2004), "Large-scale assessment of student attitudes after a short-term study abroad program", *Frontiers: The interdisciplinary journal of study abroad*, vol. 10, pp. 165-177.
- DECI E.L., RYAN R.M. (1985), *Intrinsic motivation and self-determination in human behavior*. San Diego: Academic Press.
- DWYER, M. M. (2004), "More is better: The impact of study abroad program duration", *Frontiers: The interdisciplinary journal of study abroad*, vol. 10, pp. 151-163.
- EARLEY P.C., ANG S. (2003), Cultural intelligence: Individual interactions across cultures.
- EISENBERG J., LEE H.J., BRÜCK F., BRENNER B., CLAES M.T., MIRONSKI J., BELL R. (2013), "Can business schools make students culturally competent? Effects of cross-cultural management courses on cultural intelligence", *Academy of Management Learning & Education*, vol. 12, n. 4, pp. 603-621.
- FOWERS B.J., DAVIDOV B.J. (2006), "The virtue of multiculturalism: Personal transformation, character, and openness to the other", *American Psychologist*, vol. 61, n. 6, pp. 581.
- GERTSEN M.C. (1990), "Intercultural competence and expatriates", *The International Journal of Human Resource Management*, vol. 1, n. 3, pp. 341-362.
- GOZZOLI C., GAZZAROLI D. (2018), "The cultural intelligence scale (CQS): A contribution to the Italian validation", *Frontiers in Psychology*, vol. 9, 1183.
- GRIFFITH R.L., WOLFELD L., ARMON B.K., RIOS J., LIU O.L. (2016), "Assessing intercultural competence in higher education: Existing research and future directions", *ETS research report series*, 2016, n. 2, pp. 1-44.
- GUDYKUNST W.B., TING-TOOMEY S., CHUA E. (1988), *Culture and interpersonal communication*. Sage Publications, Inc.
- HALL E.T. (1959), *The Silent Language*. 1981 reprint. Hall, E. T. (1976), *Beyond culture*. Anchor.
- JOHNSON J.P., LENARTOWICZ T., APUD S. (2006), "Cross-cultural competence in international business: Toward a definition and a model", *Journal of international business studies*, vol. 37, pp. 525-543.
- KAISER H.F. (1960), "The application of electronic computers to factor analysis", *Educational and psychological measurement*, vol. 20, n. 1, pp. 141-151.
- KAISER H.F. (1970), A second generation little jiffy.
- KAISER H.F. (1974), "An index of factorial simplicity", *psychometrika*, vol. 39, n. 1, pp. 31-36.
- LIKAS A., VLASSIS N., VERBEEK J.J. (2003), "The global k-means clustering algorithm", *Pattern recognition*, vol. 36, n. 2, pp. 451-461.
- MACNAB B.R., WORTHLEY R. (2012), "Individual characteristics as predictors of cultural intelligence development: The relevance of self-efficacy", *International Journal of Intercultural Relations*, vol. 36, n. 1, pp. 62-71.
- MURDOCK G.P. (1987), *Outline of Cultural Materials*/Murdock GP et al. Yale Anthropological Studies, n. 2, pp. 1-56.
- O'NEIL JR H.F., ABEDI J. (1996), "Reliability and validity of a state metacognitive inventory: Potential for alternative assessment", *The journal of educational research*, vol. 89, n. 4, pp. 234-245.
- RAMSEY J.R., LORENZ M.P. (2016), "Exploring the impact of cross-cultural management education on cultural intelligence, student satisfaction, and commitment", *Academy of Management Learning & Education*, vol. 15, n. 1, pp. 79-99.
- RAND I. (2015), *Cultural intelligence: The essential intelligence for the 21st century*.
- TRIANDIS H.C. (1994), *Culture and social behavior*.
- VAN DYNE L., ANG S., KOH C. (2015), "Development and validation of the CQS: The cultural intelligence scale", In *Handbook of cultural intelligence* (pp. 34-56), Routledge.
- VAN DYNE L., ANG S., NG K.Y., ROCKSTUHL T., TAN M.L., KOH C. (2012), "Sub-dimensions of the four factor model of cultural intelligence: Expanding the conceptualization and measurement of cultural intelligence", *Social and personality psychology compass*, vol. 6, n. 4, pp. 295-313.

Decoding the future: entrepreneurial visions on AI's role in international strategic decisions

BARBARA FRANCONI¹ ALICE AIUDI² YULIIA KYRDODA³ SIMONA AMERIO⁴

Abstract

In an era of rapid digital transformation, AI emerges as a pivotal technology that enhances decision-making processes, productivity, and competitiveness across industries, especially in the international context. The study aims to elucidate how entrepreneurs adopt AI technologies to navigate international strategic decisions (ISDs), focusing mainly on small and medium-sized enterprises (SMEs). The paper presents insights from interviews conducted with CEOs and export managers of an Italian manufacturing SME through a qualitative research approach. Findings suggest a nascent integration of AI within SMEs, primarily delayed by a lack of understanding and trust in AI's capabilities and the considerable investments required for technology adoption and personnel training. Despite these barriers, there is a growing interest in leveraging AI for international market analysis, strategic decision-making, and optimizing operational efficiencies. The paper underlines the critical need for educational initiatives and support mechanisms to increase AI adoption among SMEs, highlighting AI's potential to enhance SMEs' international competitiveness. The study contributes valuable perspectives to the intersection of AI and international business research, encouraging a future in which SMEs use AI to achieve international success and sustainable growth.

Keywords: artificial intelligence; international strategic decision; international market selection; small and medium size enterprises; internationalization.

Framing of the research. *In recent years, the multifaceted digital transformation process has become fundamental to the management debate (Zoppelletto et al., 2023). This phenomenon results from integrating modern technologies that enhance data gathering, archiving, and analysis. Such technologies encompass numerous innovations and state-of-the-art instruments, including robotic automation, additive manufacturing, artificial intelligence (AI), and the Internet of Things (IoT) (Strange et al., 2022). Among them, AI has emerged as a critical facilitator, providing essential opportunities for innovation and growth across a variety of industries by assisting in overcoming computational, logical, and even creative limits that have long limited human activities (Dwivedi et al., 2021; Kumar et al., 2022). The distinctive feature distinguishing AI from other technologies is its capacity to learn, build connections, and adapt, which enables AI systems to continuously enhance and evolve, leveraging the data and experiences they encounter (Brock & Von Wangenheim, 2019).*

A contemporary definition by the OECD (2022, p. 4) characterizes AI as “a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments with varying levels of autonomy”. The term “AI adoption”, that refers to its acceptance and utilization by society but also to its integration within an organization (Radhakrishnan & Chattopadhyay 2020), leading global companies, like Google and Microsoft, are progressively enhancing their products with AI facilitating widespread access to numerous technologies (Konnerth, 2023). Technologies made possible by AI can be employed to improve operations, products and services, and other aspects of the business, such as corporate performance. AI enables continuous operational refinement through data analysis and insight generation, providing organizations with benefits such as improved decision-making, increased productivity, and competitive advantage (Magistretti et al., 2019; Cheng et al., 2021; Denicolai et al., 2021). Through work automation, data-driven insights, and robust predictive analytics, AI integration helps organizations navigate complex global situations (Bag et al., 2021; Satheesh et al., 2020; Allal-Chérif et al., 2021; 2020; Wamba-Taquimdje et al., 2020).

¹ University of Urbino Carlo Bo.
e-mail: barbara.francioni@uniurb.it

² University of Urbino Carlo Bo.
e-mail: a.aiudi4@campus.uniurb.it

³ University of Trieste.
e-mail: yuliia.kyrdoda@units.it

⁴ University of Pavia.
e-mail: simona.amerio@unipv.it

In the context of international business (IB), AI is one of the major factors driving its evolution. It could be vital in solving intricate problems in this field, enabling businesses to employ adaptive algorithms for tasks previously requiring human intelligence (Ahn et al., 2022). According to Li et al. (2021), Shi (2022), and Zhu (2021), AI enables to anticipate market demands, reduce risks, optimize supply chain management, simplify logistics, and improve cross-border transactions, especially after the launch and public availability of Chat-GPT from Open AI as well as other comparable apps like Google's Bard and Microsoft's Bing. Regarding e-commerce, AI optimizes operations, improving efficiency, and delivers timely and accurate assistance to users by automating responses and interactions through Chatbot applications (Cheng et al., 2021). Due to its accessibility, AI has become more widely accepted and has generated interest in how it will affect the workplace and commercial environment (Menziez et al., 2024), also considering that its influence depends on the type used (Konnerth, 2023).

For these reasons, interdisciplinary research at the nexus of AI and IB is becoming more widespread (Jarrahi, 2018). In this stream of research, according to the OECD Trade Policy Paper (2022), AI has demonstrated the ability to change several facets of global trade and business models, including improved market selection and manufacturing location decision-making (Feliciano-Cestero et al., 2023). Although previous research has focused on the internationalization process of firms, research in the context of AI is comparatively limited (Ratten, Jones & Braga, 2024). Indeed, the study by Jones (2023) emphasizes a need for a comprehensive understanding of the application of AI and related technologies in effectively addressing IB challenges, including its sub-functional areas. Furthermore, the study underlines the necessity of elucidating the connections between AI-enhanced IB functions and other operational activities to optimize organizational outcomes.

For multinational companies (MNEs), adopting AI is becoming fundamental for enhancing productivity, competitiveness, and decision-making capabilities (Bag et al., 2021), especially in the international context. AI can improve MNEs' recognition of foreign opportunities and give them more access to international markets (Dillon et al., 2020). However, while MNEs may face fewer obstacles in handling digital transformation, AI presents fresh prospects for small and medium-sized enterprises (SMEs) by improving their competitiveness (Baabdullah et al., 2021). The benefits of AI implementation encompass the development of new business models and the enhancement of customer and entrepreneur experiences. Furthermore, AI could help SMEs to increase their profitability by advancing advertising, customer service, content writing, conversion optimization, predictive analysis, decision-making, wealth management, and fraud prevention (Enshassi et al., 2024). AI's ability to adapt and remain relevant over time enables SMEs to avoid the risk of becoming reliant on technology that may become outdated and expensive to replace, while also providing business solutions that are more sustainable and cost-effective (Castillo & Taherdoost, 2023).

The European Economic and Social Committee's 2021 study underscores the importance of increasing AI adoption among Europe's SMEs to reinforce their innovation capacities and facilitate their expansion into international markets. This strategic approach enables SMEs to compete effectively on a larger scale. In this respect, AI can help entrepreneurs with important international strategic decisions (ISDs), such as international market selection (IMS). There is a notable interest in this perspective, indicating the need for further research and the development of AI-powered models for market analysis, precise forecasting of foreign market trends, and formulating entry strategies (Menziez et al., 2024).

Notably, IMS is an essential and complex decision-making process where firms choose which markets to target and be present in (Francioni et al., 2015). The literature on international business, marketing, and management has long acknowledged the importance of this strategic decision (e.g., He et al., 2016). Indeed, the variety and diversity of international markets, and the difficulties businesses encounter when locating, assessing, choosing, and seizing opportunities overseas, highlight the strategic significance of IMS. The performance impact (Brouthers et al., 2009; Martín Martín et al., 2022) contributes to the consensus that well-informed IMS decisions result in favorable outcomes. Furthermore, according to Papadopoulos and Martín Martín (2011), there are expenses related to joining the incorrect markets as well as lost chances from not choosing better options. Other significant ISDs related to IMS include choosing an entry mode (Francioni et al., 2015) and, if required, choosing appropriate foreign partners, such as prospective clients, agents, and distributors. Consequently, the global success of SMEs may be significantly impacted by using AI in key ISDs (Denicolai et al., 2021; Kumar et al., 2022). In the footsteps of Fish (2006), who tackled the issue of IMS using AI computing and Kohonen Self-Organizing Maps, an example may be the successful application of Large Language Models, like Chat GPT, to identify an appropriate foreign market for a recently developed product. Like this, AI can help find possible cross-national segments' clusters. This is particularly useful for SMEs, which frequently lack thorough internationalization plans and methodical methods for market selection (Vissak & Francioni, 2013; Musso & Francioni, 2014), as they can use AI to speed up their expansion.

Despite the potential benefits, many SMEs have hesitated to embrace AI technologies due to challenges arising from their size, including limited financial resources and technical expertise (Silva & Gonçalves, 2022). There are numerous obstacles to applying AI in SMEs, including a lack of qualified employees, high expenses, a lack of expertise in the field, a lack of rules, technological issues, etc. Indeed, for a successful AI adoption, barriers related to trust, security, price, management support, and technical competencies need to be overcome (Enshassi et al., 2024).

SMEs frequently underestimate the importance of digital solutions, mainly because entrepreneurs are unaware of their possible advantages (McCann & Barlow, 2015). Therefore, more evidence is needed for SMEs to apply these technologies (Prem, 2019).

Purpose of the paper. Since research on the intersection of AI and IB is still in its early stages and requires a theoretical framework, it is a promising opportunity to explore this field, generating insights and encouraging discussion (Ratten, Jones & Braga, 2024). Therefore, given the overview of previous research, the purpose of this paper is to shed

light on the transformative potential of AI in the global economic landscape and to offer insightful information on how firms, especially SMEs, which are the backbone of the European economy⁵, can take advantage of this technological revolution.

For this reason, this contribution aims to answer the following research question: How do entrepreneurs adopt AI digital technologies in International Strategic Decisions?

Having explored how entrepreneurs in this stream adopt AI technologies in making ISDs, the research question of the present work will be addressed by conducting extensive qualitative research. In particular, based on the suggestion of Ratten, Jones, and Braga (2024), conducting interviews in international businesses will allow us to comprehend their perceptions and thoughts on AI adoption processes. This will be beneficial in proactively shaping future practices and enhancing SMEs' understanding of integrating AI into their ISDs.

Methodology. The study follows a qualitative approach to answer the research question about adopting digital AIs for international strategic choices. In particular, we employed a case study approach, which is highly relevant in international research (Eisenhardt, 1989; Ghauri, 2004; Yin, 2009). In the case of the current study, this methodological framework allows for exploring participants' perceptions regarding the processes of adopting AI in the context of ISD.

Consistent with previous studies (Rashid et al., 2019; Yin, 2009), we carried out the following steps: planning, design, preparation, data collection, analysis, and development of findings. In detail, after outlining the research objectives and questions, a research approach and data collection method have been defined. The interview protocol for the research was divided into three parts: first, a brief introduction aimed at gathering information on the company's profile, including its founding date, location, years of international involvement, and presence in foreign markets. The next set of questions focused on the adaptation of AI within the company to determine the current status of its implementation and managers' perceptions of it. A discussion of AI's potential value and use in various aspects of the international decision-making process, such as market selection, entry modes, partner selection, customer engagement, market performance analysis, logistics optimization, and risk management, followed this. Similar inquiries have been directed to the international sales back office.

Data on Italian manufacturing SMEs that have performed international activities have been collected for research purposes. The decision to target this specific group is due to the dominance of SMEs in the Italian economy, which are particularly well known for their proactive adoption of digital innovations (Matarazzo et al., 2021; Miroshnychenko et al., 2021). Data collection is in progress and, at the moment, primary data were collected through interviews with both the CEO and the export manager of IRON⁶. These interviews, which lasted between 30 and 45 minutes each, were recorded with the consent of the participants. Specifically, the business under analysis is an SME that specializes in contract metalworking operating in the Marche region's hinterland. The CEO, who over the years has taken on more and more responsibility for strategic business growth decisions, particularly those involving internationalization, was interviewed to achieve the goal of this research. Generally speaking, exports account for 20% of the company's turnover.

As the case study approach highlights the importance of integrating multiple sources of evidence, additional available materials, such as company reports and online resources, have been added. The secondary data was collected prior to the interviews to facilitate the data triangulation (Eisenhardt, 1989). In line with previous research (Pagani & Pardo, 2017), we considered reliability by elaborating a detailed case study protocol and performing member checks. This step ensures a higher degree of accuracy with less subjectivity in the interpretation of the findings and integrating the researchers' suggestions into the theoretical evidence (Ranfagni et al., 2021).

In the data analysis stage, we followed a ground-up approach based on extracting the theoretical themes from the obtained data from analyzed cases (Ghauri, 2004; Yin, 2009).

Results.

AI adoption - During the interview, the authors asked whether the company was already using AI directly or with the help of consultants. The CEO gave the following answer:

'At the moment, we are not yet using any kind of artificial intelligence tools directly. I am beginning to inform myself and to study what the tools might be and how I might incorporate them to take advantage of them. So, as a CEO, I am considering doing that in the future. I am working with an external consultant who deals with innovation and digitization, and with him, we are participating in calls to win funding related to the development of advanced digitization platforms but with a view to improving some processes that are more critical and problematic for us such as logistics (both internal and external). However, I am also thinking of involving others to implement AI-based solutions in internal strategic departments.'

Therefore, it appears that the company sees it as a potential future opportunity and that the current lack of usage is mainly attributed to the lack of information, as stated by the CEO:

'We have not used them yet because we do not have an in-depth knowledge of what these tools are and how they can be used, and therefore major investments would be needed both to have the same solutions and for the training that would have to follow.'

⁵ [https://single-market-economy.ec.europa.eu/smes_en#:~:text=Small%20and%20medium%2D-sized%20enterprises%20\(SMEs\)%20are%20the%20backbone,every%20sector%20of%20the%20economy](https://single-market-economy.ec.europa.eu/smes_en#:~:text=Small%20and%20medium%2D-sized%20enterprises%20(SMEs)%20are%20the%20backbone,every%20sector%20of%20the%20economy) [22/02/2024]

⁶ The name of the company has been anonymized to ensure confidentiality.

While asking about confidence in the effectiveness of AI, despite showing interest and mentioning some research on the topic, trust emerged as a crucial missing element to proceed further in AI adoption within the company. The CEO said:

'I am reading many articles and success stories related to the engineering industry that use artificial intelligence. However, I must say that I still do not totally trust them. I would also like to hear and evaluate how my competitors work and how they adopt them especially if they are really effective to get totally to trust and seriously think about adopting them in the company.'

However, this was different from the perspective of the Foreign Sales Back Office, who shared that not only is not thinking of adopting AI but also was never really interested in it.

Internationalization and AI - As the company has been internationally involved for more than eight years and operates in five different countries, the focus was on understanding how ISDs are currently made. The CEO explained that the company relies on word of mouth to acquire new customers, depending on foreign customers to refer the company's name to other partners. Even though AI is not currently utilized within the company, there is an expressed interest and potential for its adoption in the future. Referring to AI applications, the CEO said:

'We would be interested in implementing them because I realize there is potential. They could improve our ability to analyze international markets, which at the moment as mentioned is virtually absent, and make informed decisions based on data instead of relying solely on word of mouth from our customers.'

Regarding the benefits of integrating AI into ISDs, it was recognized by the CEO that:

'[...] there is potential to understand foreign markets better. I'm convinced that decisions should only be made if you have enough data and, in this case, since artificial intelligence relies precisely on large databases could help us make certainly more informed decisions at the very least. So maybe the risks associated with poor choices may decrease. [...] I think one of the great advantages of AI is the fact that we have available and continuously process a database that is beyond our capabilities (in terms of human capabilities) so certainly the analysis of foreign markets could be much more optimized. Then clearly the human capacity to be able to evaluate alternatives and make the most sensible decisions based on the information also takes over. Internationalization strategies in general would then be much more reasoned and objective.'

This positive perception toward AI used for ISDs, was also shared by the Foreign Sales Back Office, who said that being able to 'have forecasts of customer demand trends, would be much easier to coordinate production and logistics' improving the company's international business.

Finally, despite the CEO's interest and acknowledgment of the potential benefits associated with AI adoption, there is a clear and pressing need for a comprehensive understanding of AI applications and their integration within the company (e.g. *'[...] However, I would first like to be certain by studying more that these are the right tools for our needs.'*). Both the Foreign Sales Back Office and the company's CEO expressed a lack of knowledge about AI and admitted to being unfamiliar with its tools.

Based on these initial interviews, it is evident that this paper holds relevance and will prove valuable for SMEs seeking insights into adopting AI digital technologies. The topic remains somewhat obscure and needs further exploration. Through future interviews showcasing how some entrepreneurs are already incorporating AI into their ISDs, this paper will make a meaningful contribution.

Based on the comprehensive insights provided in the paper, it is evident that the adoption of AI holds transformative potential for SMEs, particularly in the context of ISDs. The first qualitative interviews reveal both the current state of AI adoption and the perceived opportunities and challenges it presents. While AI is recognized for its significant potential to enhance decision-making, productivity, and competitive advantage, its integration within SMEs still needs to be discovered. The primary barrier to adoption seems to be a lack of understanding and trust in AI technologies, alongside the high initial investment required for implementation and training.

The enthusiasm for AI's capabilities in improving international market analysis, entry strategy formulation, and overall strategic decision-making is tempered by concerns over the readiness of SMEs to embrace such technologies. The interviews highlight a desire to leverage AI to gain insights into foreign markets, optimize logistics, and reduce risks associated with poor strategic choices. However, more knowledge and trust should be gained regarding AI's effectiveness and application.

This discussion emphasizes the need to bridge the knowledge gap and increase SMEs' trust in AI technologies. Additionally, the study highlights how AI may help SMEs compete on an even playing field with larger rivals by providing affordable, flexible, and long-lasting business solutions. As such, it becomes crucial for policymakers, educational institutions, and industry leaders to collaborate in facilitating SMEs' transition into the digital era, thereby ensuring their competitive stance in the global marketplace. This paper contributes significantly to the ongoing discourse on AI and international business, emphasizing the urgent need for comprehensive understanding, strategic implementation, and supportive frameworks to harness AI's full potential in enhancing the global competitiveness of SMEs.

Research limitations. While this study provides new insights about AI integration into ISD processes, it is important to acknowledge several limitations. First, sampling limits the representativeness of the findings to this specific market, thereby limiting their generalizability. Second, the dynamics within the industry may be partially represented by the focus on manufacturing SMEs. Therefore, future research could explore the impact of AI integration across different sectors and geographical locations. In addition, the implications of AI integration can differ depending on the context and organizational settings. Thus, future research could examine how contextual factors such as sector-specific regulations, market dynamics, and technological infrastructures affect AI's integration. Lastly, while our study briefly touched on

managers' perceptions of AI, a deeper exploration of managers' attitudes, behaviors, and decision-making strategies towards AI adoption is needed. Future research could focus on the managerial competencies and skills required for the effective use of AI technologies in international decision-making processes, as well as the organizational factors that influence managers' attitudes toward integrating AI.

Managerial implications. The managerial implications that emerge from our findings can serve as a signal to internationally operated SMEs about the value of AI technologies. By understanding the process of AI adoption and its impact on international strategic decisions, firms can align international strategies and optimize operations, respectively. In addition, the findings may have implications for policymakers regarding support for SMEs in integrating AI technologies.

Originality of the paper. This study stands out for its focus on AI adoption in international strategy-making decisions, a relatively underexplored topic in the existing literature. Through a case study approach focusing on SMEs operating internationally, the study sheds light on the opportunities, challenges, and implications of AI integration. Emerging findings reveal the role of AI use from different perspectives within ISD processes, such as market selection, entry mode, partner selection, customer engagement, market performance, logistics, and risk management, providing insights that can inform future practices and strategies in these areas.

References

- AHN J., KIM J., SUNG Y. (2022), "The effect of gender stereotypes on artificial intelligence recommendations", *Journal of Business Research*, vol. 141, pp. 50-59.
- ALLAL-CHÉRIF O., SIMÓN-MOYA V., BALLESTER A.C.C. (2021), "Intelligent purchasing: How artificial intelligence can redefine the purchasing function", *Journal of Business Research*, vol. 124, pp. 69-76.
- BAABDULLAH A.M., ALALWAN A.A., SLADE E.L., RAMAN R., KHATATNEH K.F. (2021), "SMEs and artificial intelligence (AI): Antecedents and consequences of AI-based B2B practices", *Industrial Marketing Management*, vol. 98, pp. 255-270.
- BROCK J.K.U., VON WANGENHEIM F. (2019), "Demystifying AI: What digital transformation leaders can teach you about realistic artificial intelligence", *California management review*, vol. 61, n. 4, pp. 110-134.
- BROUTHERS L.E., MUKHOPADHYAY S., WILKINSON T.J., BROUTHERS K.D. (2009), "International market selection and subsidiary performance: A neural network approach", *Journal of World Business*, vol. 44, n. 3, pp. 262-273.
- CASTILLO M.J., TAHERDOOST H. (2023), "The impact of AI technologies on e-business", *Encyclopedia*, vol. 3, n. 1, pp. 107-121.
- CHENG X., BAO Y., ZARIFIS A., GONG W., MOU J. (2021), "Exploring consumers' response to text-based chatbots in e-commerce: The moderating role of task complexity and chatbot disclosure", *Internet Research*, vol. 32, n. 2, n. 496-517.
- BAG S., GUPTA S., KUMAR A., SIVARAJAH U. (2021), "An integrated artificial intelligence framework for knowledge creation and B2B marketing rational decision-making for improving firm performance", *Industrial marketing management*, vol. 92, pp. 178-189.
- DENICOLAI S., ZUCHELLA A., MAGNANI G. (2021), "Internationalization, digitalization, and sustainability: Are SMEs ready? A survey on synergies and substituting effects among growth paths", *Technological Forecasting and Social Change*, vol. 166, 120650.
- DILLON S.M., GLAVAS C., MATHEWS S. (2020), "Digitally immersive, international entrepreneurial experiences", *International Business Review*, vol. 29, n. 6, 101739.
- DWIVEDI Y.K., HUGHES L., ISMAGILOVA E., AARTS G., COOMBS C., CRICK T., WILLIAMS M.D. (2021), "Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice, and policy", *International Journal of Information Management*, vol. 57, 101994.
- EISENHARDT K.M. (1989), "Building Theories from Case Study Research", *The Academy of Management Review*, vol. 14, n. 4, pp. 532-550.
- ENSHASSI M., NATHAN R.J., SOEKMAWATI, USAMA A., HISHAMUDDIN I. (2024), "Potentials of artificial intelligence in digital marketing and financial technology for small and medium enterprises", *IAES International Journal of Artificial Intelligence*, vol. 13, n. 1, pp. 639-647.
- FELICIANO-CESTERO M.M., AMEEN N., KOTABE M., PAUL J., SIGNORET M. (2023), "Is digital transformation threatened? A systematic literature review of the factors influencing firms' digital transformation and internationalization", *Journal of Business Research*, vol. 157, 113546.
- FISH K.E. (2006), "An artificial intelligence approach to international market screening DSS", *Journal of International Technology and Information Management*, vol. 15, n. 2, 4.
- FRANCIONI B., MUSSO F., CIOPI M. (2015), "Decision-maker characteristics and international decisions for SMEs", *Management Decision*, vol. 53, n. 10, pp. 2226-2249.
- GHAURI P. (2004), *Designing and Conducting Case Studies in International Business Research*, Handbook of Qualitative Research Methods for International Business, Edward Elgar.
- JARRAHI M.H. (2018), "Artificial intelligence and the future of work: Human-AI symbiosis in organizational decision making", *Business horizons*, vol. 61, n. 4, pp. 577-586.
- JONES E. (2023), "Digital disruption: artificial intelligence and international trade policy", *Oxford Review of Economic Policy*, vol. 39, n.1, pp. 70-84.
- KONNERTH H. (2023), "The potential of AI in B2B e-commerce: a structured literature review", *Journal of International Scientific Publications*.
- KUMAR M., RAUT R.D., MANGLA S.K., FERRARIS A., CHOUBEY V.K. (2022), "The adoption of artificial intelligence-powered workforce management for effective revenue growth of micro, small, and medium scale enterprises (MSMEs)", *Production Planning & Control*, pp. 1-17.

- LI L., WANG Y., ZHANG Y. (2021), Analysis on the Application of Artificial Intelligence in Cross-Border E-commerce, 6th Annual International Conference on Social Science and Contemporary Humanity Development (SSCHD 2020), pp. 667-670, Atlantis Press.
- MAGISTRETTI S., DELL'ERA C., PETRUZZELLI A.M. (2019), "How intelligent is Watson? Enabling digital transformation through artificial intelligence", *Business Horizons*, vol. 62, n. 6, pp. 819-829.
- MARTÍN O. M., CHETTY S., BAI W. (2022), "Foreign market entry knowledge and international performance: The mediating role of international market selection and network capability", *Journal of World Business*, vol. 57, n. 2, 101266.
- MATARAZZO M., PENCO L., PROFUMO G., QUAGLIA R. (2021), "Digital transformation and customer value creation in Made in Italy SMEs: A dynamic capabilities perspective", *Journal of Business Research*, vol. 123, pp. 642–656.
- MCCANN M., BARLOW A. (2015), "Use and measurement of social media for SMEs", *Journal of small business and enterprise development*, vol. 22, n. 2, pp. 273-287.
- MENZIES J., SABERT B., HASSAN R., MENSAH P.K. (2024), *Artificial intelligence for international business: Its use, challenges, and suggestions for future research and practice*, Thunderbird International Business Review.
- MELTZER J.P. (2018), *The impact of artificial intelligence on international trade*, Brookings Institution, Thursday, December, 13, 2016.
- MIROSHNYCHENKO I., STROBL A., MATZLER K., DE MASSIS A. (2021), "Absorptive capacity, strategic flexibility, and business model innovation: Empirical evidence from Italian SMEs", *Journal of Business Research*, vol. 130, pp. 670–682.
- MUSO F., FRANCIONI B. (2014). International strategy for SMEs: Criteria for foreign markets and entry modes selection", *Journal of Small Business and Enterprise Development*, vol. 21, n. 2, pp. 301-312.
- OECD (2022), Artificial intelligence and international trade, <https://www.oecd-ilibrary.org/docserver/13212d3e-en.pdf?expires=1708692650&id=id&accname=guest&checksum=00B673CF480CAA897C7CA66326CD3A08>
- PAGANI M., PARDO C. (2017), The impact of digital technology on relationships in a business network, Post-Print (hal-02312032; Post-Print), HAL.
- PAPADOPOULOS N., MARTÍN MARTÍN O. (2011), "International market selection and segmentation: perspectives and challenges", *International marketing review*, vol. 28, n. 2, pp. 132-149.
- PREM E. (2019), "Artificial intelligence for innovation in Austria", *Technology Innovation Management Review*, vol. 9, n. 12.
- RADHAKRISHNAN J., CHATTOPADHYAY M. (2020), "Determinants and barriers of artificial intelligence adoption - A literature review", *IFIP Advances in Information and Communication Technology*, vol. 617, pp. 89–99.
- RANFAGNI S., RUNFOLA A., SARTI D. (2021), "Family firms between territory and internationalization: An authenticity-based perspective", *Entrepreneurship & Regional Development*, vol. 33, n. 7–8, pp. 555–579.
- RASHID Y., RASHID A., WARRAICH M.A., SABIR S.S., WASEEM A. (2019), "Case study method: A step-by-step guide for business researchers", *International Journal of Qualitative Methods*, vol. 18, 1609406919862424.
- RATTEN V., JONES P., BRAGA V. (2024), Artificial Intelligence in international business, Thunderbird International Business Review.
- SATHEESH M.K., SAMALA N., RODRIGUEZ R.V. (2020), "Role of AI-induced chatbot in enhancing customer relationship management in the banking industry", *ICTACT Journal on Management Studies*, vol. 6, n. 4, pp. 1320-1323.
- SHI J. (2022), *Research on optimization of cross-border e-commerce logistics distribution network in the context of artificial intelligence*, Mobile Information Systems.
- SILVA J.P., GONÇALVES J. (2022), "Process standardization: the driving factor for bringing artificial intelligence and management analytics to SMEs", *In 2022 10th International Symposium on Digital Forensics and Security (ISDFS)*, pp. 1-5.
- VISSAK T., FRANCIONI B. (2013), "Serial nonlinear internationalization in practice: A case study", *International Business Review*, vol. 22, n. 6, pp. 951-962.
- WAMBA-TAGUIMDJÉ S.L., FOSSO WAMBA S., KALA KAMDJOUJ J.R., TCHATCHOUANG WANKO C.E. (2020), "Influence of artificial intelligence (AI) on firm performance: the business value of AI-based transformation projects", *Business Process Management Journal*, vol. 26, n. 7, pp. 1893-1924.
- YIN R.K. (2009), *Case Study Research: Design and Methods*, SAGE.
- ZHU J. (2021), "Application analysis of artificial intelligence technology in the development of cross-border e-commerce", *In 2021 3rd International Conference on Artificial Intelligence and Advanced Manufacture*, pp. 1112-1116.
- ZOPPELLETTO A., ORLANDI L.B., ZARDINI A., ROSSIGNOLI C., KRAUS S. (2023), "Organizational roles in the context of digital transformation: A micro-level perspective", *Journal of business research*, vol. 157, 113563.

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Track 4
Management Case Studies

A Public Service Logic perspective applied to health and social welfare services provided to the elderly: the case of the VIII Municipality of Rome

MAGDA TOUTI¹ FABIOLA SFODERA² LUCA DEZI³

Abstract

With the increase of the elderly population, it is necessary to ensure effective and efficient delivery of health and welfare services to this group of people and to be able to meet their requirements. In this scenario, Public Administration plays a key role in providing support and helping to reduce the burden on the hospitals. By adopting a Public Service Logic perspective on a single case study, the aim of this research is to understand how the integration of resources occurs and to identify the key areas of value creation and where improvements are needed. In the preliminary results, an initial mapping of processes is presented, which provides an understanding of what services are provided, how they are accessed, how they are delivered and who are the key players in this process. This work has significant implications, both theoretical and managerial.

Key words: Public Administration; Public Service Logic; Elderly population; service management; Public Service Ecosystem

Framing of the research. Elderly population, in accordance with the definitions of the World Health Organization (WHO), indicates individuals aged 65 years or older.

Italy's population has a median age of 48.4 years, the oldest in Europe in 2023. Italy ranks second in the world, after Japan, in terms of elderly population (OECD, 2023)

According to the 2023 Annual Report of the National Statistics Institute (Istat), which provides an overview of the demographic, economic and social situation in Italy, the resident population of Italy on 1 January 2023 will be 58.851 million. The population over 65 years of age amounts to 14.177 million individuals and constitutes 24.1 per cent of the total population. The old age index, which measures the number of people aged 65 and over for every 100 young people aged 0-14, has increased from 187.6% in 2021 to 193.1% in 2022, in line with the general population trend.

The population over sixty-five is expected to reach 34.5% of the Italian population in 2050 (ISTAT). With an ageing population and longer life expectancy, the proportion of dependent elderly people is set to increase (Cochrane et al., 2016), requiring more and more health and social welfare services. In fact, the lengthening of life expectancy poses several challenges for the nation, requiring the active participation of all entities to ensure effective delivery of the required services. According to Brunzini et al. (2022), ageing leads to increased costs for both the Italian National Health System (NHS) and the private citizen. For the National Health System, the difficulties mainly concern direct costs for medical care, rehabilitation treatment and hospitalisation, while the citizen is burdened by the costs of prolonged care by caregivers and, in some cases, placement in care facilities (Brunzini et al., 2022). Although the allocation of healthcare resources varies considerably between different Western countries, according to Petrelli et al. (2010), overall, healthcare resources are allocated based on the population's actual need, which is closely linked to their health. In Italy, since the 1990s, the National Health Service has been reformed with the aim of providing equal health care for all, financed through general taxation. Over the years, to facilitate its management, more responsibility was attributed to regional health authorities (Petrelli et al., 2010). As a result, multiple governance models have emerged, with differences in the composition of public and private providers, the number and size of local health units and the autonomy of public hospitals. Since 2000, the regions have also been coordinating, planning, and monitoring social services and, to avoid significant differences in the services provided, the 2001 constitutional reform defined the basic principles and services to be provided in all regions, including health and social welfare services (Cepparulo & Giuriato, 2022). Among the interventions implemented, the "health" ministerial decree of 2007 introduced the Single Point of Access in Italy. The

¹ Sapienza University of Roma
e-mail: magda.touti@uniroma1.it

² Sapienza University of Roma
e-mail: fabiola.sfodera@uniroma1.it

³ Sapienza University of Roma
e-mail: luca.dezi@uniroma1.it

Single Point of Access is a structure designed to simplify access to the system for citizens through the integration of health and social welfare activities in a broad sense. It is responsible for the reception of requests for assistance, followed by an initial assessment of the need to propose to the citizen appropriate services with respect to his or her needs and the activation of the relevant services (Notarnicola et al., 2015). Nevertheless, although these systems were created with the intention of providing public services with universal coverage, increasing financial constraints and social pressures are leading to a change in the delivery of these services. Indeed, to date, private and non-profit organisations, together with families, are increasingly involved in the planning and delivery of social care services (Longo et al., 2015). To address these challenges, it is necessary to provide sufficient health and welfare services, promote a healthy lifestyle and create a social and physical environment that encourages active ageing. Within this context, public administration (PA) plays a key role in ensuring the provision of effective, efficient, and quality services. This study focuses on the health and social welfare services provided to the elderly by the Municipality VIII of Rome where by health and welfare services we refer to: “the professions that support health personnel in the administration of therapies and in the surveillance and protection of hygiene and public health safety; they carry out physical and manual assistance by performing, within the scope of their competences, prevention, treatment, rehabilitation and functional recovery; they carry out assistance interventions aimed at satisfying the primary needs of patients; they take care of the psychological, motor, recreational and health development of children” (ISTAT). The aim of this study is to identify the actors involved and the key areas of value creation and understand how the integration of resources occurs adopting a Public Service Logic (PSL) perspective (Osborne, 2013).

In the management literature, scholars have highlighted the potential of Service Dominant Logic (SD-L) in promoting the development of more effective services in the public sector (Westrup, 2018) and have proposed a new stream of research called PSDL (Public Service Dominant Logic) or PSL (Public Service Logic) (Ojasalo & Kauppinen, 2024). Over the years, SD-L (Vargo and Lusch 2004, 2008) has been widely applied in the disciplines of management and marketing as a theoretical basis for understanding market phenomena, sectors (Vargo & Lush, 2017) and services (Maglio and Spohrer, 2008). According to this perspective, value is uniquely determined by the customer or user (Vargo & Lusch, 2004) and the role of the company is to offer value propositions. In this reciprocal relationship, producers use their knowledge and skills in production, while customers apply them in the use of the product or service, the “value in use”, and in its evaluation based on context as well as previous experience, the “value in context” (Osborne, 2018). According to this perspective, public services should be evaluated by their ability to facilitate the creation of value in the lives of public service users and other stakeholders (Osborne et al., 2021). This approach incorporates the principles of Service Dominant Logic and is built on four premises (Osborne et al., 2013):

1. Both citizen and user are essential stakeholders in public policy and public service delivery processes, and their engagement in these processes adds value to both.
2. A public service-dominated marketing approach is essential for: transforming the strategic intent of a public service into a service promise or offering; defining the expectations of service users and employees; and providing a solid framework for developing trust in public service delivery.
3. Co-production of the service is an important element of public service delivery and design, placing the experiences and knowledge of the service user at the centre of effective public service design and delivery.
4. A dominant approach to public service management and operations is necessary to ensure efficient and effective public services and to deliver on promises.

Recently, Ojasalo & Kauppinen (2024) proposed different levels of the public service ecosystem. In their framework, the emphasis and interpretation of public value is defined by elected representatives, who belong to or are authorised by the local and regional, national, and international levels (Ojasalo & Kauppinen, 2024):

1. **Citizen level:** The term, citizen level, refers to individual citizens of a public service ecosystem, who are consumers and users of public services. The difference is that while consumers use public services by paying for them directly or through taxes or other means of public financing, users, who may or may not pay for the use of services, are those who actively benefit from them. Public value is the ratio of benefits to sacrifices, which is perceived and defined individually by the citizen. The emphasis is on the individual value of the users of the service provided by the public organisation.
2. **Organisational level:** the integration of resources within an organisation that produces a public service. It can also include digital platform service providers and communities.
3. **Local and regional level:** the integration of resources and their orchestration at the regional level. It is often realised or strongly influenced by the local regional government and its collaborative arrangements. Actors in orchestration typically include, but are not necessarily limited to, organisations or individuals responsible for policy and governance in cities, municipalities, and regions.
4. **National level:** the integration of resources and their orchestration at the national level. It is often made or strongly influenced by the national government.
5. **International level:** the integration of resources and their orchestration that occur in collaboration between nations.

In public service ecosystems, a comprehensive view is undertaken encompassing all individuals, technologies and institutions involved in the creation and delivery of value generated through the public system and adjacent private stakeholders' (Petrescu, 2019).

Purpose of the paper. By identifying and analysing the services provided to the elderly, the objective of this study is to identify the actors involved and the key areas of value creation and understand how the integration of resources occurs through the lens of Public Service Logic perspective. To achieve this objective, we define the following research questions:

RQ1: What are the areas of value creation in local services provided to the elderly in the Public Service Logic perspective?

RQ2: Who are the actors involved and how do they integrate with each other?

The study is developed in two phases. The first is mapping the services offered by the Third Age Area of Municipality VIII of Rome. The second phase consists of interviews with the ecosystem actors involved to understand their functions, roles, tasks, and modes of interaction in the production and service delivery process.

Methodology. To achieve the research objective, this study employs a single case study approach (Hunziker & Blankenagel, 2024). Case studies can be defined as research investigations that examine contemporary phenomena within their real-life context and support researchers in addressing “questions about the how or why of a set of events over which the researcher has little or no control” (Yin, 1994). Accordingly, the case study allows for a holistic representation of the unit of analysis in its environmental context containing all relevant aspects, elements, and relationships. It is a valid research design as it enables researchers to understand developments, processes and cause-and-effect relationships in a particular business and social context, while allowing them to approach real-life situations and directly test perspectives and viewpoints on the phenomena under observation (Hunziker & Blankenagel, 2024). The protocol for data collection and analysis is organized into the following sequential steps.

a) Case selection

The registered population of Rome as of 31 December 2022 is 2,813,544. The phenomenon of population ageing continues to increase Rome's average age, and, over the last decade, it has increased by 2 years, from 44.6 years in 2013 to 46.6 years in 2022. Rome is distributed into fifteen municipalities, each with its own characteristics in terms of territorial extension and population. The most populous municipality is the municipality VII, with 311,500 inhabitants, while the least populous is the municipality VIII with 128,417 inhabitants. The latter will be examined in this study as it is interesting to note that, although it is the least populous municipality, it is also one of the “oldest” (along with municipalities I, II and XV). According to the data provided by the official website of the city of Rome, the municipality VIII has an old age index of 233.8. In other words, for every 100 individuals aged between 0 and 14, there are approximately 233.8 people aged 65 and over. The importance of effective and efficient management of services for the elderly in such a context is evident.

Figure 1: Map of the municipalities in Rome



Source: Official City of Rome website

b) Data collection

In accordance with Yin's (2004) prescriptions, data on the case were collected from various sources, both online and offline:

1. Secondary sources: mapping by relevant data and information on the phenomenon under investigation. These sources included the City of Rome website, academic articles, industry reports, including national, regional and municipal laws, internal memos and regulations.
2. Interviews with the responsible personnel: semi-structured interviews with staff's manager and managers of the Third Age Area⁴ of Municipality VIII were conducted to obtain an in-depth understanding of the organisational structure implemented for the delivery of health and social care services to the elderly.

⁴ The Third Age Area is the department within the Municipality VIII in charge of managing services for the elderly. The office is responsible for the provision of home services and financial support and is responsible both for the activation and monitoring of services.

c) **Data analysis**

To construct the case study, the researchers first conducted process mapping. At this stage, the aim is to define Municipality VIII's organizational structure by identifying which services are provided in the flow of activities and decisions within a workflow related to delivering public services per the principles of the Public Service Logic (Bowles & Gardiner, 2018). Process mapping is valuable for visualizing and improving service processes (McLaughlin et al., 2014).

Results. The research is still in progress therefore the first results are described below. Semi-structured interviews with the staff in charge of the Third Age area and the analysis of secondary sources revealed that the health and social welfare assistance in Rome's Municipality VIII offers five typologies of services, of which a brief description is given below with the aim of understanding the process through which the elderly person, or a member of his or her family, becomes acquainted with the services of the municipality until the moment the service is provided.

Protected discharge service

The protected discharge service is an integrated social home care service activated by the hospital to provide home care for the elderly after hospital discharge. The service is activated immediately after discharge from hospital and lasts 60 days. The team providing this service consists of health workers, for medical and nursing care, and an operator from one of the cooperatives accredited by the municipality who provides support for daily activities (e.g. personal care, hygiene, dressing, small errands, going to the doctor, preparing meals, etc.). A maximum of 7, 30 hours per week can be provided, which are distributed according to the person's needs.

S.A.I.S.A.

S.A.I.S.A is a service that lasts forever from the moment it is activated. This service, similar to the previous one, that focuses on maintaining and recovering the elderly person's autonomy and self-sufficiency. The access requirements are:

- women over the age of 60 and men over the age of 65.
- be in possession of Civil Disability,
- have a severe disability, Law 104/1992⁵, Article 3 paragraph 3.

Specifically, it is a service that provides support for personal care, both at home and elsewhere, help in carrying out activities of daily living, socialisation activities, development and support of personal and social autonomy.

Severe disability

This service is an aid for the elderly and for people with disabilities. It is aimed at the entire disability sector from 0 to 1,000. the contribution is designed for elderly persons who are in one of the conditions expressly provided by the ministerial decree. The requirements are:

1. To be recognised under Law 104/1992, art. 3.
2. Benefit from an attendance allowance.

The service is available under three forms:

- Direct: direct home care through cooperatives
- Indirect: family assistance refund
- Caregiver support

The allowance for direct assistance and caregiver support ranges from a minimum of EUR 400 to a maximum of EUR 700, while indirect assistance ranges from a minimum of EUR 500 to a maximum of EUR 800. The variability depends on the ISEE (Equivalent Economic Situation Indicator) and on whether the user uses other services (e.g. home care).

Alzheimer's day care centre

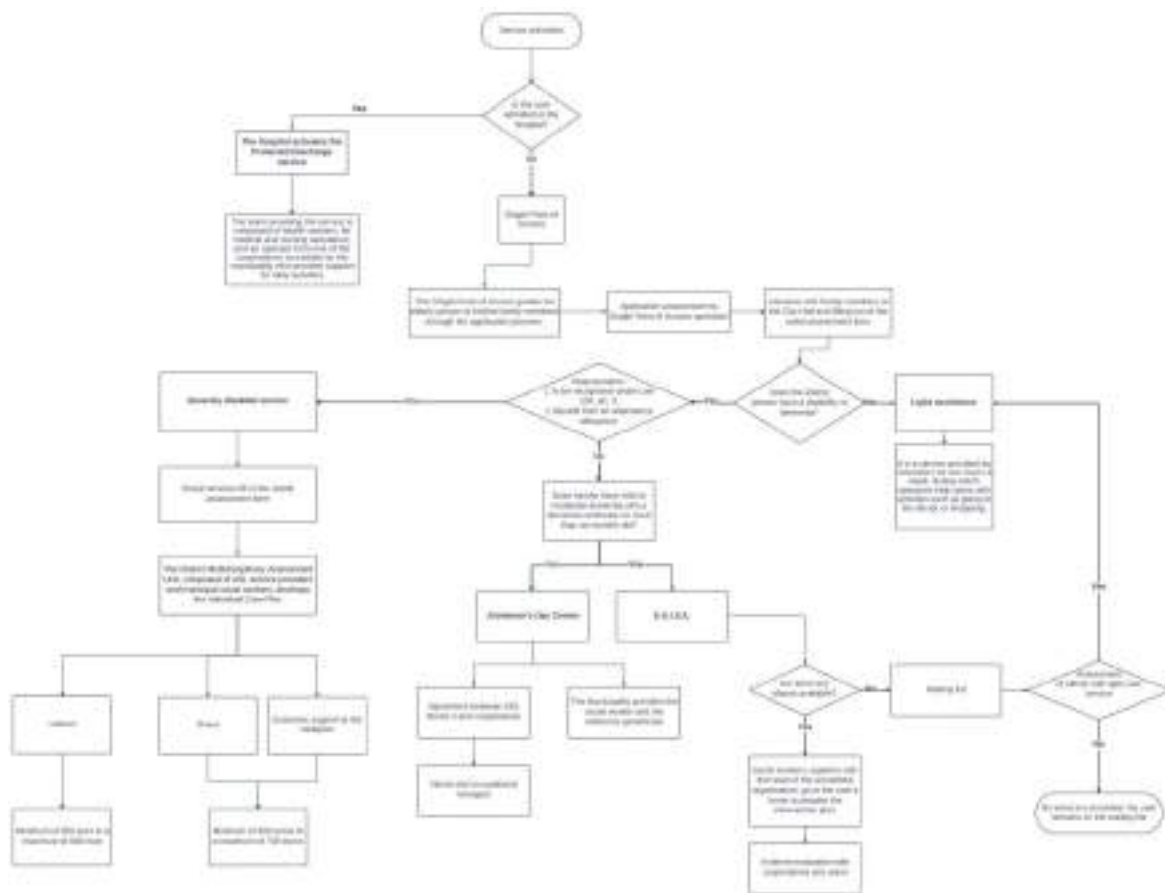
The Alzheimer's Day Centre is a centre for people with Alzheimer's and other mild or moderate dementias. To qualify for admission to the centre, the person must have a dementia certificate that is no more than six months old. The centre accommodates nineteen users from the municipality and is attended 2 or 3 times a week, from morning to afternoon, for 8 hours a day. A transport and meal service are provided for those who request it. Various professional figures are involved: psychologists, professional educators, physiotherapists, occupational therapists, nurses, OS. The centre is attended for as long as the person is able to benefit from the proposed activities, mainly those aimed at delaying the progression of the disease and exercising memory. Various workshops are also carried out (handicrafts, music, etc.), geared towards exercising the person's cognitive functions and his or her orientation in time and space (e.g. carrying out themed activities during Christmas or organising the centre's spaces in a specific way).

Light assistance

This is a service provided by volunteers for two hours a week, during which operators help users with activities such as going to the doctor or shopping. This service is useful because it enables to monitor the health conditions of that segment of the elderly with greater autonomy and self-sufficiency.

⁵ Law 104/1992 is the reference law enacted by the Italian Parliament for individuals with "a physical, psychic or sensory impairment, stabilised or progressive, which causes learning, relational or integration difficulties".

Figure 2: Process map of health and social welfare services provided by the VIII municipality of Rome



Each of the services offered has different access requirements and forms of provision. For each service, the process starts from the Single Point of Access. Specifically, Single Point of Access guides the elderly person or its family members to submit the application. Subsequently, the application is assessed by the operators, and an interview with the family members is held at the city hall. Once the documentation regarding the application and requirements is received, a home visit is conducted. During this visit, a "needs assessment form" is used to provide an overview of the elderly person's situation in terms of level of autonomy and self-sufficiency (e.g. if they are able to dress themselves), family situation (e.g. if they live alone or not), financial situation and architectural barriers. An evaluation form is completed and used to decide whether and what type of service to activate and how many hours of assistance are needed. Finally, a project is drawn up, the 'intervention plan', containing the objectives, interventions, times, days and costs.

The results are expected to emphasise the significant role of the Single Point of Access (PUA) as a crucial distribution hub for the various service areas. From the process map it emerges that there is no upstream control, but several ongoing controls whose modalities are not clear. Indeed, the services are also provided by third parties - cooperative operators and volunteers selected by them - without there being rigorous controls to ensure quality. This is a relevant aspect as the volunteer is in close contact with the elderly person, i.e. the most important area of value creation. However, the function is delegated to a volunteer selected by a provider, meaning that there is a significant economic investment on a service that is delegated to the ethics of the provider who is free to select volunteers without strict constraints. In terms of theoretical implications, the findings are expected to emphasise the need to adopt an ecosystem approach within public services that considers different levels of analysis (citizen level, organisational level, local and regional level, national level, international level) by developing the concept of service ecosystems in the Public Service Logic Theory. Furthermore, the article addresses the call for more studies on value co-creation in service ecosystems and the role of public service providers as value facilitators (Osborne 2018).

Moreover, the services can be distinguished into (van der brug et al., 2019): on-demand services, in which customers have access to a service immediately when experiencing a need anywhere and anytime, and on-request services, in which it is not certain that the service requested will be immediately available. Therefore, in this case, the flow is activated when there is a request, but the service can also be delivered at a later time. In this study, the services provided by the municipality VIII of Rome are on-request. From a management point of view, the on-demand modality allows for greater programmability of services as it does not require immediate access to the service to anyone who requests it. However, the presence of approximately 250 people on the waiting list indicates a high degree of inefficiency in public service delivery.

Research limitations. *The main limitations of this study are related to the difficulty of gathering information in a context that requires access to data from different sources, i.e. local authorities and cooperatives working with them, health institutions and social welfare organisations. The Italian Health Service perspective can influence the number and type of actors in the ecosystem based on normative provisions. Furthermore, the complexity of the ecosystem and the multiplicity of actors involved make it difficult to accurately design all the stages without having interacted with all the actors, leading to additional details that may be relevant not being considered in the process. A further limitation concerns the use of the case study and the generalisability of its results to other contexts, especially those in which the public service delivery system is very different from the Italian context.*

Managerial implications. *The study has important implications for both public management theory, public policy, and the management and delivery of public services. The actors affected are numerous and include policy makers, health professionals, managers, and public and private organisations (both local and national) involved in the management and delivery of services for older people.*

Originality of the paper. *The originality of the study lies in the adoption of the Public Service Logic and its integration with process mapping to identify areas of value creation in the public service delivery process and improve its efficiency and effectiveness to meet the growing challenge of an ageing population.*

References

- BOWLES D.E., GARDINER L.R. (2018), "Supporting process improvements with process mapping and system dynamics, International Journal of Productivity and Performance Management", *Emerald Group Publishing Limited*, vol. 67, n. 8, pp. 1255-1270, November.
- BRUNZINI A., CARAGIULI M., PAPETTI A., GERMANI M. (2022), "Clinical and social well-being for older adults: a personalised product-service assignment based on user's needs", In: *Tareq Ahram and Redha Taiar (eds) Human Interaction & Emerging Technologies (IHET 2022): Artificial Intelligence & Future Applications*. AHFE (2022) International Conference. AHFE Open Access, vol 68. AHFE International, USA.
- CEPPARULO A., GIURIATO L. (2022), "The residential healthcare for the elderly in Italy: some considerations for post-COVID-19 policies", *Eur J Health Econ*, vol. 23, pp. 671-685.
- COCHRANE A., FURLONG M., MCGILLOWAY S., MOLLOY D.W., STEVENSON M., DONNELLY M. (2016), "Time-limited home-care reablement services for maintaining and improving the functional independence of older adults", *Cochrane Database of Systematic Reviews* 2016, Issue 10. Art. No.: CD010825.
- HUNZIKER S., BLANKENAGEL M. (2024), *Research Design in Business and Management: A Practical Guide for Students and Researchers* (2nd ed.), Springer Gabler Wiesbaden.
- ISTITUTO NAZIONALE DI STATISTICA (2023), Rapporto annuale 2023 - La situazione del Paese. Istat
- LONGO F., NOTARNICOLA E., TASSELLI S. (2015), "A framework to assess welfare mix and service provision models in health care and social welfare: case studies of two prominent Italian regions", *BMC Health Serv Res.*, vol. 15, p. 152
- MAGLIO P.P., SPOHRER J. (2008), "Fundamentals of service science", *Journal of the Academy of Marketing Science*, vol. 36, n. 1, pp. 18-20.
- NOTARNICOLA E., LONGO F., FOSTI G., PIRAZZOLI A. (2015), *I Punti Unici di Accesso (PUA) nel settore socio-sanitario: una riflessione teorica e una proposta per la progettazione dei PUA*, MECOSAN, pp. 51-66.
- OJASALO J., KAUPPINEN S. (2024), "Public Value in Public Service Ecosystems", *Journal of Nonprofit & Public Sector Marketing*, vol. 36, n. 2, pp. 179-207.
- OSBORNE S.P. (2018) From public service-dominant logic to public service logic: are public service organizations capable of co-production and value co-creation?", *Public Management Review*, vol. 20, n. 2, pp. 225-231.
- OSBORNE S.P., NASI G., POWELL M. (2021), "Beyond co-production: value co-creation in public services", in *Public Administration* <https://doi.org/10.1111/padm.12718>
- OSBORNE S.P., POWELL M., CUI T., STROKOSCH K. (2021), "New development: 'Appreciate-Engage-Facilitate'-The role of public managers in value creation in public service ecosystems", *Public Money & Management*, vol. 41, n. 8, pp. 668-671.
- OSBORNE S.P., RADNOR Z., NASI G. (2013), "A New Theory for Public Service Management? Toward a (Public) Service-Dominant Approach", *The American Review of Public Administration*, vol. 43, n. 2, pp. 135-158.
- PETRELLI A., PICARIELLO R., COSTA G. (2010), "Toward a needs based mechanism for capitation purposes in Italy: the role of socioeconomic level in explaining differences in the use of health services", *Int J Health Care Finance Econ.*, vol. 10, pp. 29-42.
- PETRESCU M. (2019) From marketing to public value: towards a theory of public service ecosystems", *Public Management Review*, vol. 21, n. 11, pp. 1733-1752.
- ROME MUNICIPALITY. (2024), *The population of Rome*. Retrieved march 2023, from <https://www.comune.roma.it/>
- VAN DER BURG R.J., AHAUS K., WORTMANN H., HUITEMA G.B. (2019), "Investigating the on-demand service characteristics: an empirical study", *Journal of Service Management*, vol. 30, n. 6, pp. 739-765.
- VARGO S.L., LUSCH R.F. (2004), "Evolving to a new dominant logic for marketing", *Journal of Marketing*, vol. 68, pp. 1-17.
- VARGO S.L., LUSCH R.F. (2008), "Service-dominant logic: Continuing the evolution", *Journal of the Academy of Marketing Science*, vol. 36, n. 1, pp. 1-10.
- VARGO S.L., LUSCH R.F. (2017), "Service-dominant logic 2025", *International journal of research in marketing*, vol. 34, n. 1, pp. 46-67.
- WESTRUP U. (2018), "The potential of service-dominant logic as a tool for developing public sector services: A study of a Swedish case", *International Journal of Quality and Service Sciences*, vol. 10, n. 1, pp. 36-48.
- WORLD HEALTH ORGANISATION (2010), *Definition of an older or elderly person*. Geneva: Switzerland.
- YIN R.K. (1994), *Case study research: Design and methods* (2nd ed.), Sage Publications.

Interpreting long-lasting corporate crises according to stakeholders' perspective: evidence from the ILVA experience

SILVIA COSIMATO¹

Abstract

The aim of the short paper is to provide a holistic overview of corporate crises by investigating how different stakeholders and interests are impacted by a corporate crisis over time. To offer a multi-stakeholder and longitudinal analysis of corporate crises, an exploratory approach based on extreme case study is adopted. The research examines the case of an Italian company whose crisis extended over a long period and presented multiple dilemmas to decision-makers: the ILVA. Using a content analysis, we examine how corporate communication, newspapers, and press releases have approached the ILVA crisis over time. The results show how strategic priorities have been established and renegotiated over time, as new issues have emerged, demonstrating the difficult to achieve a balance among different stakes, especially in the face of economic pressures and regulatory challenges, and that environmental and health issues should be considered together with the economic conditions.

Keywords crisis management, stakeholder, sustainability, case study

Framing of the research. Crises are complex events stemming from long-term disruptive processes that challenge corporate legitimacy and threaten firm performance, involving several different stakeholders (O'Reilly et al., 2015; Williams et al., 2017; Li et al., 2023). These disruptive and often unexpected events tend to challenge companies' legitimacy, creating uncertainty and a certain incongruence between the desired corporate image and the image that stakeholders perceive (Seeger et al., 2003; Sellnow and Ulmer, 2003). Drawing upon the extant literature, corporate crises have been defined as a pathological situation in a company's life that endangers its survival (Sciarelli, 2011), or as "the extreme consequence of the increasing decline of corporate profitability" (Abatecola, 2012, p.862). However, it is worth noting that most of the research focuses on either the causes of the crisis or the most effective coping strategies, primarily from an economic or financial point of view. Moreover, research primarily focuses on the definition and the analysis of corporate crisis antecedents, highlighting that anticipating a corporate crisis is not an easy target to hit, due to multiple and often intertwined macro-environmental, industrial, and/or firm-specific factors (Ou and Wong, 2021). Several variables (e.g., the nature of the antecedent or triggering event, the involved stakeholders, etc.) contribute to defining the way scholars and practitioners approach these crises (Heller and Darling, 2011), even though they tend to consider information asymmetries between a firm and its stakeholders one of the most common threads in existing studies on the topic (OuYang et al., 2017).

Coombs (1999) defines crisis management as "a process of moving from the unknown to the known through information gathering and processing" (p.127). This definition highlights the information- and knowledge-intensive nature of crisis management; thus, to enact efficient and effective processes, it needs the right information to inform corrective actions (Coombs, 2010). Information is essential for supporting managers in making sense of a crisis, focusing on its causes and possible solutions. Moreover, to manage critical situations, efficiency (which comes from the ability to maximize the relation between operating and liquidation value, avoiding unnecessary value destruction and minimizing the related costs) and equity (which emerges when the different interests and priorities are respected) are essential to make a company able to navigate the crisis and survive (Franceschi and Tedeschi, 2014). It follows that one of the main challenges of the extant research is understanding how to approach and fix corporate crises, mainly through crisis management mechanisms, essential to make companies able to protect their and their stakeholders' interests making their value creation and sharing processes sustainable over time (Ponis and Koronis, 2012). Being able to prevent or "manage a corporate crisis is pivotal to a corporation's long-term success" (Kim and Atkinson, 2014 pages 662).

Overall, existing studies focus on the financial and economic aspects of corporate crises and the tools to fix them. This is unfortunate as they offer an incomplete portrait of this complex phenomenon whose implications extend beyond the economic or financial domain and involve environmental or social issues. This is a significant limitation, especially considering recent theories that emphasize that the firm is a place where stakeholders' heterogeneous align one another. For instance, crises involving large companies display that their negative consequences not only impact the shareholders, creditors, or the employees, but also extend to the supply chain and the local communities where corporate facilities are

¹ University of Napoli Federico II
e-mail: silvia.cosimato@unina.it

located (Janssen et al., 2015). In other words, the economic consequences of the crisis of a large company go far beyond the estimated losses in accounting documents and restructuring plans. The consideration of such effects often induces governments to intervene and assist companies in crisis not only to revive them and restore economic and financial balance but also their competitiveness (Köhler, 2022). Such interventions are justified by collective interests — or the relevance of the sector involved, the impact on employment levels, including those linked to the supply chain, and the well-being of local communities—that overlap with those of the shareholders of the company in crisis. In such circumstances, State intervention seems to represent a solution reconciling economic and social sustainability. However, some cases of large Italian companies in crisis suggest that such intervention has not always produced benefits for everyone, and in any case, the hoped-for results. In particular, stories of public intervention in companies in crisis that have lasted for decades testify to the difficulties of managing a successful restructuring process. In the Italian context, experiences such as those of Alitalia or ILVA indicate the difficulty of finding a balance between interests (economic, social, and environmental) in different time horizons, the short, medium, and long term.

The above considerations suggest a holistic investigation of corporate crises with the considerations of how tensions among different stakeholders and stakes are solved over time (Sun, 2023). Following Coombs (1999), we highlight the information- and knowledge-intensive nature of crisis management, and we contend that to enact efficient and effective processes, gaining the right information and, therefore, the right knowledge at the right time, place, is key to solving a crisis (Coombs, 2010; Sciarelli, 2011). More specifically, we highlight that making sense of corporate crisis' causes, and to take a step forward in its resolution it is essential to consider their potential or real impact on the involved actors. In other words, information is essential to develop and enact specific recovery strategies, and related action plans, such as recovery and continuity plans to restore the conditions of business, economic, and financial equilibrium (Sahebjamnia et al., 2015; Tron et al., 2018). These plans represent some of the possible operational tools that a company can use for managing a corporate crisis, and in doing so avoiding failure. Relatedly, communicating the required changes is an inherent component of a crisis management plan.

Purpose of the paper. This work has been conceived as a first step of a major research on the corporate crises that have and are still affecting Italian privatized large companies inspired and directed by the Professor Sciarelli. Thus, he inspired the authors in their contribution to better understanding corporate crises, and the way they are approached, investigating how different stakeholders and stakes are impacted by a corporate crisis over time. To provide a multi-stakeholder and longitudinal analysis of corporate crises, we investigate an Italian firm whose crisis has extended over a long timeline and has presented multiple dilemmas to decision-makers. To achieve this goal, it has been traced how the corporate crisis has been dealt with over time. More specifically, by looking into how corporate communication, newspapers, and press releases have approached it over time. In this way, we aim to offer a better understanding of the way strategic priorities have been set and renegotiated over time, as new issues have emerged and come to play, offering, at the same time, a more comprehensive and longitudinal interpretation of corporate crises and its main challenges from a stakeholder lens. In doing so, we intend to provide multiple contributions. First, we intend to expand the consideration of implications of corporate crises beyond the economic or financial realm and disentangle social and environmental implications over different time horizons. Second and relatedly, we contextualize social and environmental issues during a firm's pathological conditions. In such circumstances, the balance among competing stakes is more difficult to achieve. Our contribution unravels these tensions and may offer important managerial, and policy implications.

Methodology

Research approach

This study is based on an exploratory approach aimed at contributing to the research on corporate crisis management and the way recently privatized Italian corporations have approached crises over time. A qualitative analysis has been conducted performing a case study analysis (Yin, 2003) to offer an in-depth description of the phenomenon under investigation and pave the way for further research. The case study approach can be considered a suitable research strategy as it sheds light on various facets of the phenomenon under investigation, helping to explore a complex phenomenon when hypotheses are difficult to define before collecting research data. In other words, a case study helps to answer “how” and “why” questions (George and Bennett, 2005). As reported by George and Bennett, (2005) a case study helps “to explore a significant phenomenon under rare, unique or extreme circumstances” (p.18).

The analysis fits the extreme case study method, which is particularly fruitful when the research goal is to gather insights about a specific phenomenon by learning from a rare or unusual positive/negative example. This method is used when “the objective is to achieve the greatest possible amount of information on a given problem or phenomenon, [in such circumstances] a representative case or a random sample may not be the most appropriate strategy. This is because the typical or average case is often not the richest in information. Atypical or extreme cases often reveal more information” (Flyvbjerg, 2006, p.222). Drawing on these considerations, ILVA represents an extreme case study because it makes possible to learn from an unusual negative example of how a big Italian corporation handled a long-lasting corporate crisis after the privatization, which affected not only the corporate viability but also its harmful impact on both the local environment and society.

Research setting

ILVA is a long-lasting steel company set in Taranto, whose corporate history started, in 1905 in Genoa when Italy's leading steel companies created the ILVA Consortium in 1911. In 1961, the company merged with Cornigliano Steelworks creating Italsider. In 1965, the steel plant in Taranto started operations as Europe's largest steel producer. Still, the entire industry experienced a decline from 1975 to 1983. In 1995, the Riva Group acquired the Taranto plant, reinstating

the ILVA name. The long history of this primary Italian company passed through four main events a) the establishment of the production facility with direct public management, b) the privatization of ILVA's management, c) temporary receivership, d) the intervention of the multinational ArcelorMittal. Over the years, the ILVA crisis became even more severe because it was alleged of negative externalities for the environment (e.g., dioxins and other carcinogenic emissions) and consequently for local community. At the beginning of the second decade of the XXI century, some analyses and reports demonstrated the increased rates of cancer and other chronic diseases among the population living in the city of Taranto. It was in 2014 that the first formal investigations by Italian and European authorities were presented. In the same period, ILVA experienced changes in ownership and management to make the company able to overcome its long-lasting financial, environmental, and social crisis. To sum up, the ILVA case is extreme because it epitomizes the conflict between industrial and economic development and environmental and public health protection. The Taranto plant is a major employer in the region, contributing significantly to Italy's economy. However, the environmental and health costs have sparked a heated debate about the sustainability of such industrial operations and the necessity of stringent regulatory oversight. The Italian government has intervened on several occasions, either to try to clean up the plant or to take it over temporarily to safeguard jobs while attempting to bring the operations in line with environmental and health standards. Public outcry, both locally and internationally, has been vocal, with protests and campaigns demanding a resolution to the health and environmental crisis.

Data collection and analysis

To better understand the way Ilva (e.g., crisis management strategies, recovery strategies, recovery, and continuity plans, etc.) approached corporate crisis we performed a content analysis (Krippendorff, 2009; Kohlbacher, 2006) to test if and how ILVA communicated to its stakeholders the mechanisms implemented to face corporate crises. Indeed, content analysis “is a research technique for the objective, systematic, and quantitative description of the manifest content of communication” (Berelson, 1954, p. 489). This method is particularly suitable to address the research topic under investigation because it “involves an inductive exploration of the data to identify recurring themes, patterns, or concepts and then describing and interpreting those categories” (Nassaji, 2015, p. 130). The analysis was conducted on 150 documents (reports, news, etc.), selected according to a convenience sampling strategy (Etikan et al., 2016), a strategy implemented for collecting data when a sampling frame is not easy to define, allowing the selection of the sample units according to their accessibility (Bryman, 2012). To this end, the following selection criteria were set, accessibility, source (or authorship), and topic relevance and consonance with the main purpose of the study. Thus, documents dealing with the case company crisis and the related recovery strategies and plans published by the company itself and/or other stakeholders (government, media, analysts, citizens, etc.) over the last 12 years were selected to investigate stakeholders' perception of the way it managed the crisis with a special focus on the way it used the governmental recovery measure. The timeframe was set after the investigation of the ILVA history; thus, 2012 represents a critical milestone for the case company because this year the first forensic examinations were presented, and the national authorities seized the Taranto plant.

Documents were selected performing an open-ended iterative search process (Finfgeld-Connett and Johnson, 2013), based on ongoing searching, reading, and refining of the research problem. This process was conducted by 1) searching, 2) sorting, 3) selecting, 4) acquiring, 5) reading, 6) identifying, and 7) refining documents.

The first step (searching) was conducted by checking the title and the occurrence in the title and executive summary of some keywords that represent the topic under investigation, 1) corporate crises, 2) recovery, and 3) state intervention. In this way, it was possible to sort and select documents as well as to make them comparable. Moreover, after the first screening, these documents were organized to be used for the content analysis (Tab.1).

Table 1: Sampling criteria

Sampling criteria	
Topics	Corporate crises, recovery, state intervention
Data sources	Media, institutional, and corporate online databases
Authorship	case company, media, NGOs, institutions, citizens
Publication date	from 2012 to 2024
Language	Italian

Source: Authors' elaboration

This process led to sorting 150 documents, which were comparable and met the aforementioned criteria. These documents were written in Italian, accessible online, and dealt with the ILVA crisis. The analysis was conducted in Italian, but the results were translated into English. After this iterative process, the reports were analyzed according to some main elements dealing with crisis management derived from the literature. The quality of the analysis was ensured through 1) the construct validity, related to the achievement of suitable operational measures for analyzing concepts related to corporate crises, and 2) the internal validity, related to the appropriateness of the content analysis items (or themes), by triangulating different data sources, such as other reports, online news, webinars, etc. (Mason and Bramble,

1989). The content analysis was based on three main phases: 1) preparation, 2) organization, and 3) reporting (Elo and Kyngas, "2008). During the preparation phase, two researchers collected data (documents and news related to the ILVA crisis over time publicly available on websites or by requesting download permission, according to the selected sample criteria (see Tab.1). A dictionary containing the keywords derived from the extant literature was developed and used for the analysis. It consisted of a list of words organized into two main coding categories: 1) Corporate crisis, and 2) State intervention. Into this list, singulars and plurals were grouped, articles, auxiliaries, and prepositions were dropped out, while keywords' consistency was ensured using an English dictionary of synonyms and antonyms.

The organization phase consisted of a codebook (made up of categories, and keywords), used for organizing the results obtained. Two researchers independently checked the codebook for consistency. The content analysis supported the interpretation of the quantitative count of the coded texts descriptively. In doing so, some content units (or "observations" in inferential statistics) were defined. Each sentence reported in the analyzed documents was considered a content unit, which set the limits on the information to be considered in the description" (Krippendorff, 2009, p. 101), while the word was set as a unit of analysis. Finally, the reporting phase consisted of the organization of the units of analysis (words) into the coding categories defined before starting the analysis. Words' detection and counting were conducted using Maxqda software. A word-count matrix was created to organize results, according to some specific categories defined according to the authorship and/or the subject who published information or talked about a specific issue related to the ILVA long-lasting crisis. This contributed to making results easily comparable.

Table 2: Coding categories and keywords for the content analysis

Coding categories	Keywords
<i>Corporate crisis</i>	citizens, compulsory administration, crisis management, data breach, decline, earning crisis, disclosure, environment, environmental impact, ESG, financial exposure, information asymmetries, insolvency, failure, law, liquidity crisis, misconducts, moral hazard, natural disaster, optimization, people, privacy scandal, pollution, profitability crisis, public health, quality, restructuring, recovering, society, risk, sales scandals, social impact, sustainability,
<i>State intervention</i>	Action plan, compensation, criticalities, direct intervention, financing program, government, indirect intervention, incentives, institutions, local development, job protection, monopoly, nationalization, national development, national economy, privatization, public-private partnership, planned economy, policies, regulation, protection, public resources, state intervention, state participation.

Source: authors' elaboration.

Results. While the empirical analysis is still ongoing, in this section we present some interesting preliminary results. More specifically, our findings refer from the content analysis on the 45 documents out of the 150 (see table 3) tables. Thus, starting from the original 60 keywords associated with the 2 coding categories, and due to their adherence to the selection criteria, just 127 keywords were detected. Some keywords were not retrieved into the analyzed documents, and those with less than 40 occurrences were not considered. Therefore, 5 keywords did not occur (ESG, information asymmetries, optimization, cooperation, nationalization) and 12 did not exceed 40 occurrences (crisis management, data breach, financial exposure, liquidity crisis, misconducts, moral hazard, privacy scandal, profitability crisis, quality, sales scandals, monopoly, public-private partnership, planned economy) (Tab. 3).

Table 3: Keywords with no occurrences for each kind of analyzed document

Case Company	Media	NGOs	Institutions	Citizens
	ESG	ESG	ESG	ESG
information asymmetries	information asymmetries	information asymmetries	information asymmetries	information asymmetries
	Optimization	Optimization		optimization
cooperation		Cooperation		cooperation
nationalization	Nationalization	Nationalization	nationalization	nationalization

Source: Authors' elaboration.

Our results indicate that the most recurrent keywords in the documents (with more than 100 occurrences) were compulsory administration (108), risk (111), natural disaster (124), environment (221), law (155), pollution (188), people (190), sustainability (197), public health (204), environmental impact (211), belonging to the first coding category "Corporate crisis". The most occurrent keywords of the second category named "State intervention" are criticalities (112), indirect intervention (117), state participation (160), public resources (166), national economy (177), direct intervention (187), job protection (197), state intervention (209), privatization (187), protection (159).

The preliminary analysis has been conducted without grouping the achieved results into five different categories, defined according to document authorship (case company, media, NGOs, institutions, citizens). However, the results obtained from the content analysis were further analyzed focusing on the inner meaning of each keyword. It is not

surprising that the most recurrent keywords are environmental impact (211), and environment (221). This is mainly due to the long-lasting environmental impact that ILVA activities have had over time. In fact, when the Taranto plant was created, it was meant to be strategic “for the Italian economy since the industrialization following the Second World War. Unfortunately, in those last decades of the twentieth century, the ecological conscience was almost nonexistent” (Rinaldi, 2018, p.25). Therefore, it took some decades to make public opinion aware of the sustainability-related risks associated with the ILVA steel plant in Taranto, whose levels of pollution started to worry the Italian authorities and the European Union Commission in the first years of the XXI century.

The first condemnation for environmental pollution came in 2005, when the ILVA group, one of the most strategic Italian companies, was recognized guilty of severe environmental pollution dangerous for public health (Supreme Court, 28 September 2005, No. 38936). If the high number of occurrences of the keywords environmental impact, and environment is due to the ILVA unsustainable approach to operations, it is worth noting that this has had and still has negative consequences for both human and animal health (Lai et al., 2019), as the high number of occurrences of the keyword public health points out. To counteract this situation, Italian authorities forced ILVA to comply with the environmental legislation and to fix the socio-economic damages caused by its production activities. In fact, in 2012 an epidemiological appraisal reported the rising number of chronic diseases (especially cancer) among people working at the ILVA plant and in the city of Taranto. Consequently, in the same year (on the 26th of July) a court ordinance stopped the operations of this company, accused of environmental hazard. This led also to a better understanding of the high number of occurrences of the keyword natural disaster (124). However, it is worth noting that the case company did not comply with environmental standards for many years (European Commission 2017). This ordinance caused some tensions between the Italian Judiciary Authority and the Italian Government; thus, “in contrast with the Magistrate’s decision, in October 2012 the Environment Ministry promulgated a decree containing prescriptions with the aim of guaranteeing business continuity, and consequently job protection (which is a keyword occurring 197 times) imposing a compulsory administration” (Lai et al., 2018, p.73). This contributes to better understand the reason why the keywords compulsory administration (104) and state intervention (209) highly occurred. Moreover, it is often associated with the traditional “welfare state”, which since the 1950s has been based on state interventions both in the economic and social spheres (Turco and Leopizzi, 2020). Over time, this intervention has been progressively reduced and rationalized, limiting it to face critical situations, discourage unfair competition, and guarantee products/services essential for both the national economy and people’s wellbeing. This implies that the Italian state tends to act as a “last resort regulator” able to solve critical situations and challenge socio-economic risks (Gouldson and Bebbington, 2007). This contributes to better understating why state intervention is among the most occurrent keywords together with environmental impact, environment, and public health. In fact, when environmental and social risks occur, the state intervene[s] only as a regulator of last resort where issues are of such significance that guarantees are needed or where other forms of regulation fail” (Gouldson and Bebbington 2007, p. 7).

Managerial Implications. Although preliminary, our findings bear important managerial implications. The ILVA experience suggests that a crisis cannot be fixed by only looking at economic or financial figures. ILVA experience shows that the balance among different stakes is difficult to achieve, especially in the face of economic pressures and regulatory challenges, and that environmental and health issues should be considered together with the economic conditions.

Originality of the paper. To the best of our knowledge this is the first attempt to study a corporate crisis looking at how environmental, societal and competitive issues are balanced over time. Our study is also an attempt to investigate sustainability issues and practices in a pathological condition, such as a corporate crisis.

Research limitations. Our work is not free from limitations, which in turn provide opportunity for future research. At this stage, the primary limitation is that our findings refer to an extreme case study, which are not generalizability to other settings. Future research can integrate these findings in two ways. First, by performing additional case studies taking into account different industry and institutional conditions. A further step towards the generalizability of these findings is conducting survey on large sample of crises to investigate the most effective policies, strategies and plans to be implemented to overcome these situations. A second important limitation of our study is that it is based on secondary data only. Future research can address this issue by collecting primary data from the multiple stakeholders involved in and affected by a corporate crisis.

References

- ABATECOLA G. (2012), “Interpreting corporate crises: Towards a co-evolutionary approach”, *Futures*, vol. 44, n. 10, pp. 860-869.
- BERELSON B. (1954), “Content analysis”, *Handbook of social psychology*, vol. 1, pp. 488-522.
- BRYMAN A., CRAMER D. (2012), *Quantitative data analysis with IBM SPSS 17, 18 & 19: A guide for social scientists*, Routledge.
- COOMBS W.T. (1999), “Information and compassion in crisis responses: A test of their effects”, *Journal of public relations research*, vol. 11, n. 2, pp. 125-142.
- COOMBS W. Timothy (2010), *Parameters for crisis communication, The handbook of crisis communication*, Wiley.
- ELO S., KYNGÅS H. (2008), “The qualitative content analysis process”, *Journal of advanced nursing*, vol. 62, n. 1, pp. 107-115.
- ETIKAN I., MUSA S.A., ALKASSIM R.S. (2016), “Comparison of convenience sampling and purposive sampling”, *American journal of theoretical and applied statistics*, vol. 5, n. 1, pp. 1-4.

- EUROPEAN COMMISSION (2017), *State aid: Commission concludes in-depth investigation on support to Italy's largest steelmaker ILVA S.p.A. in A.S. and orders recovery on two measures that involved illegal State aid*. http://europa.eu/rapid/press-release_IP-17-5401_en.htm.
- FINFGELD-CONNETT D., JOHNSON E.D. (2013), "Literature search strategies for conducting knowledge-building and theory-generating qualitative systematic reviews", *Journal of advanced nursing*, vol. 69, n. 1, pp. 194-204.
- FLYVBJERG, B. (2006), "Five misunderstandings about case-study research", *Qualitative inquiry*, vol. 12, n. 2, pp. 219-245.
- FRANCESCHI L.F., TEDESCHI G. (2014), *Crisi d'impresa e ristrutturazione del debito*, Vita e Pensiero, Milano.
- GEORGE A.L., BENNETT A. (2005), *Case studies and theory development in the social sciences*, mit Press.
- GOULDSON A., BEBBINGTON J. (2007), "Corporations and the governance of environmental risk", *Environment and Planning C: Government and Policy*, vol. 25, n. 1, pp. 4-20.
- HELLER V.L., DARLING J.R. (2011), "Toyota in crisis: Denial and mismanagement", *Journal of Business Strategy*, vol. 32, n. 5, pp. 4-13.
- JANSSEN C., SEN S., BHATTACHARYA C.B. (2015), "Corporate crises in the age of corporate social responsibility", *Business Horizons*, vol. 58, n. 2, pp. 183-192.
- KIM S., ATKINSON L.J. (2014), "Responses toward corporate crisis and corporate advertising", *Journal of Promotion Management*, vol. 20, n. 5, pp. 647-665.
- KOHLBACHER F. (2006), "The use of qualitative content analysis in case study research", In: *Forum qualitative sozialforschung/forum: Qualitative social research*, Institut für Klinische Psychologie und Gemeindeforschung, p. 1-30.
- KOHLER K. (2022), "Capital flows and geographically uneven economic dynamics: a monetary perspective", *Environment and Planning A: Economy and Space*, vol. 54, n. 8, pp. 1510-1531.
- KRIPPENDORFF K. (2009), "Information of interactions in complex systems", *International Journal of General Systems* vol. 38, n. 6, pp. 669-680.
- LAI A., PANFILO S., STACCHEZZINI R. (2019), "Accounting, soci (et) al risks, and public reason: Governmental risk discourses about the ILVA steel plant in taranto (italy)", In *Multiple perspectives in risk and risk management: ERRN 8th European risk conference 2018, Katowice, Poland, September 20-21* (pp. 55-86). Springer International Publishing.
- LAI A., PANFILO S., STACCHEZZINI R. (2019), "The governmentality of corporate (un) sustainability: the case of the ILVA steel plant in Taranto (Italy)", *Journal of management and governance*, vol. 23, pp. 67-109.
- LI T., TRIN V.Q., ELNAHASS M. (2023), "Drivers of global banking stability in times of crisis: The role of corporate social responsibility", *British Journal of Management*, vol. 34, n. 2, pp. 595-622.
- MASON E.J., BRAMBLE W.J. (1978), *Understanding and conducting research: Applications in education and the behavioral sciences*, McGraw-Hill.
- NASSAJI H. (2015), "Qualitative and descriptive research: Data type versus data analysis", *Language Teaching Research*, vol. 19, n. 2, pp. 129-132.
- O'REILLY D., LEITCH C.M., HARRISON R.T., LAMPROU E. (2015), "Leadership, authority and crisis: Reflections and future directions", *Leadership*, vol. 11, n. 4, pp. 489-499.
- OU J., WONG I.A. (2021), "Strategic crisis response through changing message frames: a case of airline corporations", *Current Issues in Tourism*, vol. 24, n. 20, pp. 2890-2904.
- OUYANG Z., XU J., WEI J., LIU Y. (2017), "Information asymmetry and investor reaction to corporate crisis: Media reputation as a stock market signal", *Journal of Media Economics*, vol. 30, n. 2, pp. 82-95.
- PONIS S.T., KORONIS E. (2012), "A knowledge management process-based approach to support corporate crisis management", *Knowledge and Process Management*, vol. 19, n. 3, pp. 148-159.
- RINALDI C.E. (2018), *Collective identity and the role of emotions in discourse framing by social movement organisations: The Taranto case study*.
- SAHEBJAMNIA N., TORABI S.A., MANSOURI S.A. (2015), "Integrated business continuity and disaster recovery planning: Towards organizational resilience", *European Journal of Operational Research*, vol. 242, n. 1, pp. 261-273.
- SCIARELLI S. (2011), "Comunicazione e gestione della crisi", *Sinergie Italian Journal of Management*, vol. 59, pp. 63-75.
- SEEGER M.W., SELLNOW T.L., ULMER R.R. (2003), *Communication and organizational crisis*, Westport, CT: Praeger.
- SELLNOW T.L., ULMER R.R. (2003), *Ambiguity as an inherent factor in organizational crisis communication*, In: *Responding to crisis*. Routledge, pp. 251-262.
- SUN W. (2023), "Corporate crisis management from a strategic operations perspective: the importance and impact of information management", *Journal of Information Systems Engineering and Management*, vol. 8, n. 2, pp. 22353.
- Supreme Court, 28 September 2005, No. 38936
- TRON A., VALENZA G., CAPUTO A. (2018), "Corporate crisis management in Italy: execution, monitoring and performance analysis of recovery business and financial plans", *International Journal of Foresight and Innovation Policy*, vol. 13, n. 1-2, pp. 114-135.
- TURCO M., LEOPIZZI R. (2020), "The role of public governance in the pursuit of sustainable development of the ILVA steel plant: An interpretative framework", *Sustainability*, vol. 12, n. 19, pp. 8282.
- WILLIAMS T.A., GRUBER D.A., SUTCLIFFE K.M., SHEPHERD D.A., ZHAO E.Y. (2017), "Organizational response to adversity: Fusing crisis management and resilience research streams", *Academy of Management Annals*, vol. 11, n. 2, pp. 733-769.
- YIN R.K. (2003), "Designing case studies", *Qualitative Research Methods*, vol. 5, n. 14, pp. 359-386.

Knowledge sharing and learning: face-to-face and ICTs

LORIS SANTARELLI¹ FRANCESCA MASCIARELLI²

Abstract

In complex work contexts, requiring significant experience, individuals continuously share knowledge to perform their activities effectively. Here, only formal education may have little impact, as opposed to spontaneous forms of learning. This paper explores how different types of learning - contextual, experimental, reflexive, and vicarious learning - occur when individuals perform fieldwork-based activities together. By focusing our investigation on a unique context: Abruzzo, Lazio, and Molise National Park (PNALM), we observe the role of face-to-face and digitally based interactions for knowledge sharing. Qualitative data were collected with interviews and content analysis was used to identify the main themes. First of all, we found that contextual and vicarious learning mostly occurs with face-to-face interactions. Conversely, ITC also proven to be a valuable tool for supporting learning, particularly reflexive learning. Secondly, we demonstrated the fundamental role played by fieldwork-based and office activities in different types of learning. Finally, we discussed how the four typologies of learning impact on explicit and tacit knowledge. In conclusion, we contribute to academic literature on knowledge sharing and learning by identifying underlying mechanisms and tools facilitating these processes.

Key words: Learning, knowledge sharing, knowledge, communication tools, groups.

Framing of the research. Knowledge assumes an important role as a resource providing the fundamental assets for organizations engaged in complex environments (Bosua & Scheepers, 2007; Davenport & Prusak, 1998; Kraus et al., 2021). While the business activities require even more coordination, information exchange, and specific know how, it becomes indispensable for individuals to continuously learn (Edmondson et al., 2007). Organizational literature widely analysed learning and focused on how learning processes take place during different organisation activities, how individuals share their knowledge each other's or with other teams at different levels (Hansen et al., 2005; Lemmetty & Collin, 2020; Nonaka, 1994; Nonaka & Takeuchi, 1995; Pisano, 1996). Research on individual and group learning could deepen our understanding of the factors that drive knowledge sharing, thereby enhancing individual and team learning capabilities, as well as their know-how and skills. In this context, knowledge sharing is the essential means through which individuals can contribute to the increasing effectiveness in performing activities, innovation, competitive advantage and finally the performance of the organizations (Cabrera et al., 2002; Davenport & Prusak, 1998; Wang & Noe, 2010).

In uncertain and complex work contexts requiring continuous collaboration, trust, and significant knowledge, extant studies provide little insights on individual learning processes taking place while they are working in groups in these fields. Uncertainty refers to challenging conditions such as hard-to-reach locations, shortages of resources, or the absence of enabling technologies (Bosua & Scheepers, 2007; Duncan, 1972; Schulz, 2001). Complexity refers to the requirement of significant experience to make complex decisions or perform complex activities (Duncan, 1972; Vasconcelos & Ramirez, 2011). It therefore becomes increasingly important to understand how, on which occasions, and by what means individuals share their knowledge.

Nonaka and Takeuchi (1994; 1995) identified four typologies of learning according to the level: individual learning, group learning, organizational learning, and inter-organizational learning. We focus on how individuals learn within groups. The process where they, through intuition and interpretation, generate new insights, modify traditional mindset, and develop competencies by experimenting. Starting from the classification, Harvey, Bresman, and Edmondson (2018), in their study focused on team learning and cognitive capabilities, they developed a framework composed by four categories of learning: reflexive, experimental, contextual, and vicarious learning. Accordingly, reflexive learning refers to the activities in which the team analyses and evaluates previous information, experiences, or past actions by which the members become able to increase the efficiency and the quality of their outcomes. To increase their performance, the team develop new ways of doing tasks based on what they have learned (Edmondson, 2002; Harvey, Bresman, & Edmondson, 2018). Reflexive learning occurs while performing internal, exploitation-oriented activities concerning information sharing, analysis, and storing. Usually, it ensures efficiency and performance improvements because teams

¹ University of Chieti
e-mail: loris.santarelli@unich.it

² University of Chieti
e-mail: f.masciarelli@unich.it

evaluate past events (Harvey, Bresman, Edmondson, et al., 2018b). Contrary, experimental learning takes place when action precede the cognition (Crossan & Sorrenti, 1997). It occurs when team members develop new knowledge or insights through experimentation or test (Edmondson, 2002). Sequently, the third form of learning is defined contextual learning. It allows teams to learn from external sources relying on the key aspect of the context in which they learn (Bresman, 2010). The last type of learning, according to literature, is vicarious learning. Vicarious learning refers to the possibility to learn from the experience of the others with prior or major experience of who is learning (Bresman, 2010; Myers, 2021). Therefore, learning has been recognized as a process that is both social and collective phenomena (Teece et al., 1997; Teece & Pisano, 1994) because what individuals learn is linked with their social context and reflect what they put it into practice (Brown & Duguid, 2001).

Following Edmondson (1999; 2002), we refer to knowledge as the principal result of learning processes. Accordingly, she studied how it is discovered and applied through learning enabling teams to find solutions that were not previously addressed (Sole & Edmondson, 2002). As widely cited in the literature, knowledge can be classified as tacit and explicit. Tacit knowledge refers to beliefs, mental models and individuals' perspectives that is hard to formalize or share with others (Nonaka, 1994; Polanyi, 1967). Tacit knowledge resides in human brain and cannot be easily captured or managed, but it can be observed through actions. As business environments become increasingly complex and uncertain, there is a growing necessity for a deeper understanding of the role played by tacit knowledge (Kenneth, 2007; Polanyi, 1967). In contrast to the tacit dimension, explicit knowledge can be expressed in words or number and represents a minimal part of all the possible knowledge. Explicit knowledge refers to the knowledge that can be articulated in formal language and can be easily transferred to others (Nonaka & Toyama, 2003; Polanyi, 1967).

In this context, knowledge sharing is the ability to transfer previous experience, information, know how, explicit, and tacit knowledge between individuals (Cummings, 2004; Hansen et al., 2005; Kenneth, 2007). It is a mean by which organizations create and make knowledge available to the others (Christensen, 2007; Cummings, 2004). Individuals share their knowledge through both traditional and ICTs communication tools as they differently convey various types of information and support knowledge sharing. Communication tools such messaging platform, mobile call, e-mail as well as other technologies to collect and share information in real time based on IoT, sensors, and database are implemented to ensure the flow of information needed for complex business environments (Cantù & Corsaro, 2007; Ngah & Jusoff, 2009; Paroutis & Saleh, 2009).

Even though the literature on knowledge sharing increases, the discussions are mainly focused on how it is shared, in terms of best practices and process that consider knowledge as a "stock" to be transferred (Christensen, 2007). While the stock represents what has been learnt, Bontis and others (2002) studied how this stock can evolve over time (Kogut & Zander, 1992; Nonaka, 1994a). It is both important to recognize how this stock develop and how individuals take these new insights (Bontis et al., 2002). With the diffusion of ITCs, these processes have become increasingly effective in acquiring and exchange knowledge (Bennet & Tomblin, 2006; Edmondson et al., 2001; Ruiz-Mercader et al., 2006) because ITCs enhanced the availability of communication channels and facilitated access to information (Bennet & Tomblin, 2006).

Literature provided several insights on the use of ITCs in learning processes. Levitt and March (1988), and Teece (1994) focused on balancing exploration and exploitation to sustain organizational performance. Learning processes can also be influenced by individuals who use the technology (Garfield et al., 2001), the style of management (Aranda et al., 2014), the organizational conditions, and employees' networks and relationships (Grandon Gill, 1995; Harris, 2010; Lave & Wenger, 1991; Wenger, 2008).

Purpose of the paper. While formal education, especially in continuous changing organization environments may be limited, we observe how different forms of learning - contextual, experimental, reflexive, and vicarious learning (Harvey, Bresman, Edmondson, et al., 2018) - occur when individuals are working in highly complex contexts (Burns et al., 2005; Choi et al., 2009; Enos et al., 2003). These conditions clearly elicit the presence of tacit knowledge since it is embedded action and context (Nonaka, 1994). Additionally, to carry out business activities in these contexts, individuals are engaged in a network in which relationships are increasingly supported by both face-to-face interactions and digitally mediated interactions (Razmerita, Kirchner, et al., 2016; Razmerita, Wren, et al., 2016). Depending on their activities, individuals utilize various communication tools, ranging from traditional to technological tools (Aljuwaiber, 2016). Consequently, these options delineate diverse modes of communication, information exchange, and knowledge sharing.

The aim of this paper is to explore how different types of learning occur in organizations characterized by a complex and uncertain environment, where both live and technology-mediated interactions are essential, and there is a strong component of knowledge sharing. Particularly, we aim to unpack learning processes by focusing on facilitators that we identified from the literature and interviews: communication tools and organisation activities, with the scope to understand how learning through practice shape in knowledge. Therefore, our research question which lays the foundations for this paper is:

How do communication tools and activities impact on learning processes? How does learning processes shape knowledge within complex organisations?

Methodology. The research method is based on a single case study (Yin, 2003) developed with primary data collected through documental analysis and open-ended interviews (Oppenheim, 2000). We developed an in-depth case study by analysing internal relationships, learning activities, individual and organizational knowledge, and finally, the role played by communication tools in these processes within PNALM. We settled on this single case study as it provides valuable insights to deeply explore the learning processes during the activities that the organization directly perform within the real-world context. The national park context is an attractive setting in which our phenomenon of interest could be directly

observed since this context provides high visibility of teams and groups behaviour dealing with a dynamic, uncertain, and complex work on the field. More specifically, the work activities, to be carried out, require a deep knowledge of the surrounding natural environment and the species, the capacity to make decisions in a short time, and, above all, a high propensity for trust and teamwork.

These characteristics that actors must cope with, while working in the national park, create a context in which continuous learning, especially through direct experience on the field and from more experienced actors is critical. Additionally, these learning activities are also related to a strong heritage of tacit knowledge. Tacit knowledge is usually hard to express, articulate, or document (Nonaka & Takeuchi, 1995), and, in this context, it takes a leading part in carrying out the activities and must be continuously shared among team members. In addition, this empirical context is also valuable for the presence of a complex technology adoption supporting all the activities and the interactions among individuals forming a network supporting all the internal actors in addressing their purpose.

The particular and challenging environment in which work activities take place, together with the importance of relationships and the use of technologies in diverse types of activities, makes this context ideal to observe how individuals learn within groups and how knowledge sharing processes occur.

Firstly, we conducted the documental analysis to ensure validity by using multiple sources of evidence. This analysis included information and details such as the organization's initiatives and collaboration, the involved actors, their activities, adopted technologies, the organizational structure, their future projects, and events. Secondly, after conducting the documental analysis, we collected primary data with open-ended interviews. The interviews started with general questions about the interviewees' first experience and their career path. The questionnaire was composed of introducing questions, five sections concerning monitoring activities, technology, personal relationships, data sharing, external collaboration, and further questions to conclude the session. To let the insights emerge, we conducted 16 interviews with multiple employees and actors within PNALM belonging to different organization's sectors: direction, scientific sector, communication sector, rangers, and a tech company providing IoT technologies. The first interview lasted 2 hours and the subsequent approximately 1 hour. All the interviews conducted have been recorded, transcribed, and coded in order to identify all the relevant topics and develop the case study.

Thereafter, we applied the content analysis method to analyse the interviews. The pre-coding phase has been carried out starting from the development of a dictionary structured with the most relevant concept found. This phase consisted of a preliminary analysis where we highlighted the most frequent keywords from the interviews looking for relations with the literature (Creswell, 2014). In the coding phase, we deeply analysed the interviews, selected parts of the text, and assigned them to nodes. The selected nodes have been split into sub-nodes based on the contents. 10 variables were identified following the organizational literature and coded into nodes using NVivo software. We based our methodological approach following (Gioia et al., 2013). This methodology implies a qualitative interpretation of data able to meet the high standard of rigor in research.

Results. We developed a model that demonstrates the pivotal role of organizational activities and the use of communication tools in facilitating learning. This process contributes significantly to the sharing and acquisition of knowledge by individuals. Our results highlight how the learning process unfolds through diverse activities and communication tools, ultimately how forms of learning play a crucial role in shaping in types of knowledge by the end of the process. To achieve this result, we unpacked the learning processes by observing them from different perspectives. In order to ensure a comprehensive perspective on the learning processes, we conducted interviews with both who were acting as mentors, such as the more experienced members, and the learners, including newcomers and apprentices. First of all, we highlighted how learning takes place through the use communication tools. We demonstrate that contextual and vicarious learning mostly occurs with face-to-face interactions. We argued the importance of face-to-face interactions as a learning driver within organizations.

ITC also proven to be a valuable tool for supporting learning, especially reflexive learning. Not surprisingly, reflexive learning is the form of learning through which individuals analyse their owned information, processes, or output. We underlined the importance of learning through the discussion of what they know or do, in order to continuously refine or improve their internal processes. Indeed, the discussion and analysis of their processes or knowledge enabled them to uncover new insights into wildlife behaviours. Perfectly consistent with our obtained results, while face-to-face interactions proved to be relevant for reflexive learning, ICTs also support the process by improving the capacity of communication means and information sharing, especially when group members are working over great distances. Conversely, as we found that reflexive learning occurs in a more balanced manner between face-to-face interaction and ICT-based interaction, the result is not surprising because this type of learning happens more during office activities.

We further demonstrated that various activities have distinct impacts on the learning process. Particularly, our results show how fieldwork-based activities, office activities, and formal education and training activities influence the types of learning differently. Our model demonstrates the fundamental role played by fieldwork-based activities in contextual and vicarious learning. We found that, with minor impact than practice, also office and formal education activities may support learning processes in dynamic contexts.

Finally, we demonstrated how the four typologies of learning impact on explicit and tacit knowledge. Accordingly, experimental and reflexive learning are mostly effective in facilitating the sharing of explicit knowledge as is contextual learning as well. All the newcomers learned to recognize species, acquired knowledge about their behaviours and habits, mastered the use of technologies, and developed skills in surveillance and data collection. This clearly falls into the

category of explicit knowledge. Moreover, contextual learning effectively shapes explicit knowledge while concurrently facilitating the sharing of tacit knowledge occupying an intermediary position. Furthermore, the most significant findings reveal crucial insights in the relationship between vicarious learning and knowledge. We provide evidence that vicarious learning is an effective process that mostly give shape to tacit knowledge.

Research limitations. Even though we provided new insights in learning processes within groups, our study has certain limitations. As it is based on a single case study, it may limit the boundary of findings generalizations. We suggest future studies to replicate this research in other contexts or develop a multiple case study. It guarantees to improve the results by multiplying the patterns found, ensuring the enhancement of robustness of the findings (Yin, 2003)

Since we focused mostly on fieldwork-based and office activities, our findings could be compared by exploring further types of activities. For example, future studies could compare how learning occurs in workplace and during formal education or training programs. We also recommend further research to study more in depth the single typology of learning since more insights could be found at lower levels of analysis.

Managerial implications. Understanding how individuals learn over time while engaged in various organisational activities, may lead to both theoretical and practical insights. This study offers a comprehensive analysis of the occurrence of learning processes in work contexts. Organizations could benefit from our findings since they may improve knowledge sharing and learning processes by actively managing interactions and activities of members.

We highlighted how specific activities and communication tools facilitate learning processes. More specifically, this is achievable by setting specific interactions and indicating the right communication tools for the activities. Indeed, we demonstrated that face-to-face and digitally mediated interactions have different impact on knowledge sharing. For example, organizations can foster face-to-face interactions to improve vicarious learning. Conversely, they can exploit digital communication tools for improving contextual learning. The same applies to the activities: individuals can perform different activities and learn differently. Organizations can recognize the strategic importance of selecting employees for specific activities based on their experience and their level of expertise. By making strategic use of activities to learn, it could help organizations fill in specific weaknesses.

Finally, by linking learning to the type of knowledge, various opportunities emerge. Organizations could indirectly foster the sharing of tacit and explicit knowledge by selectively enhancing specific types of learning.

Originality of the paper. Our model underscores that the presence of the four diverse forms of learning guarantee organizations a seamless knowledge-sharing process, thereby preventing the occurrence of knowledge losses or gaps. Likewise, our model emphasizes the importance of vicarious learning as a facilitator of tacit knowledge; the form of knowledge that, by definition, is the most difficult to transfer and easy to lose (Nonaka & Takeuchi, 1995).

Our results agree the fact that the typologies of activities, associated with different communication tools, facilitates learning processes. For its part, learning shapes knowledge depending on how the entire process is structured, according to the nature of the activities and the interactions.

References

- ALJUWAIBER A. (2016), "Communities of practice as an initiative for knowledge sharing in business organisations: a literature review", In *Journal of Knowledge Management* (Vol. 20, Issue 4, pp. 731-748), Emerald Group Publishing Ltd.
- BOSUA R., SCHEEPERS R. (2007), "Towards a model to explain knowledge sharing in complex organizational environments", *Knowledge Management Research and Practice*, vol. 5, n. 2, pp. 93-109.
- BURNS J.Z., SCHAEFER K., HAYDEN J.M. (2005), "New Trade and Industrial Teachers' Perceptions of Formal Learning versus Informal Learning and Teaching Proficiency", *Journal of Industrial Teacher Education*, vol. 42, n. 66.
- CABRERA A., CABRERA ANGEL CABRERA INSTITUTO DE EMPRESA, E.F., ELIZABETH CABRERA S.F. (2002), Knowledge-sharing Dilemmas.
- CHOI W., JACOBS R.L., HAWLEY J., NOE R. (2009), "Influences of Formal Learning, Personal Characteristics, and Work Environment Characteristics on Informal Learning among Middle Managers in the Korean Banking Sector", *Human Resource Development Quarterly*.
- DAVENPORT T.H., PRUSAK L. (1998), *Working Knowledge: How Organizations Manage What They Know*. Harvard Business School Press. <https://doi.org/10.1145/348772.348775>
- DUNCAN R.B. (1972), "Characteristics of Organizational Environments and Perceived Environmental Uncertainty", *Quarterly*, vol. 17, n. 3, pp. 313-327.
- EDMONDSON A.C., DILLON J.R., ROLOFF K.S. (2007), "Three Perspectives on Team Learning Outcome Improvement, Task Mastery, and Group Process", *Academy of Management Annals*.
- ENOS M.D., KEHRHAHN M.T., BELL A. (2003), "Informal learning and the transfer of learning: How managers develop proficiency", *Human Resource Development Quarterly*, vol. 14, n. 4, pp. 369-387.
- GIOIA D.A., CORLEY K.G., HAMILTON A.L. (2013), "Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology", *Organizational Research Methods*, vol. 16, n. 1, pp. 15-31.
- HANSEN M.T., MARIE I., MORS L. (2005), Knowledge Sharing In Organizations: Multiple Networks, Multiple Phases.
- HARA N., BONK C., DROLET J., GUSKIN S., KLING R., LEVINSON B., SCHWEN T. (2001), Formal and Informal Learning: Incorporating Communities of Practice into Professional Development.
- HARVEY J.F., BRESMAN H., EDMONDSON A.C., PISANO G.P. (2018), *Team Learning and Superior Firm Performance: A Meso-Level Perspective on Dynamic Capabilities*. Harvard Business School.
- KRAUS S., JONES P., KAILER N., WEINMANN A., CHAPARRO-BANEGAS N., ROIG-TIERNO N. (2021), *Digital Transformation: An Overview of the Current State of the Art of Research*. SAGE Open, vol. 11, n. 3.
- KRIPPENDORFF K. (1980), *Validity in Content Analysis*.

- KRIPPENDORFF K. (2018), Content analysis : an introduction to its methodology.
- LEITH D.V. (2019), “Exploring sensings in practice: affect and knowledge sharing”, *Journal of Documentation*, vol. 75, n. 3, pp. 500-516.
- LEMMETTY S., COLLIN K. (2020), “Self-Directed Learning as a Practice of Workplace Learning: Interpretative Repertoires of Self-Directed Learning in ICT Work”, *Vocations and Learning*, vol. 13, n. 1, pp. 47-70.
- MAANEN J.V., KOLB D. (1982), The Professional Apprentice: Observations on Fieldwork Roles In Two Organizational Settings.
- MYERS C.G. (2022), “Storytelling as a Tool for Vicarious Learning among Air Medical Transport Crews”, *Administrative Science Quarterly*, vol. 67, n. 2, pp. 378-422.
- NONAKA I. (1994), “A Dynamic Theory of Organizational Knowledge Creation”, *Organizational Science*.
- NONAKA I., TAKEUCHI H. (1995), “The Knowledge Creating Company”, *Harvard Business Review*.
- PISANO G.P. (1996), “Learning-before-doing in the development of new process technology 1”, In *Research Policy Elsevier Research Policy* (Vol. 25).
- RAZMERITA L., KIRCHNER K., NIELSEN P. (2016), “What factors influence knowledge sharing in organizations? A social dilemma perspective of social media communication”, *Journal of Knowledge Management*, vol. 20, n. 6, pp. 1225-1246.
- RAZMERITA L., WREN G., JAIN L. (2016), “Advances in Knowledge Management: an Overview”, *Journal of Knowledge Management*, vol. 20, n. 6, pp. 1225-1246.
- SCHULTE B., ANDRESEN F., KOLLER H. (2020), “Exploring the Embeddedness of an Informal Community of Practice Within a Formal Organizational Context: A Case Study in the German Military”, *Journal of Leadership and Organizational Studies*, 27, n. 2, pp. 153-179.
- SCHULZ M. (2001), “The uncertain relevance of newness: organizational learning and knowledge flows”, In *Academy of Management Journal*, vol. 44, n. 4.
- SEELY J., DUGUID P. (1991), “Organizational Learning and Communities of Practice: Toward a Unified View of Working, Learning, and Innovation”, *Organization Science*, vol. 2, n. 1.
- VASCONCELOS F.C., RAMIREZ R. (2011), “Complexity in business environments”, *Journal of Business Research*, vol. 64, n. 3, pp. 236-241.
- WANG S., NOE R.A. (2010), “Knowledge sharing: A review and directions for future research”, *Human Resource Management Review*, vol. 20, n. 2, pp. 115-131.
- YIN K.R. (2003), *Designing Case Studies Research*

How do stakeholders perceive the impacts of Nature-based solutions? An Italian case study for coastal restoration and climate change adaptation

GIORGIA CONDOMITTI¹ MARIA ROSA DE GIACOMO² SARA TESSITORE³ MARCO FREY⁴

Abstract

The escalation of natural disasters linked to climate change has underlined the urgent need for effective risk management strategies to mitigate their adverse impacts on communities and economies. To address this, there is a growing emphasis on integrated ecosystem-based approaches, in particular Nature-based Solutions (NBS). NBS offer multiple benefits, including increased resilience and various societal, environmental and economic benefits. However, it is essential to conduct comprehensive evaluations considering both positive (benefits) and negative (costs) impacts across diverse domains. Our study aims to bridge existing gaps in the literature by analyzing potential synergies and trade-offs arising from NBS implementation. Building on previous research, we propose a participatory approach to assess stakeholders' perceptions of the economic, social, and environmental costs and benefits associated with NBS implementation. Through a case study in the Tuscany region as part of the Horizon project Regions4Climate, we seek to categorize stakeholders based on their impact and influence on NBS, providing valuable insights from both theoretical and practical perspectives. The anticipated outcomes include a framework mapping costs and benefits associated with NBS implementation against stakeholder perceptions, highlighting potential trade-offs and synergies, and a novel stakeholder classification based on impact intensity and influence degree.

Key words: climate change; adaptation to climate change; nature-based Solutions; NBS; coastal flooding; coastal restoration; stakeholder theory; stakeholder engagement; horizon project

Framing of the research.

Climate Change, coastal flooding and coastal restoration

In recent years, the escalation of disasters stemming from natural hazards, particularly those linked to climate change and variability such as floods, droughts, and heatwaves, has underscored the imperative for effective risk management strategies to mitigate their repercussions on the built environment, communities, and the economy. Over the period from 1980 to 2022, the economic losses inflicted by climate-related events across European member states averaged approximately € 650 billions of which € 59.4 billions in 2021 and € 52.3 billions in 2022 (EEA, 2023).

Erosion and coastal inundation induced by storm surges and waves similarly imperil human infrastructure and ecosystems (Hinkel, et al., 2014). The imperative to reduce risks from coastal storms has catalyzed endeavors to expand the utilization of integrated ecosystem-based methodologies, such as Nature-based Solutions (Van Slobbe, et al., 2013). A growing body of evidence suggests that NBS can effectively mitigate risks (Ferrario et al., 2014; Spalding et al., 2014) by leveraging the inherent capabilities of wetlands, beaches, dunes, reefs, and other natural features to alleviate the impacts of storm surges and waves (Temmerman et al., 2013). Indeed, coastal protection strategies grounded in natural approaches have gained in prominence since they have been incorporated among viable Disaster Risk Reduction (DRR) strategies in several European directives (Council Directive 92/43/EEC, 1992; Directive 2001/42/EC, 2001; Directive 2011/92/EU, 2011; EC, 2009). Natural and nature-based solutions can, thus, fortify the resilience of coastal regions threatened by sea level rise (Borsje, et al., 2011) and coastal storms (e.g., Gedan et al., 2011; Lopez, 2009).

¹ Sant'Anna School of Advanced Studies
e-mail: giorgia.condomitti@santannapisa.it

² Sant'Anna School of Advanced Studies
e-mail: mariarosa.degiacomo@santannapisa.it

³ Sant'Anna School of Advanced Studies
e-mail: sara.tessitore@santannapisa.it

⁴ Sant'Anna School of Advanced Studies
e-mail: marco.frey@santannapisa.it

Nature-based Solutions

While the delineation of NBS remains subject to debate (Nesshöver et al., 2017), the prevailing conceptualizations draw upon frameworks articulated by the International Union for Conservation of Nature (IUCN) and the European Commission (EC). IUCN defines NBS as “actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits” (Cohen-Shacham et al, 2016). Conversely, the European Commission characterizes NBS as methodologies to tackle societal challenges with “solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social, and economic benefits, and help build resilience” (EC, 2016.)

A common thread among these definitions is their multifunctionality (Kabisch et al., 2016), denoting their capacity to concurrently fulfill multiple functions to deliver a suite of associated ecosystem services that bring benefits to society, the economy, and the environment (Albert et al., 2017). Various additional characteristics proposed in scholarly literature encompass cost-effectiveness (Keesstra et al., 2018; EC, 2016.), adaptability (Cohen-Shacham et al, 2016), a problem-centric approach (Potschin et al, 2016), the utilization of participatory processes for co-design, co-creation, and co-management (Pauleit et al., 2017) and reliance on multidisciplinary, evidence-based strategies (Nature, 2017).

Nevertheless, certain ambiguities persist. A primary challenge involves delineating the boundary between what constitutes ‘nature’ or ‘natural’ and what does not (Nesshöver et al., 2017). Furthermore, the relationship between NBS and established ecosystem-based approaches is contentious (Eggermont et al., 2015; Maes & Jacobs, 2017; Raymond et al., 2017). Another area of contention pertains to the relationship between NBS and innovation, with some asserting the latter as a central tenet of such solutions (Bauduceau et al., 2015; Potschin, 2016), while others omit it entirely (e.g., Cohen-Shacham et al., 2016; Keesstra et al., 2018).

In conclusion, NBS can be conceptualized as an “umbrella term” encompassing a broad spectrum of concepts and practices (Nesshöver et al., 2017; Pauleit et al., 2017). The robustness of NBS lie in its holistic approach to address societal challenges and yield multiple co-benefits (Faivre et al., 2017; Nevens et al., 2013). These co-benefits emanate from the multifunctionality of NBS and encompass diverse issues such as augmented landscape values for society, biodiversity conservation, pollution mitigation, enhancement of health and well-being, reduction of GHG emissions, and creation of green jobs (Cohen-Shacham et al., 2016; Raymond et al., 2017). Correspondingly, ecosystem disservices should be construed as co-costs (Calliari et al., 2019). Notably, to comprehensively evaluate the impact of NBS, it is imperative to assess both the positive (benefits) and negative (costs) impacts across various domains, discern their potential synergies and trade-offs, and detect their implications across diverse challenge areas. Moreover, it is essential to account for stakeholder heterogeneity, as it engenders differences in the perception and evaluation of co-benefits.

Stakeholders’ engagement

Numerous stakeholders, defined as “any identifiable group or individual who can affect the achievement of an organization’s objectives, or who is affected by the achievement of an organization’s objectives” (Freeman & Reed, 1983) are involved in concerns regarding the protection of ecosystems (e.g., local authorities, environmental associations, and the local population), whose interests necessitate consideration (Brechtin et al., 2002; Kapoor, 2001). Therefore, identifying and addressing stakeholders’ values, interests, and knowledge constitutes a critical step to ensure a well-functioning process and to address potential conflicts, issues, and constraints that may arise.

Previous research has examined the benefits associated with stakeholders’ engagement in environmental management projects. These benefits can be broadly classified under normative and pragmatic arguments for stakeholder engagement in environmental decision-making (Pistorius & Reinecke, 2013; Reed, 2008; Young et al., 2007).

Moreover, the literature on stakeholder participation distinguishes between the degrees of stakeholders’ engagement and establishes a hierarchical nature of engagement ranging from passive dissemination of information to active engagement and transformative participation, implying a preference for higher levels of engagement over lower levels (Arnstein, 1969; Biggs, 1989; Farrington, 2014; Goetz & Gaventa, 2001; Lawrence, 2006; Pretty, 1995). However, recent studies argue that different levels of engagement are likely appropriate in varying contexts, contingent upon the objectives of the work and the stakeholders’ capacity to influence outcomes (Richards et al., 2004; Tippet et al., 2007). Reed (2008) suggests that stakeholder participation may enhance the quality of environmental decisions, with one strong caveat: the quality of a decision heavily relies on the quality of the process leading to it. He advocates for an approach that views participation as a process, emphasizing empowerment, equity, trust, and learning.

Capitalizing on all of this, within the Horizon project “Regions4Climate”, a consortium of experts will implement a Nature-based Solution in Tuscany Region (Italy) aimed at ameliorating the adverse impacts and damages caused by coastal flooding and storms, through a project centered on dune restoration.

Purpose of the paper. Acknowledging the multifunctionality of NBS and their capacity to deliver advantages to numerous stakeholders have become pivotal. Given the involvement of a multitude of stakeholders with distinct interests, and problem understandings in NBS implementation, multiple - sometimes conflicting - values and perceptions coexist.

Many previous studies demonstrate limited capacity to analyze potential synergies and trade-offs arising from the coexistence of different benefits and costs move beyond a compartmentalized assessment, and fail to address how they depend on stakeholder groups considered (Calliari et al., 2019; Narayan et al., 2017; Viti et al., 2022).

Our research seeks to address these gaps providing a more holistic perspective examining the relationships between the various impacts of nature-inspired strategies.

Additionally, we believe that by categorizing different stakeholder on the basis of the level of impact of NBS on them, and the degree of influence exerted by them, we can offer valuable insights from both theoretical and practical

standpoints. Our framework is intended to be a valuable tool for policymakers and decision-makers, enabling a better understanding of local actors' perceptions of NBS and facilitating more effective communication and stakeholder engagement.

Therefore, this paper aims to address the following questions:

1. What are the primary benefits and costs that stakeholders identify within the implementation of NBS for coastal restoration?
2. What synergies and trade-offs can potentially emerge from the aforementioned co-benefits and co-costs according to different stakeholder groups?
3. Based on the analysis of stakeholders' perceptions and interests, how can we classify different categories of stakeholders considering the impacts of NBS and the influence exerted by the stakeholders?

Methodology. To address these questions, we aim to conduct a case study in the Tuscany region of Italy as part of the Horizon project Regions4Climate. The Tuscany project aims to address coastal flooding and consequent adaptation strategies through the implementation of a Nature-based Solution. Specifically, the solution involves the restoration of the dune ecosystem using a nature-based approach, with the project duration spanning from 2023 to 2027.

The case study aims to organize workshops with various categories of local stakeholders during the second year of the project. Hence, this study proposes a participatory approach to assess stakeholders' perceptions of economic, social, and environmental costs and benefits associated with NBS implementation, with a specific emphasis on their capacity to generate co-benefits and co-costs.

Given the objectives of our investigation, we find the case study methodology to be appropriate as it offers flexibility for conducting thorough analyses at localized levels, striking a balance between breadth and depth (Taylor, 2016). Additionally, it ensures a multi-dimensional approach by enabling examination of various facets from diverse perspectives (Eisenhardt, 1989; Yin, 1981).

Stakeholder Selection

The selection of stakeholder groups for analysis was pivotal. The aim was to minimize selection bias and stakeholder marginalization (Ananda & Herath, 2003; Reed et al., 2009). This selection was conducted in a two-stage process. Initially, a panel of experts involved in the project compiled a list of local stakeholders, as summarized in Table 1. Subsequently, this list was validated through data triangulation, drawing from previous academic studies on the subject. The most pertinent categories identified in the literature encompassed public managers and decision-makers (provincial and municipal government), scientific and technical experts, educational institutions, entrepreneurs (directly and indirectly related enterprises), and representatives of social groups and NGOs (Guan et al., 2022; Lique et al., 2016a)

Table 1. Stakeholders identified by R4C partners (panel of expert discussion).

Researcher and scientific community	Policymakers and local authorities	Business, entrepreneurs and investors	Industry associations and civil society	General Public
• CMCC • ENEA • University of Bologna • ARPA • University of Florence • University of Pisa • University of Trieste	• Piombino municipality • Parchi Val di Cornia society • Drainage consortium Val di Cornia • San Rossore regional Park entity • Maremma park • Gargano national Park • San Vincenzo municipality • Follonica municipality • SNPA • Marine protected area Capo Carbonara • Civil defense • Tuscany Region	• Val Cornia Park • Banca Intesa Sanpaolo • Generali Assicurazioni • Livorno Foundation • Tuscany Environment Foundation • Banca del Monte di Lucca • Cassa di Risparmio di Carrara Foundation • Unioncamere Toscana • GNRAC • Beachmed • Mar Tirreno Settentrionale Port system Authority	• Legambiente • Federturismo • Italian Environment Fund • Confindustria • WWF • Greenpeace • TartAmare • Lipu • Federalberghi	• AIAT • Engineers Association

Identification of Costs and Benefits (in progress)

Similar to previous studies (Calliari et al., 2019; Lique et al., 2016b; Raymond et al., 2017), we are employing an integrated valuation method that simultaneously considers economic, social, and environmental benefits and costs. Notably, previous works have given limited or no consideration to the conflicts and synergies that may emerge considering the wide range of benefits and costs embedded with NBS (Lique et al., 2016a; Narayan et al., 2017; Raymond et al., 2017a, b; Reguero et al., 2014). Hence, our framework aims not only to address costs and benefits inherent in NBS but also to highlight potential trade-offs and synergies.

The identification of benefits and costs will be the focus of the workshop that is currently planned for May 2024. The workshop will adopt a participatory approach, fostering interaction among participants. It will comprise two phases.

First, we are planning to divide participants into groups based on their roles: (i) private sector (directly and indirectly related enterprises), (ii) educational and scientific community, (iii) policymakers and political authorities, (iv) representatives of civil society and (v) industry associations. This phase aims to identify specific costs and benefits associated with NBS implementation, considering economic, social, and environmental aspects. Participants will also discuss the significance of these costs and benefits in terms of impacts, their interrelationships, and the likelihood of occurrence.

In the second phase of the workshop, we plan to reorganize the groups into focus groups comprising participants from different roles, who will deliberate on the synergies and trade-offs of costs and benefits previously identified. This phase aims to stimulate discussion and idea exchange among participants and assess the level of consensus reached. It is anticipated that during this stage, the above identified costs and benefits will be further characterized, and the interrelationships between them in terms of synergies and trade-offs will be elucidated.

To prepare participants and facilitate discussion, the focus groups will be preceded by a brief introduction to the project's specific content and objectives, the characteristics of NBS, and a preliminary list of costs and benefits traditionally associated with NBS. This list was compiled through analysis of scientific literature on the topic and encompasses various costs and benefits (see Table 2).

Table 2. Benefits and costs of NBS in the economic, social and environmental domains.

	Economic	Social	Environmental	References
Benefits	Reduce public costs (construction and maintenance costs)	Regulating Ecosystem Services (ESS), Provisioning ESS, Cultural ESS, Supporting ESS, Recreation, Accessibility, Human health and well-being, Green jobs	Habitat quality, Habitat quantity, Habitat creation, Biodiversity, Species abundance, Extent of protected area, Carbon sequestration, Biological control, Pollution reduction	(Liquete et al., 2016a; Cohen-Schacham et al., 2016; Raymond et al., 2017; Ruangpan et al., 2024; Viti et al., 2022)
Costs	Construction costs, Maintenance costs	Social cohesion		

Results. Despite their prominence on political and research agendas, the understanding of on-the-ground stakeholders regarding Nature-based Solutions remains limited. Our research aims to enhance understanding of how different stakeholder groups perceive the impact of NBS implementation for coastal restoration across economic, social, and environmental domains. We anticipate uncovering prevailing interests among stakeholder categories and providing insights into the general sentiment regarding NBS application and perceived effectiveness across these domains.

The primary anticipated outcome of the research is a framework capable of mapping the costs and benefits associated with NBS implementation against the perceptions of different stakeholder categories, thereby highlighting potential trade-offs and synergies. This framework aims to transcend the traditional approach that analyzes NBS benefits and costs as isolated entities instead undertaking a comprehensive evaluation of their varied and sometimes conflicting impacts. In doing so, we aim to address the gap identified by (Viti et al., 2022), moving from a compartmentalized assessment of costs and benefits to one that optimizes both the recognition and valuation of the multiplicity of impacts arising from nature-inspired strategies.

Another expected outcome is to devise a novel classification of stakeholders based on two criteria: (i) the intensity of NBS impact on them and (ii) the degree of influence they exert. This classification aims to provide a nuanced understanding of stakeholders' roles and perspectives in the context of NBS implementation.

By identifying the costs and benefits of NBS and the perceptions of key stakeholders, the study aims to support policymakers and public managers with insights on what aspects may spur or prevent the social acceptability of specific NBS.

Research Limitations. The primary limitation of this study pertains to its methodology. While adopting a qualitative approach via a single case study is appropriate for delving deeply into the analysis and offering specific insights, this methodology restricts the generalizability of our findings. To enhance generalizability, replication of our study in diverse contexts for comparative analysis would be necessary.

Another limitation lies in the sampling of stakeholders. Despite efforts to ensure representation across various stakeholder categories through triangulation with categories identified in the literature, bias in the identification of costs and benefits may have originated from the selection of participants.

Additionally, this research solely offers a qualitative assessment of benefits and costs. Extending the study to incorporate quantitative measurements of these costs and benefits, while also evaluating the intensity of synergies and trade-offs identified, would be beneficial.

Managerial Implications. The practical implications of this study primarily target public managers and decision-makers. Our framework concerning benefits, costs, synergies, and trade-offs aids in identifying critical areas and potential conflicting objectives for management, as well as opportunities for strengthening synergies. Thus, the study aims to furnish best practices and solutions for minimizing conflicts and maximizing benefits. Moreover, stakeholder analysis can furnish valuable insights for local authorities to: (i) raise awareness and foster a comprehensive

understanding of NBS among diverse local stakeholders, (ii) structure and tailor communication more effectively based on different stakeholder groups, and (iii) pinpoint additional opportunities for stakeholder engagement.

Originality of the Paper. This research makes original contributions to both theoretical and practical domains. Theoretically, it enriches the literature on stakeholder perception analysis related to NBS implementation by exploring the interrelationships between costs and benefits. While previous literature has focused on identifying diverse costs and benefits from stakeholders, limited efforts have been made to capture potential synergies and trade-offs among them. Furthermore, prior studies often categorized stakeholders solely based on their social group affiliations. However, our study advances this by offering holistic insights into stakeholder views, perceptions, awareness, and expectations of NBS in terms of economic, social, and environmental dimensions. We, also, introduce a novel classification of stakeholders considering (i) the intensity of NBS impact on them and (ii) their degree of influence.

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Reference

- ALBERT C., SPANGENBERG J. H., SCHRÖTER B. (2017), "Nature-based solutions: criteria", *Nature*, vol. 543, n. 7645, pp. 315-315.
- ANANDA J., HERATH G. (2003), "Incorporating stakeholder values into regional forest planning: a value function approach", *Ecological Economics*, vol. 45, n. 1, pp. 75-90.
- ARNSTEIN S. R. (1969), "A Ladder of Citizen Participation", *Journal of the American Planning Association*, vol. 35, n. 4, pp. 216-224.
- BAUDUCEAU N., BERRY P., CECCHI C., ELMQVIST T., FERNANDEZ M., HARTIG T., KRULL W., MAYERHOFER E.N.S., NORING L., RASKIN-DELISLE K., ROOZEN E., SUTHERLAND W., TACK J. (2015), Towards an EU Research and Innovation Policy Agenda for Nature-based Solutions & Re-naturing Cities: Final Report of the Horizon 2020 Expert Group on "Nature-based Solutions and Re-naturing Cities." <https://doi.org/10.2777/765301>
- BIGGS S.D. (1989), Resource-poor farmer participation in research: A synthesis of experiences from nine national agricultural research stations. <http://hdl.handle.net/10919/66367>
- BRECHIN P.R., WILSHUSEN C.L., FORTWANGLER P.C., WEST S.R., CURRAN L., VANDERMEER J., PERFECTO I., DIETSCH T., BENJAMIN C., MURRAY G., ERAZO J., THOMS C., MCCANCE E., FINAN A.M., PLUMRIDGE H., BRANDON K., RUDEL T., GEISLER C., PFEFFER M., BRAY D., BELSKY J., HOUGH J., BRECHIN S.R. (2002), "Beyond the Square Wheel: Toward a More Comprehensive Understanding of Biodiversity Conservation as Social and Political Process", *In Society and Natural Resources* (Vol. 15).
- CALLIARI E., STACCIONE A., MYSIAK J. (2019), "An assessment framework for climate-proof nature-based solutions", *Science of the Total Environment*, vol. 656, pp. 691-700.
- EC (1992), Council Directive 92/43/EEC. EUR-Lex - 31992L0043 - EN. Official Journal L 206, 22/07/1992 P. 0007 - 0050; Finnish Special Edition: Chapter 15 Volume 11 P. 0114 ; Swedish Special Edition: Chapter 15 Volume 11 P. 0114
- EC (2001), Directive 2001/42/EC. EUR-Lex - 32001L0042 - EN. Official Journal L 197, 21/07/2001 P. 0030 - 0037
- EC (2009), The Birds Directive - European Commission. https://environment.ec.europa.eu/topics/nature-and-biodiversity/birds-directive_en#
- EC (2011), Directive 2011/92/EU. Directive 2011/92/EU of the European parliament and of the council on the assessment of the effects of certain public and private projects on the environment. <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32011L0092>
- EGGERMONT H., BALIAN E., AZEVEDO J.M.N., BEUMER V., BRODIN T., CLAUDET J., FADY B., GRUBE M., KEUNE H., LAMARQUE P., REUTER K., SMITH M., VAN HAM C., WEISSER W.W., LE ROUX X. (2015), "Nature-based solutions: New influence for environmental management and research in Europe", *GAIA - Ecological Perspectives for Science and Society*, vol. 24, n. 4, pp. 243-248.
- EISENHARDT K.M. (1989), Building Theories from Case Study Research. <https://doi.org/10.5465/Amr.1989.4308385>, vol. 14, n. 4, pp. 532-550.
- EUROPEAN COMMISSION (2021), "Evaluating the impact of nature-based solutions. https://research-and-innovation.ec.europa.eu/research-area/environment/nature-based-solutions_en#
- EUROPEAN ENVIRONMENT AGENCY (EEA), (2023), "Economic losses from weather- and climate-related extremes in Europe. <https://www.eea.europa.eu/en/analysis/indicators/economic-losses-from-climate-related?activeAccordion=ecdb3bcf-bbe9-4978-b5cf-0b136399d9f8>
- FAIVRE N., FRITZ M., FREITAS T., DE BOISSEZON B., VANDEWOESTIJNE S. (2017), "Nature-Based Solutions in the EU: Innovating with nature to address social, economic and environmental challenges", *Environmental Research*, vol. 159, pp. 509-518.
- FARRINGTON J. (2014), Organisational roles in farmer participatory research and extension: Lessons from the last decade, In Number (Vol. 27), <https://odi.org/en/publications/organisational-roles-in-farmer-participatory-research-and-extension-lessons-from-the-last-decade/>
- FERRARIO F., BECK M.W., STORLAZZI C.D., MICHELI F., SHEPARD C.C., AIROLDI L. (2014), "The effectiveness of coral reefs for coastal hazard risk reduction and adaptation", *Nature Communications*, vol. 5, n. 1, pp. 1-9.

- FREEMAN R.E., DAVID L.R. (1983), "Stockholders and Stakeholders: A New Perspective on Corporate Governance", *California Management Review*, vol. 25, n. 3, pp. 88-106.
- GEDAN K.B., KIRWAN M.L., WOLANSKI E., BARBIER E.B., SILLIMAN B.R. (2011), "The present and future role of coastal wetland vegetation in protecting shorelines: Answering recent challenges to the paradigm", *Climatic Change*, vol. 106, n. 1, pp. 7-29
- GOETZ A.M., GAVENTA J. (2001), "Bringing citizen voice and client focus into service delivery | Participatory Methods. <https://www.participatorymethods.org/resource/bringing-citizen-voice-and-client-focus-service-delivery>
- GUAN Y., BAI J., TIAN X., WANG X., WANG C., ZHANG Y., CHEN B., LIU G. (2022), "Social network analysis and application for ecosystem service perceptions by stakeholders for coastal wetland conservation", *Journal of Cleaner Production*, vol. 371.
- KABISCH N., FRANTZESKAKI N., PAULEIT S., NAUMANN S., DAVIS M., ARTMANN M., HAASE D., KNAPP S., KORN H., STADLER J., ZAUNBERGER K., BONN A. (2016), "Nature-based solutions to climate change mitigation and adaptation in urban areas: perspectives on indicators, knowledge gaps, barriers, and opportunities for action", vol. 21, n. 2.
- KAPOOR I. (2001), "Towards participatory environmental management?", *Journal of Environmental Management*, vol. 63, vol. 269-279.
- KESSTRA S., NUNES J., NOVARA A., FINGER D., AVELAR D., KALANTARI Z., CERDÀ A. (2018), "The superior effect of nature based solutions in land management for enhancing ecosystem services", *Science of The Total Environment*, vol. 610-611, vol. 997-1009.
- LAWRENCE A. (2006), "'No Personal Motive?' Volunteers, Biodiversity, and the False Dichotomies of Participation", *Ethics Place and Environment*, vol. 9, n. 3, pp. 279-298.
- LIQUETE C., UDIAS A., CONTE G., GRIZZETTI B., MASI F. (2016a), "Integrated valuation of a nature-based solution for water pollution control. Highlighting hidden benefits", *Ecosystem Services*, vol. 22, vol. 392-401.
- LIQUETE C., UDIAS A., CONTE G., GRIZZETTI B., MASI F. (2016b), "Integrated valuation of a nature-based solution for water pollution control. Highlighting hidden benefits", *Ecosystem Services*, vol. 22, vol. 392-401.
- LOPEZ J.A. (2009), "The Multiple Lines of Defense Strategy to Sustain Coastal Louisiana", *Journal of Coastal Research*, vol. 10054, vol. 186-197.
- MAES J., JACOBS S. (2017), "Nature-Based Solutions for Europe's Sustainable Development", *Conservation Letters*, vol. 10, n. 1, pp. 121-124.
- NARAYAN S., BECK M.W., WILSON P., THOMAS C.J., GUERRERO A., SHEPARD C.C., REGUERO B.G., FRANCO G., INGRAM J.C., TRESPALACIOS D. (2017), "The Value of Coastal Wetlands for Flood Damage Reduction in the Northeastern USA. Scientific Reports 2017 7:1, vol. 7, n. 1, pp. 1-12.
- 'Nature-based solutions' is the latest green jargon that means more than you might think. (2017), *Nature*, vol. 541, n. 7636, pp. 133-134.
- COHEN-SHACHAM E., WALTERS G., JANZEN C., MAGINNIS S., (2016), "Nature-based Solutions to Address Global Societal Challenges. Gland, Switzerland. <https://doi.org/10.2305/IUCN.CH.2016.13.EN>
- NESSHÖVER C., ASSMUTH T., IRVINE K.N., RUSCH G.M., WAYLEN K.A., DELBAERE B., HAASE D., JONES-WALTERS L., KEUNE H., KOVACS E., KRAUZE K., KÜLVIK M., REY F., VAN DIJK J., VISTAD O.I., WILKINSON M.E., WITTMER H. (2017), "The science, policy and practice of nature-based solutions: An interdisciplinary perspective", *Science of The Total Environment*, vol. 579, vol. 1215-1227.
- NEVENS F., FRANTZESKAKI N., GORISSEN L., LOORBACH D. (2013), "Urban Transition Labs: co-creating transformative action for sustainable cities", *Journal of Cleaner Production*, vol. 50, pp. 111-122.
- PAULEIT S., ZÖLCH T., HANSEN R., RANDRUP T.B., KONIJNENDIJK VAN DEN BOSCH C. (2017), "Nature-Based Solutions and Climate Change - Four Shades of Green", *Theory and Practice of Urban Sustainability Transitions*, pp. 29-49. https://doi.org/10.1007/978-3-319-56091-5_3
- PISTORIUS T., REINECKE S. (2013), "The interim REDD+ partnership: Boost for biodiversity safeguards?", *Forest Policy and Economics*, vol. 36, vol. 80-86.
- POTSCHIN M., KRETSCH C., HAINES-YOUNG R., FURMAN E., BERRY P., BARÓ F. (2016), "Nature-based solutions", In M. Potschin, & K. Jax (Eds.), Open- NESS ecosystem services reference book. EC FP7 Grant Agreement no. 308428. www.openness-project.eu/library/reference-book
- PRETTY J.N. (1995), "Participatory learning for sustainable agriculture", *World Development*, vol. 23, n. 8, pp. 1247-1263.
- RAYMOND C.M., CENTRE FOR ECOLOGY AND HYDROLOGY (2017a), An impact evaluation framework to support planning and evaluation of nature-based solutions projects: prepared by the EKLIPSE Expert Working Group on nature-based solutions to promote climate resilience in urban areas.
- RAYMOND C.M., FRANTZESKAKI N., KABISCH N., BERRY P., BREIL M., NITA M.R., GENELETTI D., CALFAPIETRA C. (2017b), "A framework for assessing and implementing the co-benefits of nature-based solutions in urban areas", *Environmental Science & Policy*, vol. 77, pp. 15-24.
- REED M.S. (2008), "Stakeholder participation for environmental management: A literature review", In *Biological Conservation*, Vol. 141, n. 10, pp. 2417-2431
- REED M. S., GRAVES A., DANDY N., POSTHUMUS H., HUBACEK K., MORRIS J., PRELL C., QUINN C.H., STRINGER L.C. (2009), "Who's in and why? A typology of stakeholder analysis methods for natural resource management", *Journal of Environmental Management*, vol. 90, n. 5, pp. 1933-1949.
- REGUERO B.G., BRESCH D.N., BECK M.W., CALIL J., MELIANE I. (2014), "Coastal risks, nature-based defenses and the economics of adaptation: an application in the gulf of Mexico, USA. <https://github.com/davidnbresch/climada>
- RICHARDS C., BLACKSTOCK K., MACAULAY C.C., CARTER C., SPASH C.L. (2004), Practical Approaches to Participation SERG Policy Brief.
- RUANGPAN L., VOJINOVIC Z., PLAVŠIĆ J., CURRAN A., ROSIC N., PUDAR R., SAVIC D., BRDJANOVIC D. (2024), "Economic assessment of nature-based solutions to reduce flood risk and enhance co-benefits", *Journal of Environmental Management*, vol. 352. <https://doi.org/10.1016/j.jenvman.2023.119985>
- SPALDING M.D., MCIVOR A.L., BECK M.W., KOCH E.W., MÖLLER I., REED D.J., RUBINOFF P., SPENCER T., TOLHURST T.J., WAMSLEY T.V., VAN WESENBECK B.K., WOLANSKI E., WOODROFFE C.D. (2014), "Coastal Ecosystems: A Critical Element of Risk Reduction", *Conservation Letters*, vol. 7, n. 3, pp. 293-301.

- TAYLOR L. (2016), “Case Study Methodology”, In N. Clifford M. Cope T. Gillespie, & S. French (Eds.), *Key Methods in Geography* (3rd ed., pp. 581-595), SAGE.
- TEMMERMAN S., MEIRE P., BOUMA T.J., HERMAN P.M.J., YSEBAERT T., DE VRIEND H.J. (2013), “Ecosystem-based coastal defence in the face of global change”, *Nature*, vol. 504, n. 7478, pp. 79-83.
- TIPPETT J., HANDLEY J.F., RAVETZ J. (2007), “Meeting the challenges of sustainable development-A conceptual appraisal of a new methodology for participatory ecological planning”, *Progress in Planning*, vol. 67, n. 1, pp. 9-98.
- VITI M., LÖWE R., SØRUP H.J.D., RASMUSSEN M., ARNBJERG-NIELSEN K., MCKNIGHT U.S. (2022), “Knowledge gaps and future research needs for assessing the non-market benefits of Nature-Based Solutions and Nature-Based Solution-like strategies”, In *Science of the Total Environment* (Vol. 841), Elsevier B.V. <https://doi.org/10.1016/j.scitotenv.2022.156636>
- YIN R.K. (1981), “The Case Study as a Serious Research Strategy”, *Knowledge*, vol. 3, n. 1, pp. 97-114.
- YOUNG J., RICHARDS C., FISCHER A., HALADA L., KULL T., KUZNIAR A., TARTES U., UZUNOV Y., WATT A. (2007), “Conflicts between biodiversity conservation and human activities in the central and eastern European countries”, In *Ambio*, Vol. 36, n. 7, pp. 545-550.

Una ipotesi di formalizzazione markoviana della dinamica delle unità operative nei cambiamenti organizzativi di ENEL S.p.A.

MARIO BRUNETTI¹ GIANLUCA VAGNANI²

Abstract

Il presente studio sviluppa una metodologia attraverso la quale valutare la dinamica delle strutture organizzative delle imprese, in particolare se questa dinamica si basa su un processo di Markov. La proposta metodologia è stata applicata al caso ENEL S.p.A. I risultati segnalano che rispetto a due dimensioni di merito, (dimensione e efficienza), solo la prima presenta un carattere sostanzialmente Markoviano. I risultati suggeriscono che l'efficienza delle unità organizzative è fortemente dipendente dal passato e quindi anche più difficilmente modificabile, anche in contesti strategici di rapido cambiamento.

Parole chiave: struttura organizzativa, dinamica evolutiva, processi di Markov, ENEL S.p.A.

Inquadramento della ricerca. Nel campo degli studi sull'economia e gestione delle imprese, gli studiosi hanno cercato di comprendere e prevedere le dinamiche delle strutture organizzative, qualificata dalle sue unità organizzative e relazioni tra le stesse, su cui si fonda l'impresa e il suo processo di produzione di beni e servizi (Baum and Singh, 1994; Golinelli et al., 2002; Komander and König, 2024). In questa prospettiva, alcune indagini sulla dinamica delle organizzazioni hanno enfatizzato l'idea di raccontare una storia, una cronologia di fatti accaduti, e attraverso questi accadimenti cogliere quanto singolarmente le trasformazioni si siano adattate o siano state influenzate dal contesto di riferimento, oppure quale può essere stato il contributo sul livello di efficienza di questa o quella struttura organizzativa, e così via (Hunziker and Blankenagel, 2024). A volte i periodi di vita delle singole fasi organizzative sono troppo brevi per un esame complessivo; in tal caso potrebbe essere più utile considerare una intera sequenza di trasformazioni organizzative abbracciando un arco temporale ampio e descrivere alcune caratteristiche salienti della traiettoria del sistema. Probabilmente è questa anche una condizione per comprendere logiche di fondo e "memoria passata" manifestata nel passaggio da una configurazione organizzativa alla successiva o alle successive. Qui per memoria passata dell'organizzazione è intesa, l'insieme di quei fattori che condizionano, limitano o più in generale ancora guidano il comportamento di una riorganizzazione e cosa trasporta con sé un cambiamento organizzativo (Walsh and Ungson, 2009; Sen et al., 2023). Nel contesto delineato, l'impiego dell'analisi markoviana presenta un approccio nuovo, offrendo un'interessante intersezione tra i processi markoviani e la teoria organizzativa. Fondamentalmente, un processo di Markov è un modello stocastico che prevede la probabilità di transizione da uno stato a un altro basandosi esclusivamente sullo stato attuale, ignorando il percorso che ha portato ad esso. Questo attributo, noto come proprietà di Markov, fornisce un quadro per la modellazione di sistemi dinamici che si evolvono nel tempo. Sebbene i processi di Markov abbiano tradizionalmente trovato applicazioni in campi che vanno dalla fisica all'economia, la loro incursione negli studi organizzativi è relativamente nascente. Il fascino principale dell'analisi markoviana in questo contesto risiede nella sua capacità di modellare l'evoluzione delle strutture organizzative, cogliendo i cambiamenti nei ruoli, nelle responsabilità e nelle interazioni (Castillo et al., 2021). L'importanza della struttura organizzativa non può essere sopravvalutata, poiché essa modella la distribuzione di ruoli, responsabilità e autorità all'interno di un'organizzazione (Caselli, 1966; Costa and Nacamulli, 1998). Vari modelli di strutture organizzative, come gerarchico, piatto o a matrice, influenzano in modo significativo l'efficacia e l'efficienza dell'impresa e quindi i suoi risultati correnti e prospettici. Pertanto, comprendere e prevedere i cambiamenti all'interno di queste strutture è fondamentale per la pianificazione strategica e l'efficienza operativa (Cafferata and Cibir, 2000). Tuttavia, l'applicazione dei processi markoviani alle strutture organizzative non è priva di difficoltà. La raccolta dei dati rappresenta un ostacolo significativo, poiché sono necessarie informazioni dettagliate sulle transizioni interne e sui cambiamenti organizzativi.

Obiettivo del paper. Il presente lavoro intende definire una metodologia atta a verificare se i cambiamenti della struttura organizzativa delle imprese segue o meno una dinamica Markoviana. L'obiettivo è stato calato nel quadro di una primaria impresa industriale, ENEL S.p.A., in un suo momento strategico particolarmente turbolento (fase di

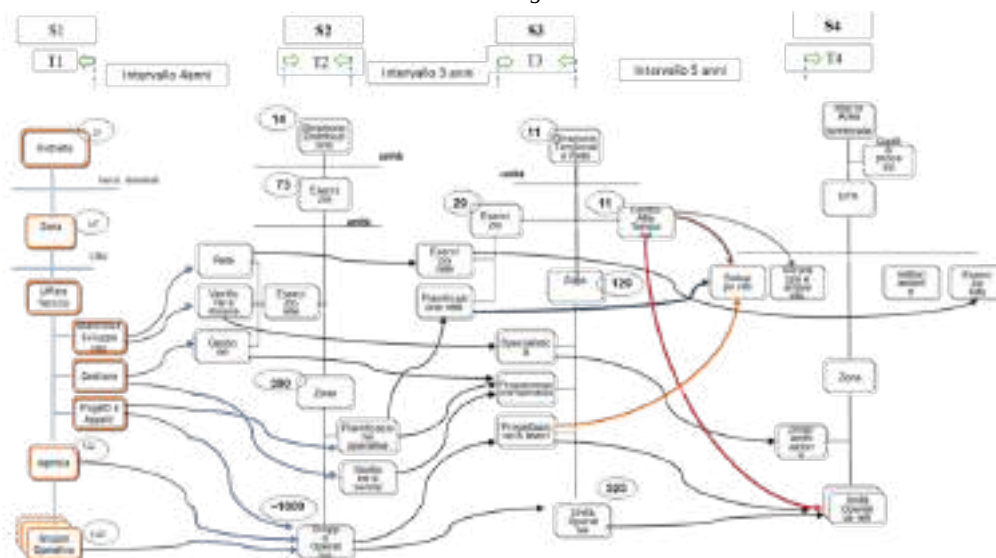
¹ e-mail: mario_brunetti@alice.it

² Sapienza Università di Roma
e-mail: gianluca.vagnani@uniroma1.it

liberalizzazione del mercato dell'energia e internazionalizzazione del gruppo) che ha richiesto intensi e radicali interventi, anche di diversificazione (Picone and Dagnino, 2016), a più riprese sia a livello di macro-scala del sistema organizzativo nel suo complesso sia incidendo sulle strutture operative territoriali. L'insieme di queste trasformazioni, operate con opportuna sinergia tra strutture centrali e territorio, che hanno riguardato a più riprese l'intera azienda, hanno generato impatti su strutture e persone, generando così un ricco insieme di dati e di informazioni sul quale costruire l'analisi qui proposta.

Metodologia. Un primo approccio per analizzare il processo di evoluzione è stato quello di analizzare, in un'ottica di caso di studio (Yin, 2009), le principali trasformazioni organizzative (geometrie delle strutture, livelli di responsabilità, politiche industriali, dati ecc.) che si sono susseguite con continuità nel periodo di maggiore turbolenza strategica determinando pesanti impatti su strutture e persone coinvolte. L'intero sistema ENEL era sottoposto in quegli anni ad una complessa dinamica sia a livello di macro-scala organizzativa relative agli anni 2003-2005, anche connesse all'acquisizione di società nei primi anni della fase di espansione internazionale di ENEL con ri-allocazione di società o aree di business. Contestualmente anche importanti strutture territoriali erano pienamente interessate. Per maggiore chiarezza espositiva di queste fasi sono stati ricostruiti e qui riportati i seguenti cicli corrispondenti agli anni 1999-2002 e dal 2002 al 2007 caratterizzati da forte turbolenza interna del sistema. La Figura 1 mette in evidenza il complesso intreccio organizzativo delle strutture territoriali di ENEL: le frecce indicano i flussi di comunicazione, le linee continue (verticali e orizzontali) rappresentano i legami gerarchici (linee verticali) o le "parentele" funzionali (orizzontali) tra le strutture. Infine i box corrispondono alle unità organizzative (funzioni, uffici, unità, ecc.).

Fig. 1. Un esempio di dinamica organizzativa che hanno fortemente interessato le strutture territoriali dell'area della distribuzione dell'energia elettrica



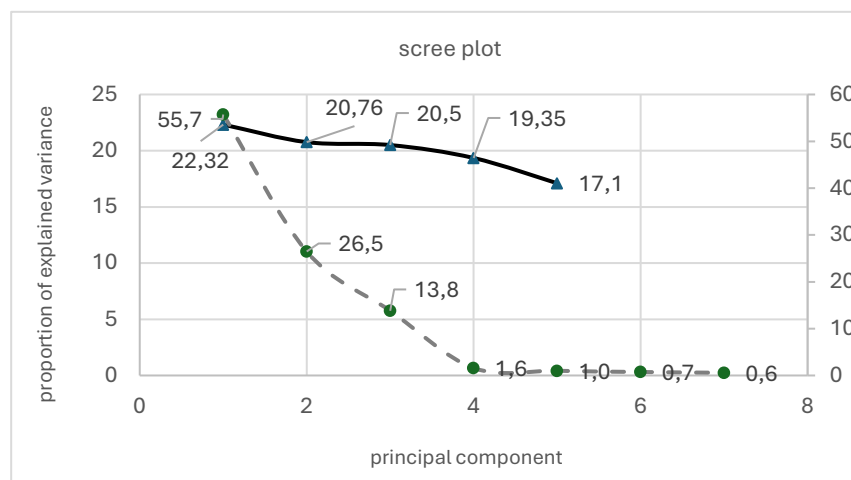
Nella rappresentazione Markoviana della dinamica organizzativa del caso considerato si è proceduto a individuare le unità organizzative comuni a tutti i periodi. Questa scelta è legata alla necessità di garantire che gli stati caratterizzanti l'organizzazione dell'impresa mantenessero una propria consistenza nel tempo. Ciascuna unità organizzativa è a sua volta rappresentabile da una n-upla di variabili strategiche di risultato, quali, per esempio, il numero di addetti, le quantità prodotte, numerosità dei clienti interni ed esterni serviti (Mocciaro Li Destri et al., 2012). La nostra serie è quindi rappresentata da una matrice multivariata che, per essere trattabile, richiede un'operazione di sintesi. Quest'ultima è stata svolta mediante l'analisi in componenti principali (Principal component analysis o PCA). L'idea di fondo è che le singole variabili non sono altro che viste differenti dello stesso sistema, ci si attende, quindi, che i loro valori si muovano in sincronia nel periodo analizzato. In termini statistici, nell'ambito di questo comportamento corrisponde all'emergere di poche componenti principali in cui si raccoglie gran parte dell'informazione presente nel campo di dati. La mutua correlazione tra le variabili fa sì che l'informazione inizialmente dispersa nella n-upla delle variabili iniziali possa essere condensata in poche componenti che spiegano una parte rilevante dell'informazione globale del sistema, cioè una "maggiore proporzione di varianza spiegata". Per questa loro caratteristica di massimizzazione della struttura di correlazione, le componenti ortogonali tra loro per costruzione, non sono altro che gli assi di un nuovo riferimento cartesiano (factor plane) e indicano le direzioni dello spazio delle fasi dove il sistema multidimensionale si correla maggiormente. La PCA è intesa pertanto come una rappresentazione relativistica, dove i posizionamenti nello spazio delle componenti dipendono dalla storia e dalle caratteristiche degli stessi dati esaminati. L'analisi fornisce semplicemente una "rilettura" statistica dei dati per una loro migliore comprensione, senza imporre scelte a priori, lasciando che ogni cosa emergesse dai dati in modo naturale. È in sintesi un cambio di prospettiva è quindi un modo per trarre il miglior aiuto nella interpretazione dei dati.

La presenza di aggregazioni notevoli nello spazio delle fasi corrisponde agli stati discreti visitati dal sistema nella sua evoluzione e sono appunto le probabilità (frequenze) di transizioni tra questi stati discreti a generare la matrice di

Markov. Con questo formalismo un sistema dinamico viene descritto attraverso la sua matrice di transizione, che rappresenta le probabilità condizionale del sistema di passare da un certo stato i al tempo t a un altro stato j (essendo ammessa anche l'identità $i=j$) al tempo $t+1$. Pertanto un prerequisito per l'applicazione di questa analisi è la possibilità di descrivere la dinamica mediante stati discreti nonché di suddividere il tempo in passaggi ugualmente discreti. Nell'impostazione qui adottata, gli stati discreti sono rappresentati dai valori (positivi o negativi) dei punteggi assegnati alle diverse unità organizzative considerate nel corso del tempo. A tal fine, i punteggi delle componenti sono espressi da variabili standardizzate a media zero e deviazione standard unitaria. Conseguentemente, la serie storica è stata analizzata in termini di probabilità di transizione a due stati (positivo/negativo) dei valori della serie. Le matrici corrispondono ad un diagramma dello spazio delle fasi avente come righe i valori X_t e come colonne i valori X_{t+1} , mentre i suoi elementi corrispondono a quanto osservato come probabilità condizionate $P(X_{t+1}=j | X_t=j_1, X_{t-1}=j_{t-1}, \dots, X_0=j_0)$ a passi temporali successivi. Il formalismo della matrice di transizione (o TM) è semplice, perché permette uno sguardo immediato alle caratteristiche fondamentali della dinamica studiata: se la storia precedente del fenomeno studiato non ha alcun effetto sul comportamento reale, allora le colonne della TM corrispondono a una probabilità generale dello stato corrispondente e le righe della TM riproducono semplicemente la distribuzione di probabilità tra gli stati. Questo tipo di comportamento viene definito una passeggiata casuale. Al contrario, se c'è una marcata deviazione da questo comportamento puramente casuale, può essere ipotizzato che esista una qualche forma di memoria del sistema e quindi di una misura di trascinamento di logiche organizzative e gestionali/operative nelle varie fasi analizzate. In altre parole, se le matrici di transizione a uno stadio e a due stadi tendono a produrre processi sostanzialmente equivalenti, allora è possibile concludere che il sistema considerato dipende soltanto dallo stato passato e non dalla storia complessiva considerata. Viceversa, differenze significative tra le due matrici di transizione a uno e a due stadi suggeriscono l'importanza della storia passata.

Risultati. Come osservato nella metodologia, il primo passo dell'analisi è l'applicazione della Principal Component analysis sulla n -upla di dati caratteristici delle singole unità organizzative considerate. Preliminarmente, occorre osservare che un punto importante è quello della differenziazione degli autovalori tra le diverse serie di dati: singoli numeri casuali e struttura organizzativa ENEL (vista al livello operativo). Qui per l'analisi delle due serie di dati è stata semplicemente presa a base la loro singola storia, ed appare subito evidente il diverso comportamento dei due sistemi osservando l'andamento delle curve riportate nel grafico (scree plot).

Fig. 2. Scree plot degli autovalori della serie di numeri casuali (linea nera solida) e di ENEL (linea tratteggiata grigia)



La Figura 2 mette a confronto gli autovalori (eigenvalues) della matrice di correlazione – proporzione di varianza spiegata da ciascuna componente – relativa a due diversi sistemi molto differenti: un sistema completamente stocastico (sequenza dei numeri estratti da una lotteria- punteggiata in triangoli), e il set dati relativi al sistema organizzativo (ENEL)-strutture operative. Assistiamo in questo caso ad una distribuzione degli autovalori (eigenvalues) della matrice di correlazione (proporzione di varianza spiegata) del tutto diversa, tanto da poter individuare nel caso ENEL una serie di fattori da “trattenere” per l'analisi, cercando i valori più grandi fino al punto in cui sono ben distinti e separati dagli autovalori più piccoli, che è possibile trascurare. I dati in Tabella 1 mostrano tra l'altro i valori della varianza spiegata cumulativa (cumulative explained variance) al crescere del numero delle componenti estratte. In particolare le prime tre componenti principali spiegano da sole già il 90% della variabilità totale del sistema organizzativo in studio.

Tab. 1. Autovalori (Eigenvalues) della matrice di correlazione e relativa proporzione di varianza spiegata

Component	Eigenvalue	Proportion	Cumulative
1	5,015	0,557	0,557
2	2,383	0,265	0,822
3	1,243	0,138	0,901
4	0,143	0,0159	0,976
5	0,090	0,0103	0,986
6	0,067	0,0074	0,993
7	0,052	0,00575	0,999
8	0,007	0,00078	1

Come era da attendersi per un sistema complesso organizzato come quello in esame l'analisi può essere focalizzata sulle prime tre componenti principali accettando una piccola dispersione dell'informazione contenuta nel sistema (10% circa) distribuita nelle altre componenti minori, tutte con valori singolarmente trascurabili e tali da poter essere considerate un rumore di fondo della serie dati. Decisa questa fase di analisi è necessario entrare ora in merito alle correlazioni tra le componenti (factor) e le variabili originali riportate nella matrice dei factor loadings (cfr. Tabella 2). Le variabili maggiormente correlate con le componenti forniranno gli elementi necessari per assegnare un significato alle componenti estratte. Questo è un passaggio fondamentale dell'analisi in componenti principali, quello di attribuire un significato (dei concreti legami relazionali) alle componenti estratte, sulla base sul "profilo dei loading", cioè sulle correlazioni tra le variabili originali e le componenti.

Tab. 2. Matrice dei factor loadings: coefficienti di correlazione fra variabili originali e componenti (Factor)

variabili	Factor1	Factor2	Factor3
Clients	0,882	0,412	0,128
Rete	0,744	0,382	-0,490
Densità (Clienti/Rete)	0,153	0,003	0,976
Addetti totali_unità	0,874	-0,476	0,035
Impiegati	0,801	-0,551	0,066
Operai	0,913	-0,354	-0,006
Clients /Addetti totali	0,067	0,945	0,158
Clients /addetti area distribuzione	0,665	0,721	0,046
Addetti unità/Addetti area distribuzione	0,987	-0,010	-0,017

Esaminando meglio i singoli valori della matrice dei factor loadings si nota come la prima componente mostra valori tutti positivi e questo conferma che il sistema presenta un fattore di scala in cui una grandezza influenza tutti gli altri indici. La prima componente (Factor 1) ha un coefficiente di correlazione vicino all'unità (massimo teorico) con le variabili Operai, Impiegati e Addetti totali, correlazioni molto elevate si osservano anche con le variabili Clienti e Rete. L'analisi si riferisce alle unità territoriali ENEL (Zone) ed è facile associare alla prima componente una misura di "Dimensione" delle unità. Il fatto poi che questo fattore sia registrato sia in termini di clienti sia in termini di numero di addetti, ci conforta su una sostanziale "coerenza media" fra dimensione organizzativa ed esigenze del territorio. Questa prima componente esprime quindi una sostanziale "variazione coerente" tra abitanti, clienti e impianti. Coerenza che è più evidente nel profilo dei loading di Factor 1, dove il numero di addetti delle unità è in linea con il numero dei clienti (0,874 vs. 0,882). La seconda componente (Factor 2) invece è molto correlata con due "variabili rapporto": clienti/addetti e clienti/addetti area distribuzione; essa è quindi direttamente rappresentativa dell'efficienza operativa differenziale tra le diverse unità poiché scala con la quantità di 'operazioni' per addetto. In termini fisici chiameremo la prima componente, l'intensità e la seconda la derivata di un campo. La terza componente (Factor 3), infine, è rappresentata dalla "pura" densità della copertura della rete elettrica sul territorio (massima correlazione con la variabile clienti/rete). Questa componente riflette le caratteristiche fisiche del territorio e conseguenti specificità legate alla tipologia di popolamento (aree più o meno rurali, presenza di aree industriali). Dipende insomma dalla morfologia fisica (e quindi dalla densità abitativa) del territorio ed è riconducibile a quello che possiamo chiamare "effetto territorio". Quest'ultima dimensione, data la sua natura esogena, non è stata ulteriormente considerata nell'analisi della dinamica Markoviana della struttura organizzativa di ENEL. Queste nuove dimensioni del sistema, indipendenti l'una dall'altra (per costruzione), forniscono una sorta di "regolarità dal basso". In altre parole, ogni componente equivale ad una struttura di relazione che il sottoinsieme di dati fa emergere come "regolarità", ed in sostanza riassume un concetto autonomo che raccoglie al suo interno uno schema di relazioni particolari (profilo di loading) tra le variabili originali. Il passaggio dalla serie dati alle componenti ha permesso in fondo di confrontarci con un segnale più chiaro rispetto alla serie dati originaria e comunque mantenere collegate le informazioni alla dimensionalità del sistema. Abbiamo pertanto a questo punto la possibilità di caratterizzare la dinamica lungo i factor score delle componenti trattate in termini di un processo markoviano al fine di verificare la possibilità di una caratterizzazione probabilistica della dinamica del sistema. In particolare, rispetto ai due fattori considerati, "Dimensione" e "Efficienza", si è proceduto alla costruzione delle matrici di transizione a 1-passo e a 2-passi. Le matrici sono riportate di seguito nelle Tabelle 3 e 4.

Tab. 3. Matrice di transizione calcolate sull'intero periodo 1997-2007 per il fattore "Dimensione"

1-passo			2-passi			
	>0	<0			>0	<0
>0	0,180	0,819	>0	>0	0,583	0,417
<0	0,388	0,611	>0	<0	0,581	0,419
			<0	>0	0,311	0,689
			<0	<0	0,038	0,962

Tab. 4. Matrice di transizione calcolate sull'intero periodo 1997-2007 per il fattore "Efficienza"

1-passo			2-passi			
	>0	<0			>0	<0
>0	0,944	0,055	>0	>0	1	0
<0	0,427	0,572	>0	<0	1	0
			<0	>0	1	0
			<0	<0	0,723	0,277

Sulle matrici di transizioni a 1 e 2-passi è stata poi simulata, in 1000 prove indipendenti, l'evoluzione dei due fattori. Le serie simulate originanti dalle matrici a 1 e 2-passi sono state comparate attraverso il test non parametrico di Kolmogorov-Smirnov (K-S). Da questo test si osserva che rispetto al fattore "Dimensione" le due serie simulate generate dalle matrici di transizione a 1 e 2-passi sono differenti, sebbene con un livello di confidenza del 95% (Combined K-S = .461, $p=0.02$). Rispetto al fattore "Efficienza", le differenze sono assai più marcate e significative (Combined K-S = .1671, $p<.0001$). Dunque, rispetto alla "Dimensione" il processo presenta dei tratti tendenzialmente Markoviani, con la storia recente che è sostanzialmente rilevante. Differentemente per il fattore "Efficienza", in cui la sostanziale differenza dei risultati dell'evoluzione del sistema così come ottenuta nelle matrici a 1 e 2 passi, evidenza che la storia passata è assai rilevante e condizionante la dinamica futura.

Limiti. Il presente lavoro si basa su un caso di studio, sebbene rilevante, in un periodo di intenso cambiamento, che tuttavia fornisce un laboratorio interessante per cogliere le variazioni organizzative e quindi rappresentarle in un'ottica di processo Markoviano. In aggiunta, la dinamica organizzativa di una impresa è influenzata da condizioni specifiche della tecnologia di produzione così come di fattori istituzionali di conteso. In questo senso, la sostanziale dipendenza dal passato dell'efficienza potrebbe essere il portato di inerzie che traggono origine dal contesto istituzionale di riferimento, così come dalla tecnologia di produzione adottata. In questo senso, studi successivi potrebbero adottare la metodologia proposta a casi diversi operanti in settori e contesti diversi, valutando, così, come fattori specifici a livello di impresa, settore e contesto istituzionale sono in grado di spiegare la Markovianità o meno di determinati processi a livello di struttura organizzativa di una impresa.

Implicazioni manageriali. Le organizzazioni sono fatte di persone e dalle persone, e sono proprio loro a mantenere sia la memoria delle trasformazioni che ad attuare il cambiamento stesso una volta che ne abbiano assimilato e fatta propria la necessità. Il lavoro proposto e l'approccio Markoviano delle dinamiche organizzative delle unità territoriali di una importante area di responsabilità di ENEL (area della distribuzione) e che copre un decennio di grandi cambiamenti vuole essere principalmente un tributo alle tante persone (circa 40000 persone coinvolte a più riprese) che con tutte le loro speranze e aspirazioni, ma anche preoccupazioni, ebbero la forza di mettersi in gioco (con cambi di responsabilità, luogo di lavoro). Un elemento iniziale da richiamare riguarda la differenza tra il fattore Dimensione (Factor 1) dove è più "facile" indirizzare strategie e comportamenti con cambiamenti di percorso anche abbastanza repentini, (maggiore possibilità di agire sulla leva dimensionale delle unità organizzative), mentre per quanto riguarda i complessi e "sensibili" meccanismi di gestione legati all'efficienza operativa (Factor 2), strettamente connessa alla risorsa "Personale", il sistema mostra maggiore resilienza e quindi minori "gradi di libertà". Questa minore plasticità della variabile "Personale" crediamo sia da leggere anche nella salutare presenza di garanzie per i lavoratori occupati.

Originalità del paper. Il presente lavoro introduce una metodologia per indagare il carattere Markoviano dei processi di evoluzione della struttura organizzativa di una impresa in presenza di cambiamenti strategici. Questa metodologia non è limitata al caso di studio considerato, bensì può essere estesa ed applicabile a casi diversi. Il nostro contributo offre anche evidenze empiriche sulla dinamica delle organizzazioni, evidenziando come la storia passata influenza questa dinamica in modo differente in funzione del parametro di misura considerato.

Bibliografia

- BAUM J.A., SINGH J.V. (1994), *Evolutionary dynamics of organizations*, Oxford University Press.
CAFFERATA R., CIBIN R. (2000), *Strategia e struttura dell'ENI a seguito della privatizzazione, Economia e diritto nella privatizzazione delle imprese italiane*, Giappichelli, pp. 7-39.
CASELLI L. (1966), *Teoria dell'organizzazione e processi decisionali nell'impresa*, Giappichelli Ed.
CASTILLO C., FERNANDEZ V., LORDAN O. (2021), "A Markovian-based simulation model for the evolution of employees' emotional states during an organizational change", *Polish Journal of Management Studies*, vol. 23, n. 1, pp. 119-135.

- COSTA G., NACAMULLI R. (1998), *Manuale di organizzazione aziendale*, Utet, Torino.
- GOLINELLI G., GATTI M., VAGNANI G. (2002), Dalla struttura al sistema: elementi per una riflessione sui confini, i rapporti con la proprietà, la flessibilità e l'elasticità dell'impresa, *L'approccio sistemico al governo dell'impresa-Valorizzazione delle capacità, rapporti intersistemici e rischio nell'azione di governo*, Cedam, vol. 3, pp. 12-133.
- HUNZIKER S., BLANKENAGEL M. (2024), Cross-sectional research design, *Research Design in Business and Management: A Practical Guide for Students and Researchers*, Springer, pp. 187-199.
- KOMANDER V., KÖNIG A. (2024), "Organizations on stage: organizational research and the performing arts", *Management Review Quarterly*, vol. 74, n. 1, pp. 303-352.
- MOCCIARO LI DESTRI A., PICONE P.M., MINÀ A. (2012), "Bringing strategy back into financial systems of performance measurement: Integrating EVA and PBC", *Business System Review*, vol. 1, n. 1, pp. 85-102.
- PICONE P.M., DAGNINO G.B. (2016), "Revamping research on unrelated diversification strategy: perspectives, opportunities and challenges for future inquiry", *Journal of Management & Governance*, vol. 20, n., pp. 413-445.
- SEN C., ARUN K., OKUN O. (2023), "Organizational memory: a qualitative research study on a multi-cultural organization", *Kybernetes*, vol. 52, n. 4, pp. 1528-1551.
- WALSH J.P., UNGSON G.R. (2009), Organizational memory, *Knowledge in Organisations*, Routledge, pp. 177-212.
- YIN R.K. (2009), *Case study research: Design and methods*, Sage, Thousand Oaks, CA

Empowering women workforce in steel production: A case study on implementing Diversity, Equity and Inclusion (DEI) initiatives

LAURA TOLETTINI¹ ELEONORA DI MARIA² EMILIA FILIPPI³ LETIZIA LO PREIATO⁴
MARIAASOLE BANNÒ⁵

Abstract

The steel industry is facing numerous challenges. The most well-known are related to environmental sustainability, but fewer know how social challenges are growing in importance, especially those related to Diversity, Equity and Inclusion (DEI). The pursuit of new skills and competencies, along with the establishment of a more equitable environment, even in traditionally male-dominated sectors like the steel industry, aims to foster a more sustainable economic system. A path on DEI can become a strategic business lever, especially if we think about opening new job market opportunities by experimenting with women's empowerment in production. To understand the importance of DEI initiatives, we present and analyze the case study of SpectrumSteel Industries⁶, a leader in the European steel market. The introduction of DEI initiatives in SpectrumSteel Industries is still ongoing. Still, results highlight that women's competencies can bring positive impetus to a historically male-dominated sector, also enhancing the importance of more automated processes and machines, underscoring benefits for the whole population.

Key words: Steel industry; Diversity, Equity and Inclusion initiatives; Women in production; Case study

Framing of the research. *The steel industry represents an essential industrial and economic sector, embracing a range of products which are indispensable every day (World Steel Association a 2023). The steel industry is the backbone of the European economy (Eurofer 2022). The European Union (EU) was established as a result of the pivotal role played by steel. In 1951, the founding states of the EU signed the treaty of the European Coal and Steel Community, which aimed to collectively manage the coal and steel industries. The European steel industry is guiding the world through its commitment in technological and digital innovation and environmental sustainability (Eurofer 2023). The EU steel sector employs about 306,000 highly-skilled people and has a turnover of around €130 billion, with an average yearly production of 152 million tons of steel per year and more than 500 steel production sites (Eurofer 2023). Germany and Italy are among the first twenty top world producers (World Steel Association b 2023). Specifically, in 2022 Italy maintained its 11th position among the world top producers, with 21.6 million tons (16% of the world production) (Federacciai 2022).*

The steel industry is recognized to be a male-dominated industry, where the definition of male-dominated refers to the lack of presence of women at all levels of the organization, from managers to employees (Australian Human Rights Commission, 2013; Salminen-Karlsson 2020). Increasing the number of women in the steel industry is not only an issue about the abolition of gender segregations, and reaching the Agenda 2030 goals, but also an opportunity to attract different skills and competencies (Torre 2017; Salminen-Karlsson 2020). Unfortunately, introducing women in a male-dominated industry is not simple as hiring other worker categories. Women often represent the minority and this may have negative consequences such as exclusion dynamics, greater stress, discomfort, and isolation (Salminen-Karlsson 2020; Torre 2017).

¹ University of Padova
e-mail: laura.tolettini@studenti.unipd.it

² University of Padova
e-mail: eleonora.dimaria@unipd.it

³ University of Brescia
e-mail: emilia.filippi@unibs.it

⁴ University of Brescia
e-mail: letizia.lopreiato@unibs.it

⁵ University of Brescia
e-mail: mariasole.banno@unibs.it

⁶ SpectrumSteel Industries is a fictitious name used to maintain anonymity.

Group dynamics are primarily influenced by the size and composition of the group. In such dynamics, the minority individuals often find themselves isolated or compelled to conform to the majority's behavior (e.g. Kanter in 1977, Tanford and Penrod 1984; Mathisen et al. 2013). Moreover, people in the minority group are often seen as tokens (Kanter 1977, Torre 2017; Salminen-Karlsson 2020). The concept of token was introduced for the first time by Kanter (1977): when a minority is introduced in a homogeneous group, it is perceived only through the “diverse” character. When diversity is given by gender, women are identified only by their sex, men emphasize this difference, and gender stereotypes are exacerbated (Konrad et al. 2008). All these mechanisms enhance women’s pressure and their perception of being “controlled” (Kanter, 1977; Torchia et al., 2011; Holgersson and Romani 2020). In addition to the underrepresentation of women, the presence of masculine norms in an organization is another important mechanism that exacerbates the tokenism faced by women (Holgersson and Romani 2020; Salminen-Karlsson 2020). Masculine norms are the processes by which men’s experiences, point of view and subjectivity become universalized and accepted as a common way of life (Lewis and Simpson 2012). Moreover, masculine norms contribute to maintaining hidden male-privilege and identifying the minority group as a threat that can challenge this situation of privilege (Lewis and Simpson 2012). This leads to the possibility that the majority group (i.e., men) do not accept the minority group (i.e., women) and obstacles it, making it invisible (Salminen-Karlsson 2020).

In this unbalanced situation, organizations have a decisive role. The cultural orientation of organizations can greatly influence women's work experience and encourage them to enter and remain in male-dominated industries (Harman and Sealy 2017). This cultural orientation encompass various factors that can enhance the inclusion of women such as management style (e.g., equity, informality, flexibility), language and communication, and gender awareness (e.g., recruitment, ambassadors), background attributes (e.g. location, ownership and workplace organization) (Rutherford 2001; Holgersson and Romani 2020). Implementing these types of measures can interrupt the perpetuation of masculine norms, expose these norms, and openly challenge them, suggesting that the organization perpetuates a gender equity narrative (Holgersson and Romani 2020). Although at the beginning the majority group (i.e., men) may not agree with these actions, this orientation perpetuated from the management team (reflected also in operational actions) becomes a reference point for employees’ behaviors (Holgersson and Romani 2020). This sort of normative control forces employees to internalize gender equality culture, promoting a comfortable environment for both men and women (Holgersson and Romani 2020).

To effectively promote Diversity, Equity, and Inclusion (DEI) within the organization, it is crucial to develop a comprehensive strategy that focuses on increasing the representation of women in the workforce. Several workplace initiatives and mechanisms can be introduced in particular in four areas: attraction, recruitment, retention, and development (Australian Human Rights Commission 2013). Specifically :

- Attraction strategies aim to remove the negative perception that women may have about male-dominated industries and, more generally, men and society have about women’s presence in these industries. Their purpose is also to promote the benefits of working in these industries and the existing career prospects;
- Recruitment strategies are designed to verify if the existing interview and selection process is already inclusive or if it needs to be changed in this direction. Another objective is to expand the range of skills that potential candidates, especially women, are expected to possess;
- Retention strategies aim to change firm’s culture towards DEI and to maintain it during the employment and career development;
- Finally, development strategies are put into action to establish a promotion system that is both transparent and inclusive. This system aims to provide women with the opportunity to participate in the necessary training and development programs in order to progress in their careers within the company.

Within these four areas, several initiatives can be designed and implemented. Their identification and success strongly depends on the objectives and characteristics of the steel mill.

Purpose of the paper. This paper aims to describe and analyze how SpectrumSteel Industries⁷, a steel mill operating in Northern Italy, has introduced DEI initiatives and what are the initial results obtained.

The origins of SpectrumSteel Industries can be traced back to a long-standing steel tradition, spearheaded by a woman who was the mother of the company's founder. She played a significant role in managing the family forge during the 1940s. In the Fifties, the founder took over the family forge. Later, SpectrumSteel Industries expanded until the first new steel complex was created, comprising two steel plants and two rolling-mills running in two different sites not far away from each other. From the Eighties, SpectrumSteel Industries focused its development into four streams: internationalization with the acquisition of production sites in Europe, verticalization to integrate the entire production cycle, and diversification by enlarging the core business of standard construction steel into special steel, and sustainability with a particular attention to environmental protection and work quality improvement. Today, SpectrumSteel Industries has a production capacity of more than 2 million tons of steel per year, by employing more than 1,500 employees in Europe and registering more than 2 billion euro of turnover (SpectrumSteel Industries 2023).

SpectrumSteel Industries operates in Northern Italy, which has a long tradition in steel production (Fondazione Biblioteca Archivio Luigi Micheletti n.d.). SpectrumSteel Industries is based in a province with a long tradition in steelmaking. This province is currently leading the steel industry in Italy (Fondazione Biblioteca Archivio Luigi Micheletti n.d.). In 2011, the women employment rate in this province was 40.1% compared to 56.9% of the men workforce (Istat

⁷ SpectrumSteel Industries is a fictitious name used to maintain anonymity.

2011). In Italy, the employment rate of women aged 20-64 years old was 55% at the end of 2022, under the EU average of 69.3% (Eurostat). The Italian average of women employment is one of the lowest among EU states (Eurostat 2022).

The Italian steel industry employed 30.4 thousand employees in 2020 and was the second largest steel market in the European Union (Federacciai 2021). This sector has a great potential of opening its labor market to women workforce: 92% of the workforce consists of men, while women account for only 8% (Federacciai 2021). This gender composition is a result of the cultural heritage of the sector, well-known as a male dominated sector, despite its technological development in the field of a more automated and safer workplace (Federacciai 2021). Nevertheless, during the 2018-2020 period, women employment increased by 1.9%, while men employment decreased by 1.8% (Federacciai 2021), revealing how the engagement in such a diversity topic could have great economic potential for such a sector. Recent research discussions are focused on how Industry 4.0, in particular automation, can be potential enablers of equal work in terms of gender (Metha et al. 2021).

The description of the context in which SpectrumSteel Industries is active underscores how the introduction of DEI initiatives has taken place within an industry of significant employment importance. However, SpectrumSteel Industries operates in an industry where the women workforce comprises less than 10%, and even less if we consider data on primary steel route (i.e. core production, such as still mill and rolling mill) (Istat 2021). The context in which SpectrumSteel Industries operates makes this case study particularly intriguing, as the firm has had to confront two types of resistance in promoting women's employment in production: one stemming from the industry itself and the other from the broader operating context.

Based on this premise, this case study aims to answer this research question: How can a DEI policy be effectively implemented within a firm operating in a male-dominated industry, starting from management awareness (on topics like attraction, recruitment, retention and development) and extending to the implementation of DEI initiatives?

Methodology. The methodology adopted for this case study is described with regard to data collection and data analysis.

Data collection. Three data sources were used to gather relevant information. Data collection began with archival data such as non-financial disclosure, website, and generalist and specialized press (Vaara and Lamberg 2016). These sources were extremely useful to familiarize with the setting as they describe SpectrumSteel Industries, its production activities, and its DEI initiatives.

We also conducted 11 semi-structured interviews with firm owners, top managers, and middle managers. We selected this interview format because it allows for an unrestricted and thorough expression of viewpoints, facilitating the gathering of diverse insights regarding the decision-making process that prompted SpectrumSteel Industries to embark on DEI initiatives (Rowley 2012). We interviewed people in different hierarchical positions and with different functional roles to explore their different points of views and to collect insights about the strategic, managerial, and operating issues (i.e. attraction, recruitment, retention, development) regarding the introduction of DEI initiatives (Bryman and Bell 2015).

Before the interviews, we met the interviewees several times to establish a trusting relationship (Mellon 1990). Relying on previous studies, we developed an interview guideline to cover all pertinent topics, which was shared with the interviewees before conducting the interview.

During the interviews, we implemented a courtroom-style procedure and ensured that at least one of the authors was present with the aim of mitigating subjectivity (Bingham and Eisenhardt 2011). We also tried to collect detailed information by posing additional questions or asking for clarification if necessary.

Particular attention was paid to achieving convergence through data saturation (i.e., to achieve a point where further data collection is unnecessary as no additional information is being found) (Glaser and Strauss 1967; Saunders et al. 2017).

Concurrently with the collection of archival data and the interviews, we visited the plant several times to directly observe the fieldwork (Corbetta 2003). This deepened our understanding of the context as we observed the behavior and reactions of top and middle managers and employees during the process of introducing DEI initiatives.

The integration of several types of data (i.e., archival data, interviews, and direct observation) is considered essential to understand management phenomena (Argyres et al. 2020). Moreover, this integration enabled data triangulation, i.e., comparisons between information obtained from different sources (Lee et al. 1999).

Data collection lasted more than one year. The collection of longitudinal qualitative data enabled us to develop a process model (Glaser and Strauss 1967; Langley et al. 2013) describing the entire process.

Data analysis. To mitigate interpretation biases, only a subset of the authors utilized the transcribed notes to reconstruct the process of introduction of DEI initiatives and the behavior and reactions of firm owners, top managers, and middle managers (Corbin and Strauss 2015).

Results. SpectrumSteel Industries started its DEI path with the Code of Ethics in 2018, establishing that discrimination is not accepted within the firm. In 2020, SpectrumSteel Industries subscribed to the Charta for gender equity and no discrimination in the workplace. This Charta is a declaration of intent, voluntarily signed by firms of all sizes, for the dissemination of a corporate culture and inclusive policies, free of discrimination and prejudice, capable of valuing talent in all its diversity. In 2021, SpectrumSteel Industries created a DEI policy to promote an inclusive leadership, gender equity in the workplace, a global culture in firm plants, and firm's responsibility towards its internal and external community. In 2022, the firm introduced a Sustainability Committee to pursue ESG scorecards supporting

the industrial plan of the Group, with DEI values playing an important role. In 2023, the Diversity, Equity, Inclusion and Welfare division was created with the goal to gradually implement a DEI strategy and collect all current projects under the main categories of the policy.

SpectrumSteel Industries views the enhancement of diversity, equity, and inclusion (DEI) as a crucial component of its ESG (Environmental, Social, and Governance) strategy. This strategic focus aligns with the company's history, purpose, and vision to foster growth and cultivate positive relationships with employees and external stakeholders, such as suppliers, customers, and local communities. By prioritizing DEI, SpectrumSteel Industries aims to create new opportunities for market expansion and the recruitment of talented individuals.

In the following paragraphs, we present the results in the efforts of SpectrumSteel Industries to create an equal working environment, by considering the whole employee lifecycle (attraction recruitment, retention, development), and especially starting by the experience of female workforce in the primary steel route. We also report some extracts of semi-structured interviews, which were processed by integrating archival data and direct observation⁸.

Within the next 4 years, SpectrumSteel Industries aims to register a level of women occupation that is ten times the mean value in the steel industry in the primary route. To reach this goal, SpectrumSteel Industries is implementing several initiatives to orient the organizational culture towards DEI and increase women's presence in the workforce.

"For me, gender equity is breaking down an open door. I believe you can find greater efficiency with people of different genders at the workplace" (Interviewee B - Director - Production)

"Women in production means for the steel sector enhancing its business continuity, to guarantee a future for the next generations of our sector. I have to open my context to other people, not only men... This means a cultural change" (Interviewee E - Director - Sales).

Since the beginning, SpectrumSteel Industries has been aware of the challenges implied in this cultural process, including the long journey required and the eventual difficulties to be faced in order for the change to be accepted.

AN ORGANIZATIONAL CULTURAL PATH TOWARDS DEI THROUGH FEMALE WORKFORCE EMPOWERMENT.

In order to disseminate the DEI values throughout the company, SpectrumSteel Industries established a team of DEI ambassadors who represent all subsidiaries of the Group. Its task is to identify the opportunities and challenges regarding DEI topics. Specifically, this group should recognize the value of diversity and share experience in the organization, actively promoting and upholding DEI principles within the firm and in the future with stakeholders in the value chain (from suppliers to customers), propose shared and constructive solutions to make corporate governance increasingly inclusive, actively contribute to internal communication of DEI issues, and communicate business issues in an inclusive manner.

In addition to the establishment of this group of DEI ambassadors, other initiatives have been undertaken to orient the organizational culture towards DEI. A four-year training program on DEI topics has been introduced for the entire workforce, from firm executives to blue-collars. International experts on DEI issues have been engaged, and an innovative coaching methodology has been employed, starting from individual resources on inclusion already present in everyone (a so-called "inclusion x-factor"⁹). Managers and executives benefited from a supplementary and more specialized training program to ignite the change towards DEI.

Although women were already employed as crane drivers and quality laboratory technicians in some subsidiaries, the parent firm still had a significantly low representation of women. SpectrumSteel Industries therefore decided to design, together with a qualified partner, a program aimed at introducing women in production starting from the parent firm. The big challenge in this program is to specifically introduce women in the primary steel route, completely male-dominated. The program began in 2023 and is still in development. To date, some positive results have already been recorded and some women workers have been employed in production. Consequently, the parent firm decided to make a further implementation in other subsidiaries. Specifically, to increase women's presence in production in the primary steel route, SpectrumSteel Industries designed some initiatives in four areas, accompanied by a consultancy firm specialized on DEI issues: attraction, recruitment, retention, and development. We specify that SpectrumSteel Industries is planning a technological shift to reach decarbonization goals, with a massive investment plan in different strategic sites, thus needing to open to new competences and job market opportunities, like targeting women and people with different ethnicities.

ATTRACTION. Among attraction strategies, SpectrumSteel Industries started with an analysis of jobs in primary steel route from different perspectives. This analysis was performed by an internal task force composed of different functions with the aim of assuring job positions for women also according to normative, security and health conditions. With the goal to be successful in such a new project of empowerment of female workforce in the heart of steel production, SpectrumSteel Industries collaborated with a reputable partner to showcase employment prospects. It also implemented proactive actions such as a LinkedIn campaign and Open Days to change firm image and appeal to women candidates and in this way, it successfully attracted over hundreds of women candidates.

⁸ Extracts from interviews: A, B, D (Directors of production), C (Energy manager), E (Sales Director), F (General Manager).

⁹ The inclusion x-factor is meant to be the inner and natural resource and attitude of integration possessed by anyone of us.

“Today's steelmaking is different: safer, digital and more inclusive than in the past. And not only to women. Talent and merit know no gender.” (Interviewee F - General Manager)

RECRUITMENT. Recruitment strategies are designed to assure that the selection process is inclusive and to broaden the skills required of women potential candidates. In this regard, the Human resources department of SpectrumSteel Industries is thinking about improving women recruitment not only in primary steel route production, but also through the recruitment of young women as technicians and engineers.

“If we want more women in production, we have to modify our recruitment process and to make some internal organizational changes. We see women are now attracted by jobs once were of men. For example crane drivers, from an operative and mentality point of view, women can be more efficient than men.” (Interviewee D - Director - Production)

Furthermore, a new project together with a network of other partners has been launched to create a model of recruiting and retaining individuals from vulnerable or disadvantaged backgrounds, aiming to provide opportunities for those often overlooked in traditional hiring processes.

RETENTION. Retention strategies aim to change organizational culture towards DEI. The group of ambassadors has the main objective of orienting the organizational culture towards DEI, contributing with initiatives and suggestions to the future design of a more structured firm's DEI strategy. This group has organized sensitization campaigns to raise awareness against gender-based violence and the “Friday of Inclusion”, a monthly newsletter aimed at raising awareness of DEI topics with the help of well-known movies. Moreover, after the periodical internal climate survey, some measures in hourly flexibility (i.e., part-time and home working) were made available by the organization for newly become parents. Lastly, several women-friendly initiatives have been introduced, including the modifications to the toilets and changing rooms to make them more comfortable for women, parking lots near the exits reserved for women, and free medical screenings (e.g., breast cancer control).

Concerning the project of female empowerment in primary steel route jobs, several were the moments of focus groups and coaching sessions both for male and female colleagues, in order to accompany the process of cultural change in a historically dominated male world.

“Women have different perspectives and competences who can enrich the organization. I believe in the future we will see a woman as shift leader “ (Interviewee A - Director - Production).

“As a manager, you need to exploit the differences of competences in your employees, also due to gender differences, to have a successful working environment. For years, I have chosen only women employees because they are more efficient. In our company, there are countless positions that can benefit from women's presence, in processes, for example, quality control.” (Interviewee B - Director - Production).

DEVELOPMENT. Lastly, development strategies aim to design a transparent and inclusive promotion system. At the very beginning of the working experience, a training program on steel production is offered to groups of new workers, to acquire all the relevant information and competences about steel making. In the specific case of female workforce in the primary steel route, an individual coaching was offered periodically to women in order to make them aware of challenges and potentials of the steel environment and obtain more chances of integration within the organization. Moreover, at SpectrumSteel Industries some strategic positions in technical and economic departments are held by women.

“Women do not have first to make limitations on themselves at the workplace, on their career. As a woman, I do not give such a great importance to gender differences.” (Interviewee C - Manager - Energy)

Women candidates were actively involved in succession planning paths.

The efforts of SpectrumSteel Industries in its DEI initiatives, especially looking at the empowerment of women workforce in production, may have a great impact not only on the firm's desire to become a more attractive employer for the province, but also on the possibility to open new opportunities in the recruitment and in the job market.

Research limitations. The introduction of DEI initiatives at SpectrumSteel Industries is still in its early stages. Many phases of the project have yet to be implemented. Therefore, it is not possible to make a final assessment of the results, but rather only an interim assessment focused on the initial stages. SpectrumSteel Industries estimates that the final evaluation can only be made in the medium term, in 3/4 years.

Another limitation of this case study is that interviews were especially conducted with the firm owners, top management, and middle management. For a comprehensive evaluation of the effectiveness of DEI initiatives and any improvements to be made, it is essential to gather the opinions of those directly involved, namely women employees. Additionally, it would be intriguing to assess the reactions of male employees towards these initiatives.

Managerial implications. The analysis of SpectrumSteel Industries's experience in introducing DEI initiatives has several managerial implications. Primarily, it allows us to discern the most effective endeavors and those that have demonstrated negative outcomes, recognize the potential obstacles that may arise during their implementation and strategies to overcome them, and comprehend the workforce's responses to these endeavors. Second, the achievements of SpectrumSteel Industries can serve as encouragement for other steel mills and firms in other male-dominated sectors (e.g., cement, construction, chemical, oil and gas industries) to introduce DEI initiatives aimed at promoting women's presence within the firm. This successful case could serve as a significant catalyst in institutional settings where additional endeavors are required to attain the inclusion of women in traditionally male-dominated environments and positions. Third, this case study could serve as a model for firms looking to undertake DEI initiatives.

Originality of the paper. SpectrumSteel Industries represents a highly valuable case study to be analyzed and evaluated. SpectrumSteel Industries is the pioneering steel mill in Italy to implement DEI initiatives in the steel industry, specifically aimed at promoting women's participation in production. Despite facing resistance from both the male-dominated industry and the broader operating context, SpectrumSteel Industries introduced these initiatives. The industry has a low percentage of women employment, while the overall employment rate for women is significantly lower compared to men. These initiatives were introduced despite SpectrumSteel Industries facing two types of resistance: one stemming from the industry itself, which is a male-dominated industry with a low percentage of women employment; one stemming from the broader operating context, characterized by a substantially lower women employment rate compared to that of men.

References

- ARGYRES N.S., DE MASSIS A., FOSS N.J., FRATTINI F., JONES G., SILVERMAN B.S. (2020), "History-informed strategy research: the promise of history and historical research methods in advancing strategy scholarship", *Strategic Management Journal*, vol. 41, n. 3, pp. 343-368.
- AUSTRALIAN HUMAN RIGHTS COMMISSION (2013), *Women in male-dominated industries. A toolkit of strategies*. Australian Government. Department of Family, Housing, Community Services and Indigenous Affairs. Retrieved from <https://humanrights.gov.au/our-work/sex-discrimination/publications/women-male-dominated-industries-toolkit-strategies-2013> (09.03.2024).
- BINGHAM C.B., EISENHARDT K.M. (2011), "Rational heuristics: the "simple rules" that strategists learn from process experience", *Strategic Management Journal*, vol. 32, n. 13, pp. 1437-1464.
- BRYMAN A., BELL E. (2015), *Business Research Methods*, 4th ed., Oxford University Press, Oxford.
- CORBETTA P. (2003), *Social research: theory, methods and techniques*, 1 ed., SAGE, London.
- CORBIN J.M., STRAUSS A.L. (2015), *Basics of qualitative research: techniques and procedures for developing grounded theory*, Fourth edition., SAGE, Los Angeles.
- EUROFER (2022). *Annual Report 2022*. The European Steel Association. Retrieved from www.eurofer.eu (09.03.2024).
- EUROFER (2023). *European Steel in Figures 2023*. The European Steel Association. EUROFER AISBL. Retrieved from www.eurofer.eu (09.03.2024).
- EUROPEAN UNION (2023). *History of the European Union 1945-59. Peace in Europe and the beginnings of cooperation*. Retrieved from https://european-union.europa.eu/principles-countries-history/history-eu/1945-59_principles-countries-history/history-eu/1945-59_en (09.03.2024).
- EUROSTAT (2022). *Employment annual statistics*. Retrieved from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Employment_-_annual_statistics#Employment_in_2022_compared_with_the_EU_target (13.03.24).
- FEDERACCIAI (2021). *Rapporto di sostenibilità 2021*. Retrieved from www.federacciai.it (09.03.24).
- FEDERACCIAI (2022). *L'industria siderurgica italiana 2022. Relazione Annuale 2022*. Retrieved from www.federacciai.it (09.03.24).
- FONDAZIONE BIBLIOTECA ARCHIVIO LUIGI MICHELETTI (n.d.). *I Bresciani. Imprenditoria, professionalità, tecnologia nel caso della siderurgia bresciana (1945-1996)*. Giorgio Pedrocchi.
- GLASER B.G., STRAUSS A.L. (1967), *The discovery of grounded theory: strategies for qualitative research*, Aldine Transaction, New Brunswick.
- HARMAN C., SEALY R. (2017), "Opt-in or opt-out: exploring how women construe their ambition at early career stages", *Career Development International*, vol. 22, n. 4, pp. 372-398.
- HOLGERSSON C., ROMANI L. (2020), "Tokenism revisited: when organizational culture challenges masculine norms, the experience of token is transformed", *European Management Review*, vol. 17, n. 3, pp. 649-661.
- ISTAT (2011). *Mercato del lavoro. Occupazione. Indicatori ai confini del 2011*. Retrieved from <https://ottomilacensus.istat.it/sottotema/017/017029/13/> (09.03.24).
- ISTAT (2021). *Registro statistico dell'occupazione delle imprese (ASIA-Occupazione)*.
- KANTER R.M. (1977), "Some effects of proportions on group life: skewed sex ratios and responses to token women", *American Journal of Sociology*, vol. 82, n. 5, pp. 965-990.
- KONRAD A.M., KRAMER V., ERKUT S. (2008), "Critical mass: the impact of three or more women on corporate boards", *Organizational Dynamics*, vol. 37, n. 2, pp. 145-164.
- LANGLEY A., SMALLMAN C., TSOUKAS H., VAN DE VEN A.H. (2013), "Process studies of change in organization and management: unveiling temporality, activity, and flow", *Academy of Management Journal*, vol. 56, n. 1, pp. 1-13.
- LEE T.W., MITCHELL T.R., SABLYNSKI C.J. (1999), "Qualitative research in organizational and vocational psychology, 1979-1999", *Journal of Vocational Behavior*, vol. 55, n. 2, pp. 161-187.
- LEWIS P., SIMPSON R. (2012), "Kanter revisited: gender, power and (in)visibility", *International Journal of Management Reviews*, vol. 14, n. 2, pp. 141-158.

- MATHISEN G.E., OGAARD T., MARNBURG E. (2013), "Women in the boardroom: how do female directors of corporate boards perceive boardroom dynamics?", *Journal of Business Ethics*, vol. 116, n. 1, pp. 87-97.
- MELLON C.A. (1990), *Naturalistic inquiry for library science: methods and applications for research, evaluation, and teaching*, Greenwood Press, New York, NY.
- METHA B.S., AWASTHI I., METHA, N. (2021). "Women's Employment and Digital Technology: A Regional Analysis in India." Institute for Human Development. Sage.
- ROWLEY J. (2012), "Conducting research interviews", *Management Research Review*, vol. 35, n. 3/4, pp. 260-271.
- RUTHERFORD S. (2001), "Organizational cultures, women managers and exclusion", *Women in Management Review*, vol. 16, n. 8, pp. 371-382.
- SALMINEN-KARLSSON M. (2020), "Women in the steel industry: closed in corners or provided with possibilities", *Nordic Journal of Working Life Studies*, vol. 10, n. 4, pp. 65-83
- SAUNDERS B., SIM J., KINGSTON T., BAKER S., WATERFIELD, J., BARTLAM B., BURROUGHS H., JINKS C. (2018), "Saturation in qualitative research: exploring its conceptualization and operationalization", *Quality and Quantity*, vol. 52, n. 4, pp. 1893-1907.
- SPECTRUMSTEEL INDUSTRIES (2023). *Consolidated balance sheet*. Retrieved from firm website.
- TANFORD S., PENROD S. (1984), "Social influence model: a formal integration of research on majority and minority influence processes", *Psychological Bulletin*, vol. 95, n. 2, pp. 189-225.
- TORCHIA M., CALABRÒ A., HUSE M. (2011), "Women directors on corporate boards: from tokenism to critical mass", *Journal of Business Ethics*, vol. 102, n. 2, pp. 299-317.
- TORRE M. (2017), "Attrition from male-dominated occupations: variation among occupations and women", *Sociological Perspectives*, vol. 60, n. 4, pp. 665-684.
- VAARA E., LAMBERG J.A. (2016), "Taking historical embeddedness seriously: three historical approaches to advance strategy process and practice research", *Academy of Management Review*, vol. 41, n. 4, pp. 633-657.
- WORLD STEEL ASSOCIATION a (2023). *The steel story. Tracing steel's development from 2,000 BC to the innovations of today*. World Steel Association. Retrieved from worldsteel.org (09.03.2024).
- WORLD STEEL ASSOCIATION b (2023). 2023. *World steel in figures*. World Steel Association. Retrieved from worldsteel.org (09.03.2024).

La trasformazione organizzativa di Autostrade per l'Italia: verso la strategic agility nell'era delle policrisi

PAOLO BOCCARDELLI¹ ROBERTO TOMASI² CHIARA BARTOLI³ MARIA LORENZA GERARDI⁴

Abstract

Il caso studia la trasformazione organizzativa di Autostrade per l'Italia (ASPI), azienda leader a livello europeo nella costruzione di autostrade e servizi di mobilità. L'analisi individua i fondamenti del contesto meso, micro e macro che hanno attivato la trasformazione dell'organizzazione in chiave agile. Vengono approfonditi gli aspetti rilevanti della trasformazione, e che hanno permesso al Gruppo di costruire nuovi equilibri per assicurare continuità nella creazione di valore sostenibile condiviso, anche nella discontinuità generata da shock esterni ed interni. Il caso mira a favorire la comprensione dei fattori che presiedono alla creazione della agility e intende fornire ai manager e agli studenti una guida alla comprensione dei processi di cambiamento in contesti dinamici guidati da tensioni paradossali.

Keyword: agility, paradoxical tensions, strategic change, trasformazione organizzativa

Tipologia: Caso

Il contesto e gli obiettivi di apprendimento

Le organizzazioni si trovano oggi a rispondere a condizioni di mercato in rapido cambiamento, che sono guidate dai mega-trend del green e del digitale; si tratta di fenomeni in grado di accelerare i processi di trasformazione interna (Uhrenholt et al., 2022) e che agiscono simultaneamente come “transizioni gemelle” (commissione Europea, 2021). Le innovazioni tecnologiche disruptive alterano le strutture di mercato esistenti, influenzano i paradigmi tecnologici e di business e generano cambiamenti profondi nelle strutture organizzative e nelle dinamiche di mercato (Christensen, 1997; Schuelke-Leech, 2018). Si inseriscono in questo contesto anche le sfide legate alle policrisi globali come la pandemia da COVID-19, l'instabilità geopolitica, le dinamiche inflazionistiche, e che sono suscettibili di riconfigurare le catene globali del valore (Marvasi, 2023).

Nel tentativo di innovare e navigare il cambiamento, le organizzazioni affrontano paradossi organizzativi, ovvero tensioni tra forze opposte ma tra loro interdipendenti (Lewis et al., 2014; Dieste et al., 2022). La gestione di queste tensioni richiede una nuova vision, con il superamento degli approcci tradizionali basati sul controllo, per abbracciare modelli più dinamici nei processi decisionali (Smith and Lewis, 2011; Handy, 1994), verso la creazione di strutture flessibili e disegnate secondo logiche agile.

La strategic agility rappresenta la capacità che acquisiscono le organizzazioni di monitorare i cambiamenti e adattarsi dinamicamente ad essi ridefinendo i propri obiettivi in base alle variabili contestuali e ambientali (Morton et al., 2018). L'agilità strategica è diventata sempre più rilevante per le organizzazioni in risposta ai rapidi cambiamenti che si verificano nei mercati e nei business (Girod et al., 2023). Le imprese che riescono ad integrare l'agility nei propri processi decisionali mostrano livelli di operational performance superiori rispetto alle organizzazioni che si muovono secondo i modelli organizzativi tradizionali (McKinsey, 2021). Abbracciare l'agility diviene quindi un elemento chiave per le imprese per accrescere la capacità di mantenere un vantaggio competitivo in contesti dominati dalla velocità del cambiamento e dall'incertezza.

L'obiettivo del lavoro è quello di presentare il processo di trasformazione di Autostrade per l'Italia verso l'agility in un contesto governato da molteplici tensioni esterne ed interne, al fine di delineare il percorso attraverso il quale le organizzazioni possono raggiungere modelli organizzativi più flessibili e dinamici.

Obiettivi di apprendimento:

- Comprendere i driver del cambiamento esterni ed interni, a livello micro, meso e macro, che possono condurre le imprese ad attivare percorsi di cambiamento verso l'adozione di modelli organizzativi orientati alla strategic agility;

¹ LUISS

e-mail: pboccard@luiss.it - Roberto Tomasi - Chiara Bartoli - Maria Lorenza Gerardi

² Autostrade

e-mail: francesco.chimenti@autostrade.it

³ LUISS

e-mail: cbartoli@luiss.it

⁴ Sapienza Università di Roma

e-mail: marialorenza.gerardi@uniroma1.it

- Comprendere i building blocks che occorre tenere in considerazione nel processo di trasformazione organizzativa verso la strategic agility;
- Riflettere sul valore della crisi come motore di trasformazione delle organizzazioni;
- Apprendere i processi attraverso i quali le organizzazioni acquisiscono capacità dinamiche.

Il caso: Autostrade per l'Italia

1. Autostrade per l'Italia: la storia

La storia aziendale di Autostrade per l'Italia (ASPI) si snoda attraverso quasi sette decenni – dal 1950 a oggi – che ripercorrono anni di cambiamento significativo non solo per il Gruppo, ma anche per l'economia, l'industria e le infrastrutture dell'Italia. Negli ultimi settant'anni, infatti, ASPI ha accompagnato l'Italia nei cambiamenti guidati dalle trasformazioni economiche, politiche e sociali, mantenendo la sua posizione di leader nazionale nella gestione integrata delle infrastrutture.

Oggi ASPI è un player di eccellenza, attore di cambiamento e leader nell'offerta di servizi innovativi e infrastrutture, che gestisce 2858 Km di rete autostradale, circa il 50% dell'intera rete nazionale a pedaggio, distribuita in più di 15 regioni. Il gruppo, che ha conseguito ricavi operativi pari a 4.175 milioni di euro nel 2022, negli ultimi anni ha orientato i propri sforzi al miglioramento e all'espansione della rete, con un investimento totale di circa 21 miliardi di euro tra il 2020 e il 2038, per potenziare e ammodernare l'infrastruttura del Paese.

La leadership nel cambiamento è parte integrante del DNA del Gruppo. La storia di Autostrade è infatti sempre stata caratterizzata da un approccio pionieristico all'innovazione, e ha una profonda connessione con la storia ingegneristica del Paese, per il ruolo fondamentale svolto nell'evoluzione delle infrastrutture nazionali e il contributo allo sviluppo economico dell'Italia. La sua leadership ingegneristica si estende anche a progetti internazionali di innovazione autostradale, che hanno funzionato da leva per acquisire competenze avanzate e trasferire conoscenze ai progetti nazionali. Questo ha contribuito al potenziamento delle capacità tecniche e all'integrazione di soluzioni innovative, attingendo dalle migliori pratiche globali. L'eccellenza operativa di Autostrade è quindi il risultato di anni di esperienza e successi ingegneristici, che le hanno consentito di consolidare la sua posizione di guida nell'innovazione e di affermarsi come una delle principali imprese nel panorama infrastrutturale italiano.

2. Il contesto

2.1 Macro-scenario: il mercato della mobilità

L'industria della mobilità attraversa oggi un processo di profonda trasformazione. Le conseguenze a lungo termine della pandemia da COVID-19 unitamente alle twin transition del green e del digitale, stanno agendo come amplificatori del cambiamento ridefinendo non soltanto le abitudini e i comportamenti degli individui legati alla mobilità, ma anche i modelli di business prevalenti nel settore. È in questo contesto che emergono quattro driver del cambiamento della mobility industry.

La **sicurezza stradale** è stata individuata tra le dieci aree di intervento della Commissione Europea nel 2020 all'interno della Strategia per la Mobilità Sostenibile e Intelligente con l'obiettivo "Vision Zero" che identifica come aree cruciali per lo sviluppo futuro della sicurezza stradale le infrastrutture sicure, i veicoli sicuri, la riduzione delle infrazioni e un intervento post-incidente tempestivo ed efficace. Per l'Italia la sicurezza stradale è ancora una sfida rilevante e strettamente legata alla crescente vulnerabilità del territorio italiano e all'obsolescenza delle infrastrutture di mobilità.

Segue il **digitale**, con la crescita del mercato degli Intelligent Transport Systems (ITS), che comprende servizi di gestione delle flotte e del trasporto pubblico, che accelera la trasformazione del settore. Per il 2022, si prevede un incremento globale degli investimenti nelle soluzioni digitali del 12% annuo che potranno raggiungere i \$50.23 miliardi nel 2027. In questo contesto, la realizzazione delle Smart Roads, basata su tecnologie come l'Internet of Things (IoT) e l'Intelligenza Artificiale (IA), assume un ruolo centrale, coinvolgendo infrastrutture stradali, ferroviarie e aeroportuali contribuendo a creare una mobilità intesa come ecosistema digitale.

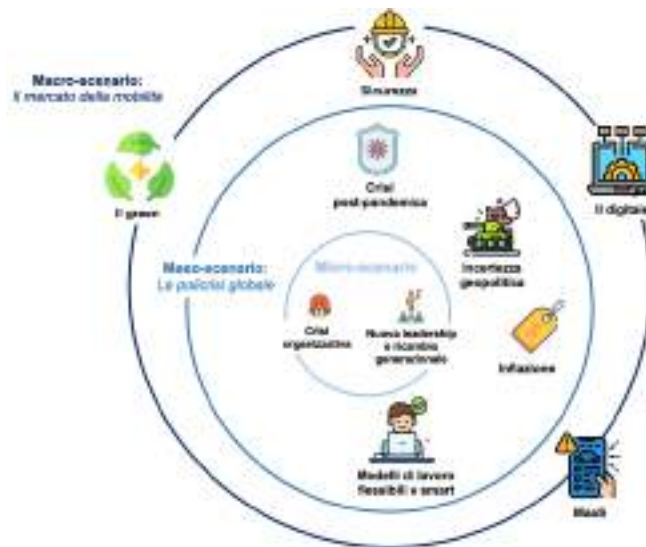
Anche la **sostenibilità** assume particolare rilevanza per il futuro del settore della mobilità. Mentre nel 2022 il car-sharing ha registrato in Italia un aumento del 41%, con oltre 49 milioni di viaggi e un fatturato di 178 milioni di euro, le immatricolazioni full electric rappresentano meno del 4% del parco circolante, con circa 200.000 unità al 30 giugno 2023. Crescono gli impatti economici derivanti dai danni alle infrastrutture veicolari dovuti ai cambiamenti climatici, che potranno raggiungere i 5,17 miliardi di euro all'anno entro il 2050.

A livello europeo, il paradigma della **Mobility-as-a-Service (MaaS)** propone inoltre una mobilità più efficiente e sostenibile con l'ottimizzazione della relazione pubblico-privato, attraverso un accesso semplificato a opzioni di mobilità diverse e un focus sulle soluzioni sostenibili come lo sharing. Questo paradigma rappresenta un driver chiave nella trasformazione digitale della mobilità, incoraggiando la collaborazione tra enti pubblici e privati attraverso piattaforme digitali di intermediazione per diversificare l'offerta MaaS.

2.2 Meso-scenario: l'interconnessione dei sistemi globali e la policrisi

Il cambiamento a livello meso richiama il concetto di policrisi, che indica l'interazione di diverse crisi provenienti da sistemi vari che, interagendo tra loro amplificano i loro effetti (Lawrence et al., 2022). La crescente interconnessione tra mercati e sistemi globali ha infatti aumentato i rischi sistemici per le organizzazioni, anche per quelle che operano nel settore della mobilità. Attualmente, i principali nodi delle poli-crisi globali sono le conseguenze a lungo termine della pandemia da COVID-19, le crisi geopolitiche e le tensioni inflazionistiche che hanno portato ad un ripensamento della mobilità in chiave sostenibile. Le sfide create da questi nodi problematici influenzano gli attori del mercato della mobilità nella gestione delle persone, nei modelli di lavoro e nelle aspettative individuali, spingendo le aziende del settore a modificare le proprie strutture in chiave collaborativa, per favorire il benessere e la crescita personale dei dipendenti.

Figura 1. I driver del cambiamento



2.3 Micro-scenario: elementi di discontinuità interni

ASPI si è confrontata con shock interni rilevanti. Il primo è il crollo del viadotto Polcevera (Ponte Morandi), avvenuto nell'agosto del 2018. Dopo l'evento, l'attenzione mediatica si è concentrata non solo sul disastroso evento, ma anche sulla gestione della infrastruttura da parte della Società e sulle mancanze nelle manutenzioni, con un acceso dibattito sull'opportunità del rinnovo della concessione. In questo contesto di crisi ASPI avvia un percorso di trasparente revisione delle proprie procedure, che si estende alle controllate e a tutte le funzioni interne e che coinvolge anche il modello organizzativo e la governance.

Nel 2021 Atlantia cede l'88,06% delle quote della Società Autostrade per l'Italia alla Holding Reti Autostradali S.p.A. (HRA), un veicolo di investimento formato da CDP Equity, Blackstone Infrastructure Partners e Macquarie Asset Management. La compagine azionaria di ASPI oggi è rappresentata oggi da CDP Equity e dai fondi gestiti da Blackstone e Macquarie oltre ad Appia Investment e Silk Road.

Figura 2. Azionariato e organigramma del Gruppo Autostrade per l'Italia



La crisi seguita al crollo del Ponte Morandi, ha condotto al cambio nella leadership di ASPI con l'arrivo del nuovo amministratore delegato Roberto Tomasi e il ricambio generazionale con la sostituzione di tutte le prime linee dell'organizzazione. È in questa fase che prende avvio la trasformazione organizzativa di ASPI:

Siamo partiti dalla convinzione di dover risolvere un elemento specifico che era quello della gestione dell'infrastruttura e progressivamente abbiamo iniziato ad allargare la nostra visione a 360 gradi. Ci siamo resi conto che dovevamo reimpostare l'azienda a tutto tondo senza lasciare nulla di intentato.”

- Roberto Tomasi, Amministratore Delegato, Autostrade per l'Italia

La roadmap verso il cambiamento viene formalizzata nel Piano Industriale ASPI 2020- 2023, articolato attraverso i pilastri del progetto Next (Figura 3), i quali definiscono le principali aree di intervento e le declinano in un'ottica operativa, con un approccio sistematico e graduale alla trasformazione.

Figura 3. I pilastri del Piano Strategico di Trasformazione.



3. Il nuovo baricentro strategico: velocità ed eccellenza operativa

Dal 2020 ASPI ha intrapreso un profondo percorso di rinnovamento interno, ridefinendo il suo orientamento strategico sulla base di due dimensioni: la **velocità** e l'**eccellenza operativa**. Questa trasformazione è stata volta a posizionare l'organizzazione al vertice del settore, attraverso una strategia corporate focalizzata su ricerca, innovazione e sostenibilità.

La velocità è diventata sinonimo di accelerazione creativa, consentendo ad ASPI di sviluppare un approccio integrato e agile al business, mentre l'eccellenza operativa si collega al passato del Gruppo, ancorando le decisioni strategiche all'innovazione, alla competenza ingegneristica e alle risorse infrastrutturali e alle competenze uniche. Questi due principi emergono come fattori chiave che guidano la strategia operativa del Gruppo, la cui nuova missione si propone di “rendere la mobilità più sostenibile, sicura, innovativa ed efficiente”.

ASPI adotta una nuova vision basata sulla centralità delle persone, includendo lavoratori, utenti, fornitori e comunità locali, riconoscendoli come elementi chiave nella creazione di valore e orientando l'organizzazione a promuovere la loro sicurezza, benessere e a svilupparne i talenti.

Nella sua vision ASPI sottolinea inoltre il ruolo dell'infrastruttura autostradale come “spina dorsale” dell'Italia, generando valore condiviso e contribuendo al benessere collettivo.

3.1 La ridefinizione dei valori e della cultura organizzativa

ASPI ha inoltre formalizzato i suoi **nuovi valori**, promuovendoli a principi guida dell'attività dell'organizzazione. Attraverso questa formalizzazione, l'azienda ha riconsiderato la propria identità culturale, utilizzando i valori come elemento unificante per connettere le persone e sviluppare una cultura organizzativa coesa, allineata con la sua vision e la sua mission. I valori nella trasformazione di ASPI rappresentano anche un elemento di rottura rispetto alla struttura precedente, che era caratterizzata da gerarchie rigide e dalla mancanza di comunicazione, diventando il fondamento di una visione condivisa all'interno del Gruppo come “comunità”:

“(…) non possiamo prescindere da due fattori. Da una parte ci sono i valori che permettono all'azienda di immaginare il proprio futuro remunerando i suoi investitori, dall'altra c'è la gestione di una infrastruttura di interesse pubblico che va ben oltre il ritorno aziendale”

- Roberto Tomasi, Amministratore Delegato, Autostrade per l'Italia

I valori di ASPI mettono al centro l'**etica**, la quale diviene il motore dell'agire del Gruppo, e la **trasparenza** come l'elemento fondante di un approccio aperto al mercato, nei processi, nelle informazioni, nella chiarezza delle scelte strategiche e negli obiettivi che vengono condivisi a tutti i livelli. Tra i valori affermati da ASPI, assumono rilevanza anche la **sicurezza**, intesa da ASPI come la creazione di una condizione oggettiva di protezione che tuteli le persone nella fruizione delle infrastrutture e nel lavoro per le infrastrutture e, infine, la **responsabilizzazione** a tutti i livelli, una delle condizioni ritenute da ASPI come necessarie per integrare i valori sociali all'interno dell'organizzazione e fare in modo che si creino strutture permanenti per l'accrescimento della professionalità e dell'agire responsabile e sostenibile.

3.2 Un nuovo modello decisionale partecipativo

ASPI ha rivisto completamente il suo modello organizzativo seguendo una logica di struttura lineare, ridefinendo funzioni e ruoli sia a livello centrale che nelle divisioni di tronco. L'organigramma è stato reso accessibile a tutti i livelli, per facilitare una trasparente lettura delle funzioni e una maggiore conoscenza interna dei rapporti tra le strutture.

Figura 4. Struttura dei Comitati Manageriali.



Fonte: ASPI

La nuova struttura dell'organizzazione ha privilegiato la comunicazione orizzontale basata sui Comitati Manageriali che rappresentano le tredici aree ritenute chiave per lo sviluppo del business e la realizzazione della mission del gruppo. Questa struttura facilita la comunicazione trasparente delle informazioni, promuovendo la collaborazione tra funzioni corporate e controllate e creando un naturale approccio orizzontale nella definizione dei ruoli e delle decisioni. I Comitati Manageriali hanno permesso di superare la struttura gerarchica e a silos, favorendo maggiore autonomia tra le funzioni, garantendo al contempo un costante controllo e circolazione della conoscenza e dei dati.

3.3 Comunicazione e democratizzazione dei sistemi decisionali

I principi e valori della trasparenza e della responsabilizzazione delle persone e della centralità del dato sono stati i driver di un processo di istituzionalizzazione del dialogo tra funzioni interne alla corporate, e tra la corporate e le loro controllate, che ha condotto all'affermazione del "Dialogue for Company Values". Si tratta di una piattaforma di scambio e un luogo permanente di discussione, di raccordo e di problem solving interfunzionale che opera attraverso un set di meeting prestabiliti a cadenza settimanale o mensile, in cui vengono discussi aspetti strategici e operativi legati al business di ASPI.

Il Dialogue for Company Values funziona quindi da leva per aumentare l'efficacia dei processi informativi e decisionali e l'accountability interna mediante il coinvolgimento e la responsabilizzazione diretta dei singoli individui coinvolti nelle decisioni, con una circolazione continua delle informazioni e dei dati.

Figura 5. Finalità chiave del Dialogue for Company Values.



Fonte: ASPI

3.4 Il digitale come abilitatore: il valore del dato

La digitalizzazione ha rappresentato uno degli aspetti core del piano di trasformazione organizzativa di ASPI. Infatti lo sviluppo in chiave digitale del Gruppo si è uniformato ai principi stabiliti all'interno del piano "Next to Digital", che attribuisce una nuova centralità alla trasformazione digitale come parte integrante della nuova struttura organizzativa basata sulla trasparenza e la condivisione dei dati. Le attività di sviluppo della trasformazione digitale sono state organizzate su nove aree core, in coerenza con la vision ed i valori di ASPI. Tali aree si strutturano in Chapter attraverso cui viene gestita operativamente la trasformazione digitale. All'interno delle aree prioritarie sono stati inoltre individuati 60 use case. A ciò si affianca l'adozione di una modalità di lavoro agile che, attivata nel settore IT, è stata adottata dalle altre aree funzionali, ed è diventata di dominio comune in tutta ASPI. Oggi in azienda vengono gestite più di 40 room agile in parallelo con la partecipazione di circa 1.800 persone appartenenti a tutte le funzioni del Gruppo, includendo le Società controllate:

"Secondo me è stato molto rilevante, almeno per il buon esito del piano di trasformazione digitale, l'aver adottato un modello di lavoro agile, senza il quale oggettivamente ASPI non sarebbe riuscita a realizzare quello che ha fatto in tre anni."

– Danilo Gismondi, Direttore IT e Digital Transformation - Autostrade per l'Italia

Il risultato della digitalizzazione è stato il coordinamento e l'adattamento spontaneo delle funzioni dell'organizzazione mediante un flusso di informazioni trasparenti e accessibili.

In ASPI i dati non sono più appannaggio di una singola funzione o dell'area che li ha generati, ma sono immagazzinati in repository e vengono condivisi e resi pubblici.

I dati divengono inoltre attivatori del dialogo interno e collettivo che si svolge nell'ambito delle strutture create per gestire i processi di decision making in chiave collaborativa e informata, attraverso i Comitati Esecutivi e le strutture del Dialogue for Company Values:

"Da qualche anno abbiamo definito un indice di copertura digitale dei processi aziendali che si chiama Digital Coverage Index. Questo indice nel 2020 era sotto il 25%, ad inizio 2021 era di circa il 30%. Abbiamo chiuso l'anno 2023 con una copertura digitale media del 75%."

- Danilo Gismondi, Direttore IT e Digital Transformation, Autostrade per l'Italia

La trasformazione di ASPI ha quindi previsto l'adozione di un modello di decision-making guidato dai dati, utilizzando in tal modo le informazioni raccolte e condivise come guida per la presa delle decisioni a tutti i livelli: corporate, business e funzionale.

Oggi, l'organizzazione utilizza i dati per monitorare il mercato, prevedere andamenti e valutare le prestazioni in tempo reale. Questo gli consente di reagire dinamicamente alle sfide sistemiche e alle nuove tendenze della mobilità. La trasformazione data-driven è stata abilitata dal digitale, che ha creato connessioni significative tra persone e infrastrutture attraverso cinque principi chiave: centralità dei dati, sicurezza, velocità di esecuzione, connessione e trasparenza interna e infine ricerca.

ASPI ha valorizzato la trasparenza e l'importanza dei dati attraverso una ristrutturazione dei processi interni e la mappatura degli asset. Il progetto PWAY, si è incentrato sulla mappatura dei processi aziendali con un approccio di catena del valore e di standardizzazione. Ogni attività è stata dettagliatamente mappata attraverso flow diagram di input e output, seguendo una struttura gerarchica dal livello 0 al livello 3. Complessivamente, sono stati mappati 38 processi di livello 0, ciascuno associato a un owner e arricchito da ulteriori microprocessi al livello 3, portando a oltre 2300 flow diagram di processo. I dati sono facilmente accessibili all'interno dell'intranet aziendale tramite un repository interattivo, promuovendo la conoscenza diffusa dei processi e garantendo la continuità delle informazioni anche con il turnover aziendale.

Accanto alla mappatura dei processi, anche la mappatura degli asset è stata ritenuta strategica al fine di assicurare l'ottimizzazione delle attività di monitoraggio delle opere in concessione, il miglioramento della governance dei dati sugli asset e l'ottimizzazione dei processi di ispezione e di manutenzione degli stessi. Il processo di mappatura degli asset è stato realizzato attraverso la digitalizzazione degli stessi mediante Argo, una piattaforma digitale unica a livello europeo, basata su strumenti di Intelligenza Artificiale e sviluppata con il supporto di IBM e la controllata Movyon. Argo è un inventario digitale che raccoglie e gestisce i dati strutturali di ponti, cavalcavia, viadotti e gallerie, e che in tal modo possono essere aggiornati in tempo reale. L'installazione di sensori IoT consente inoltre di raccogliere dati sullo stato di salute delle opere mappate. Il building information modeling, che viene creato partendo dai dati del database, consente inoltre di supportare l'operatore nella fase ispettiva. Mediante le tecnologie di geo-referenziazione è possibile inoltre effettuare scansioni tridimensionali dell'opera, mentre l'integrazione dell'Artificial Intelligence affianca l'operatore nell'analisi puntuale delle fotografie dei droni e nell'approfondimento degli aspetti che attengono l'identificazione puntuale dei difetti associati ai componenti dell'infrastruttura.

3.5 Il valore delle persone: coinvolgimento, benessere

L'aver incluso le persone e il loro valore nella vision dell'organizzazione diventa il pivot che orienta il reframing organizzativo di ASPI alla centralità delle iniziative che sono volte alla valorizzazione del benessere organizzativo a tutti i livelli, mediante l'istituzionalizzazione della inclusività e della diversity. La valorizzazione della diversità e dell'inclusione all'interno dell'organizzazione si avvale del contributo dell'Employee Resource Groups (ERG), un team interno ad ASPI ad appartenenza volontaria attivo nella promozione di iniziative e progetti inclusivi con idee e competenze specifiche.

Le iniziative per l'accrescimento del benessere organizzativo hanno inoltre previsto una sistematizzazione del ricorso allo smart working. L'accordo sulla flessibilità firmato da ASPI ha dato una forte spinta al lavoro da remoto, per corrispondere ad un triplice obiettivo organizzativo:

- *aumentare la produttività aziendale;*
- *favorire la conciliazione famiglia-lavoro;*
- *ridurre l'impatto sull'ambiente.*

Nel percorso di valorizzazione delle persone, il nuovo modello organizzativo di ASPI ha inoltre previsto la creazione di istituzioni interne volte a promuovere l'attivazione e la partecipazione dei dipendenti nella comunità mediante il modello delle Communities, concepite come organismi che hanno il ruolo di reti di connessione con il mondo esterno all'organizzazione, per la condivisione sul territorio e con le comunità locali dell'expertise e dei valori del Gruppo.

3.6 Leadership generation: talent nurture e attraction

La vision umano-centrica di ASPI ha guidato l'implementazione di un nuovo framework di talent attraction e nurture, focalizzato sulla multidimensionalità. Questo approccio si basa sull'attrazione di nuovi talenti mediante relazioni solide con enti formativi esterni e sull'investimento nell'up-skilling e re-skilling delle risorse interne. I programmi dedicati agli "Alti Potenziali", identificati come le risorse di talento che mostrano elevate performance e alto potenziale, promuovono la crescita attraverso percorsi dedicati di induction, formazione manageriale, coaching e "Shadow Management". Questi programmi consentono il costante allineamento della leadership ai valori dell'organizzazione e favoriscono il training on the job per lo sviluppo delle capacità di guida dei manager di domani.

3.7 Il valore della sostenibilità

La mobilità sostenibile è identificata come un elemento distintivo della mission del Gruppo e rappresenta uno dei pilastri del Piano Trasformativo ASPI, che segue il mega-trend del green. ASPI ha fissato obiettivi strategici basati sull'integrazione nella propria strategia di business dei pilastri ESG (Environmental, Social, Governance), legandoli al programma di trasformazione NEXT. Questo orientamento strategico guida una transizione verso l'infrastruttura connessa e digitale che abilita la mobilità sostenibile del futuro:

"Noi siamo andati verso una direzione diversa e quindi abbiamo reso la sostenibilità un asse strategico della nostra missione. Peraltro, questo si sposava benissimo già con la mission e la vision che proprio in quel momento venivano definite: ASPI come operatore della mobilità sostenibile, efficiente, all'avanguardia."

- Concetta Testa, Head of Sustainability, Autostrade per l'Italia

La strategia ESG di ASPI ha già permesso di ottenere significativi Rating ESG da parte di agenzie riconosciute a livello internazionale (e.g. Moody's - ESG Solutions, CDP - Disclosure Insight Actions) e una prima evidente prova dell'impegno dell'azienda di integrare le questioni ambientali e sociali nella propria strategia di sviluppo e nella propria struttura di governance sono le emissioni obbligazionarie sostenibili, collocate dall'inizio del 2023 per un valore complessivo di circa un miliardo e mezzo.

3.8 Il reframing del network esterno

La forte capacità di innovazione tecnologica di ASPI si manifesta attraverso collaborazioni con società controllate che consente di creare una rete di risorse e competenze interne distinte ed integrate. Questa rete solida è fondamentale per lo sviluppo del business e la realizzazione di soluzioni digitali per migliorare la velocità e l'eccellenza operativa, ottimizzando al contempo i processi interni.

L'orientamento aperto all'innovazione si riflette tuttavia anche nelle molteplici collaborazioni con enti di ricerca, istituzioni e altre imprese del settore. La logica che presiede all'innovazione è quella di esplorazione continua e che permette ad ASPI di riconoscere idee, trasformarle in sperimentazioni e convertire i risultati della ricerca in valore condiviso, integrando costantemente le innovazioni nel proprio business.

L'organizzazione è inoltre attenta alle innovazioni sviluppate da parte di startup e alla valorizzazione dei progetti e delle idee da parte di ricercatori, supportando in tal modo i processi di trasferimento tecnologico:

"Il Gruppo ASPI ha l'ambizione di partecipare da protagonista alla rivoluzione della mobilità sostenibile che sta interessando il trasporto. Una sfida in cui lo scambio con università ed enti di ricerca e la partecipazione ad eventi e

convegni dedicati sono diventati elementi più centrali nel percorso di trasformazione intrapreso. Abbiamo partnership con realtà nazionali europee che raccolgono le diverse concessionarie autostradali e/o operatori del settore. La partecipazione a convegni e seminari ci stimola a immaginare e trovare soluzioni, che possono essere implementate e ci spingono a pensare a nuove idee, che oggi condividiamo al nostro interno molto più che in passato.”

- Gianluigi Iacobone, Direttore Ufficio Studi e Strategie, Autostrade per l'Italia

Cosa apprendiamo. Un modello organizzativo agile come equilibrio nel paradosso

Il caso ha analizzato gli elementi costitutivi della trasformazione di ASPI, identificando i **principali motori del cambiamento**, i **driver della trasformazione** e le **attività di reframing** che sono state poste in atto per realizzare il cambiamento organizzativo.

La rapida evoluzione dello scenario di riferimento, guidata da un lato dall'evoluzione delle tecnologie digitali disruptive, con la conseguente trasformazione del mercato della mobilità, e dall'altra dalla crescente attenzione alla sostenibilità ed alla sicurezza come nodi centrali nel futuro della gestione delle infrastrutture, hanno rappresentato, insieme agli elementi del meso e del micro-scenario, dei fattori di innesco della trasformazione che ha rivoluzionato il modello organizzativo di ASPI in chiave agile.

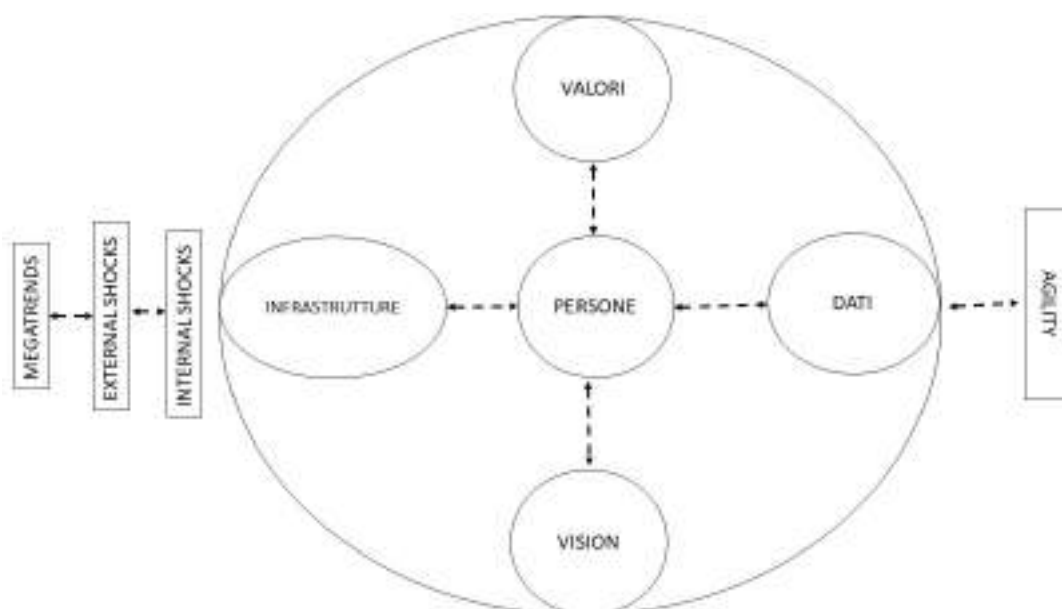
Infatti, l'esigenza di rispondere attivamente al dinamismo del contesto esterno, con velocità, agilità strategica, e al contempo di effettuare immediati interventi correttivi e di early warning per prevenire eventi fatali e correggere le inefficienze del passato, valorizzando i principi di qualità, sicurezza, eccellenza operativa, sono stati driver di revisione delle strutture organizzative del gruppo a 360°.

Si tratta di un processo che ha coinvolto l'organizzazione a tutti i livelli, sia la corporate che le sue controllate, e che ha permesso di considerare il cambiamento come parte integrante della nuova vision del Gruppo.

Il caso mostra come la trasformazione in chiave agile di ASPI fa leva su tre dimensioni fondamentali di cambiamento che sono: le risorse chiave (gli asset infrastrutturali), i Dati (abilitati dal digitale) e le Persone (il talento e le comunità). Queste tre dimensioni sono state interpretate dall'organizzazione come tre risorse dinamiche capaci di conferire all'organizzazione agilità strategica, potenziandole quindi la capacità di cogliere le opportunità in mercati in rapido sviluppo (McCann, 2004), di percepire i cambiamenti esterni e di adattarsi con velocità (Braunscheidel & Suresh, 2009). Tali dimensioni sono connesse e sono alla base della creazione di una organizzazione capace di raggiungere equilibri dinamici anche in condizioni esterne incerte, guidate dalle twin transition e dalle global policrisis.

Il collante tra questi tre building blocks dell'agility è rappresentato dai valori e dalla vision dell'organizzazione, i quali divengono la guida dei processi decisionali e di gestione degli asset e delle risorse, ponendo le basi per la creazione di un'impresa non solo responsabile ma anche partecipativa e partecipata, intesa come comunità di principi e di valori e orientata al benessere della collettività.

Figura 6. I building blocks della trasformazione organizzativa al tempo delle paradoxical tensions.



La centralità dell'etica dell'agire organizzativo pone inoltre le basi per costruire una nuova relazione nei confronti degli stakeholder e degli azionisti basata sulla responsabilità (Goel e Ramanathan, 2014), con un codice di condotta istituzionalizzato per l'organizzazione che è il punto di orientamento per la costruzione di un player di mobilità capace di essere attore di innovazione responsabile nel settore, pur mantenendo il legame con le proprie tradizioni e con la propria comunità.

Il principio dell'eccellenza operativa valorizza l'heritage del gruppo fondata su competenze ingegneristiche inimitabili, le quali rappresentano la fonte di capacità dinamiche nel mercato presente e nell'industria della mobilità di domani.

Inoltre, il tragico evento del ponte Morandi, la crisi organizzativa che ne è seguita e il cambiamento della leadership hanno dato insieme avvio ad un percorso di riflessione profonda a tutti i livelli, generando un ground zero organizzativo che ha rappresentato il punto di partenza nella ricostruzione dei significati dell'organizzazione, dei suoi valori, del senso da attribuire al passato e alla proiezione futura del Gruppo.

Questi fattori di crisi interna hanno creato l'opportunità di implementare cambiamenti positivi, alimentando la readiness dell'organizzazione e potenziando la sua capacità di adattamento e la sua agilità strategica. In ciò il caso dimostra anche come le crisi organizzative, se gestite in modo cooperativo e risolutivo anziché focalizzarsi solo su colpe e responsabilità, possono diventare un'opportunità per rinnovare il purpose dell'organizzazione e avviare processi di trasformazione in chiave agile.

Principali risorse bibliografiche

- CHRISTENSEN C.M. (1997), *The innovator's dilemma: when new technologies cause great firms to fail*. Harvard Business Review Press.
- DIESTE M., SAUER P.C., ORZES G. (2022), "Organizational tensions in industry 4.0 implementation: A paradox theory approach", *International Journal of Production Economics*, vol. 251, 108532.
- HANDY C.B. (1994), *The age of paradox*. Harvard Business Press.
- LAWRENCE M., JANZWOOD S., HOMER-DIXON T. (2022), "What is a global polycrisis", *Cascade Institute, Technical Paper*, vol. 4.
- LEWIS M.W., ANDRIOPOULOS C., SMITH W.K. (2014), "Paradoxical leadership to enable strategic agility", *California management review*, vol. 56, n. 3, pp. 58-77.
- SCHUELKE-LEECH B.A. (2018), "A model for understanding the orders of magnitude of disruptive technologies", *Technological Forecasting and Social Change*, vol. 129, pp. 261-274.
- SMITH W.K., LEWIS M.W. (2011), "Toward a theory of paradox: A dynamic equilibrium model of organizing", *Academy of management Review*, vol. 36, n. 2, pp. 381-403.
- UHRENHOLT J.N., KRISTENSEN J.H., RINCÓN M.C., JENSEN S.F., WAEHRENS B.V. (2022). Circular economy: Factors affecting the financial performance of product take-back systems. *Journal of Cleaner Production*, vol. 335, 130319.

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Track 5
**Management of sustainability and well-being
for individuals and society**

Happiness and emotions at work in organizational relationships. The role of affectivity and empathy for meta-organizational and non-hierarchical solutions in the resilient firm

LUCIANO PILOTTI¹

Abstract

Creative and intelligent organizations (private and public) have the task of offering favorable and welcoming contexts, enabling and facilitating meaningful relationships between people with their collaboration and cooperation, placing them at the center of their action for a continuous improvement of the corporate climate. This happens for ethical reasons, but also because this improves creativity and performance, reducing the cost of conflicts and absenteeism and increasing relational potential also as a source of increased cognitive productivity and meaning, therefore of cohesion. More participatory and non-profit maximizing but resilience-oriented organizations to improve the ability to adapt in complex worlds to push the convergence of the double ecological and digital transition. Among the most underestimated levers of transformation we find the qualities of human capital and relationships between people as sources of shared creation of value through the mobilization of emotional intelligence (catalyst of 4 other integrated intelligences - analytical, practical, creative and social) and dynamics capabilities for increasingly open, inter-disciplinary and inter-functional roles. The objective of this work is to illustrate these emerging processes of organizational change for greater inclusiveness and cohesion for more participatory business models that lead towards greater job satisfaction and therefore also towards states of greater shared happiness.

Key words: *Happyness, emotions, post rationality, human-social capital, 4 integrated intelligence, organizational change*

Framing of the research. *The research paper focusing in the first part the transformation of organization over crisis of Fordism and hierarchical model of organization of labor facing the complexities of the world as interdependencies between digitalization, servitisation, sustainability and grouping competences. In the second part we explore the factor of post rationality following the seminal work of H.Simon until more recent work of Norman, Fineman or Rizzolati on neuroscience and mindfulness. The third part of the paper develop the organizational interconnections between 5 types of intelligence: practical, analytic, creative, emotional, social as a tool to build a grouping intelligence able to support a more large responsibility of every person and group. The forth part of the paper develop the connections between emotional intelligence and sensemaking as hyper-competence clue of politics coalition of organizational process towards a new social architecture of organization overcome hierarchy for a better and large participation of human resources to define strategy as an ecology of value in sharing knowledge and developing dynamic capabilities over traditional specialization of work. Realizing in that perspective a good level of happiness of people in organization and consequently a good level of resiliency for the growth in the long run.*

Purpose of the paper. *The purpose of the paper is to demonstrate the relevance of emotional intelligence in organizational eco-system as a key of adaptation able to improve concept of efficiency with a mixture of competences and virtues transforming the nature of leadership in coaching for new social mix of firm culture and best practice reinforcing participation, inclusion and gender pluralism reaching a diffuse spreading of happiness in organization.*

The path to spreading happiness at work is - for the things said above - a complex and medium-long term process that is intertwined with the construction of a happy job. Starting from generating a purpose and creating around it friendships, proximity and enthusiasm aimed at sustaining a hopeful outlook on the future. One of the key vehicles for organizationally achieving these objectives is the arborescent construction of a (micro) reference group where the trust-recognition in the potentials and the positivity necessary for medium-long term valorisation can blossom, through an initial sharing of purposes, norms and vision, with which to look positively at a horizon of meaning before us. A group where they receive the necessary recognition of their objectives and the results achieved and where respect for oneself (and others) in a relationship between equals is the fundamental enabling and triggering resource for meaningful and meaningful work, intelligent as well as useful, also as a discriminating barrier towards "negative" behaviors and cultures. Key to mobilization, training and maintenance of semantic capital intertwined with the quality of human and social capital

¹ University of Milano
e-mail: luciano.pilotti@unimi.it

in networks (Butera,1990). For this reason, a generically understood friendship or a widespread yet equidistant and cold provision of empathy is not enough, but to achieve personal and corporate objectives together it is necessary to actively build "groupness":

- a - commit to maintaining the quality of the group atmosphere;
- b - develop the identification of common goals and a shared vision;
- c - formulate rules capable of facilitating the emergence of all the emotional potentials of the group members;
and - safeguard "group diversity" by encouraging inclusion and avoiding excessively exclusive or prejudicial behavior;
- f - create supportive, lively, engaging, fun, welcoming and relaxed environments.

A process that is an integral part of the construction of an expanded, shared and inclusive corporate culture of which our way of thinking and experiencing emotions are constitutive, putting our potential and that of the group to work, bringing out all possible talents, blazing a path to happy work, spreading happiness. They are the most open to new, creative, adaptable, collaborative, resilient and inclusive corporate cultures.

Of course, not all corporate cultures allow this path towards a piece of happiness to be achieved without suffering and effort and therefore producing unhappiness. The major obstacles are found in:

- i - excess pressure for short-term results;
- ii - excessive hierarchical pressure against dissent;
- iii - excess pressure from competitive antagonism;
- iv - excessive verbal redundancy without values and facts;
- v - lack of clarity on vision;
- vi - lack of respect;
- vii - absence of appreciation;
- ix - excessive pessimism;
- x - excesses of intolerance;
- xi - absence of equity and justice;
- xii - absence of balanced meritocracy.

A set of conditions that emotionally create distrust, fear, cynicism, anger, enormous waste of time, energy and talents and therefore with widespread outcomes of unhappiness which often translate into absenteeism, renunciation of participation, closure. In the long run, they generate conflict, detachment and rupture with exit solutions to overcome suffering, injustice and, sometimes, even behavioral damage.

Instead, we need emotional prosperity, in sharing and inclusion, developing integrity, justice, equity, valuing differences as a contribution to creativity, not separated from compassion and humanity in treatment. Because this is the way to ensure the right to growth and personal development of the individual, in the valorization of all the virtues and fundamental values (such as honesty, gratitude, indulgence, wisdom, affection) consistently with the growth of a shared vision of organization for superior profitability coupled with man's higher purposes towards a more just society. Therefore, skills and competences are not enough if not accompanied by virtues that effective HR must know how to investigate and enhance.

Methodology. Methodology of the work is focused on different case studies and secondary data for longitudinal analysis of organization in different cultural contexts (USA, European and Asian context) about the nature of leadership and transformation of it all over the world.

Results. Main results confirm the convergence between transformation of organization and convergence of individuation and cohesion principles overcome hierarchy model toward a flat model of situated context of relational capital in coordination process of chain of situated actions with cooperative labor multi-competence, reciprocal coordination and cognitive division of labor.

Friendship is the most formidable vehicle for strengthening meaningful and meaningful relationships, that is, a way to select and choose them in conditions of trust, sincerity and authenticity. For there to be friendship, authenticity and trust we must immerse ourselves in the recognition of the Other in order to be recognized and considered in turn. To offer the best of ourselves we must primarily feel part of a group from which we have sincere stimuli for improvement and into which we pour our trust and commitment. So there is a sociality (wide or narrow) in which we can immerse ourselves to feel part of a team, a team, a common adventure or project. In these conditions, the sense of belonging and esprit de corps are united with affectivity as the "erotic" glue of our relationships without remaining - possibly - prisoners of univocal and unilateral obsessions and passions. It is widely demonstrated that "good relationships" produce "good results" and this applies at work as in family or friendship relationships. But it is clear that this does not exist in nature, but requires our exploratory commitment and our availability to build (or reconstruct) empathic tissues by acting with sincerity, transparency and hospitality, starting from the assumption that we must live much of our time together with others in the company (as in the community or family) and we must make sure that we live it to the fullest and in a sensible and meaningful way, first and foremost by learning to welcome, understand and listen. But also learning to give up pieces of ourselves to the Other with whom we share work, tasks, projects, time, not fearing the expression or emergence of affectivity between emotions and conscience. In short, demonstrating empathy and that we are available to care for and care about the Other and not simply that "you are or are useful to you". It is clear that the emergence of self-interested behavior in relationships produces detachment and suspicion and every person in the company (or outside, in the

community or in the family) who does not feel respected or, worse, ignored, will withdraw in a defensive way, adopting strategies or actions of detachment or disinterest. In the company, what is needed instead is trust and understanding, to spread an environmental climate conducive to mutual concern, always aiming for high ethical values in transparency, which are even more relevant in moments of crisis and conflict. It then becomes fundamental for the company to communicate well and place itself in a position to receive answers, comments and reactions, opening itself up to their active understanding, both individually and collectively.

Here we need to put our emotional intelligence (EI) to work, as the engine of a cognitive and relational commitment to the construction of a meaning to our existence in that work and organizational context. Even highlighting incompatibilities or inconsistencies, as long as they are motivated and analyzed in depth, accompanying us to a conscious and responsible choice, without resentment or vindictive warnings often deriving from excessive personalization. Friendship at work is a glue for healthy relationships at work both for having fun and also for calmly dealing with crisis and conflict situations. The company that promotes friendship at work (as well as love) will also be a successful company.

Research limitations. The main limitation of work is empirical validation of main results that should be developed better with a more large longitudinal data in many countries, comparing different liberal democratic national contexts and possibly in a second step also with a comparison in a non liberal context (China for example).

Managerial implications. We can underline main managerial implications about the transformation of organization and different standard of efficiency comparing mechanical with biological perimeter of these in front of change in the complexity of the world.

Many investigations seem to point out the relevance of mobilizing emotional intelligence coupled with meaningful leadership (which approximates coaching) or - better yet - shared employeeship. Finally, that there is an underlying happiness that links what happens at work and what happens in private, domestic and family settings. In fact, we can reasonably expect that a happy worker or manager will be more motivated and involved, therefore more productive and creative, if they can be so in both areas of life with a more sustainable work-life balance and which companies try to achieve with welfare which in Italy still remains too "lukewarm" and limited to medium-large companies. In short, taking seriously the idea of happiness at work that mobilizes positive emotions, producing value for the individual as well as for the company (and for the environment), even if not always immediately recorded in consolidated financial statements, but certainly generating value in the medium-long term as appears to emerge from various empirical investigations (including Italian ones) on absenteeism, corporate welfare and smart working.

Overall, corporate investigations on the topic of corporate welfare, smart working and smart organization seem to converge on the idea that to enhance "happiness at work" we need to connect in a shared fabric of languages of collaboration and cooperation, the chain of connections between positive emotions, intrinsic motivations and commitment which are the foundation of semantic capital within more participatory organizational models even "beyond" the German model of Mitbestimmung, crossing the thread of the following dimensions in the production of meaning :

- Hope
- Scope
- Friendship
- Empathy
- Affectivity
- Sense

A purpose or meaning must be found within ourselves, first of all by selecting the activities to which we attribute the most value and which serve us to understand whether the organization we have chosen has the actual and/or only potential characteristics to offer the best conditions for this to happen. Future and how much we can contribute to it. Therefore, without waiting for there to always be a sort of "invisible hand" that creates those useful Olympic conditions, because this will never happen without our active contribution. Our contribution is as important as the pre-existing conditions in which to operate and change ourselves and the organization itself. Our values then become an active part and not separated from the company objectives, because they are never extraneous to the workplace.

Have a purpose well defined and shared is then a relevant lighthouse to look at to signal the way forward, which strengthens us and makes us more resilient in the face of shocks. Because this allows us to better discriminate what is satisfactory from what is not by establishing in an ordinal way a system of objectives that are both subjective and organizational.

Originality of the paper. The main originality of the paper is an alternative use of a different field of organizational science in a mix with psychology and neuroscience developed in the last book.

We can see main impact by integrating plural corporate cultures in osmotic forms with multiple jobs that turn into skills and competences (but also interconnected virtues) and which we now list without any pretense of exhaustiveness:

- a - sensitivity to different bases of organizational and digital cultures;
- b - ability to innovate both in skills and un-skills areas;
- c - enabling the adoption of continuous connective learning strategies;
- d - stimuli towards multiple two-way communication skills;
- and - hybridizing co-creation of knowledge and focal solutions towards interdisciplinarity and inter-functionality;
- f - speed of ideation and prototype testing;
- g - ability to contaminate group openness - exchange - collaboration;

- h - ability to influence and transfer, inspire and engage people;
- i - multiple skills and competences in listening and active dialogue;
- l - development of self-awareness and redefinition of command figures "beyond" control towards self-organization.

Abilities and skills which - not separated from virtues - enable meta-organisational solutions which decompose the traditional hierarchical structure (of the Weberian style applied by Fordism) capable of intercepting, speeding up and governing change management trajectories also in terms of de-hierarchisation and reticularisation (of people, groups, functions):

- I - transversal communities of experts capable of contaminating traditional corporate culture, in particular - for example - in Big Data, IoT, Cybersecurity, AI, deep learning;
- II - activation of cross-functional committees to guide systems of project objectives;
- III - definition of "end-to-end" responsibilities of strategic processes;
- IV - activation of DevOps, Agile, Lean organization methodologies ;
- V - mixed multi-channel dynamic training formulas (unstructured frontal classroom, flipped classroom, synchronous and a-synchronous multidevices, theatrical and simulation workshops);
- VI - mobilization of people's energies for the creation of meaning, with inter-generational exchanges, idea-sharing and contests, with prizes and recognition

The reasons for the effectiveness and efficiency of these solutions and approaches are now evident and confirmed by multiple investigations because we are looking for business contexts where we can first of all be satisfied and, possibly, even happy. Without fearing this last category, we must set ourselves the objective - already implemented by many companies - of bringing together the individual prosperity of people with the corporate-organizational and environmental prosperity as well as that of the communities they belong to through second-level welfare plans. By adopting suitable tools for co-generation of potential with a contractual regulation that accompanies - both workers and the company - a reasonable and sustainable compromise between motivation, reward, life (and professional) trajectory and climate (internal) with significant effects on the community territorial reference (external).

But what ensures lasting and robust satisfaction at work and in organizations? What type of intelligence needs to be mobilized? Which leadership is compatible with this underlying objective that links individuals to the company in the medium-long term along with life career strategies and not simple ones? How much does this influence the relationships between the company and the territories in which it is inserted in relation, for example, to its own identity?

Starting from the consideration that we spend two thirds of our life time at work (whether direct or indirect) this is reasonable to be spent well and in well-being (physical, cognitive, emotional), in a meaningful and meaningful way, in which to rediscover one's efforts and the commitment made as an expectation of meaning. Above all to connect responsible medium-long term choices to the short and everyday which is not always possible or easy to separate - except with behavioral refractions that undermine our balance and the serenity of our condition - useful for maintaining clarity in understanding what surrounds us and the relational and organizational dynamics. Because if primary needs can be ordered in some hierarchical form, for motivational needs an emotional-sentimental (or empathetic) balance is needed first and foremost because there is no simple orderability and because they fluctuate in time and space. That balance serves us to decide responsibly and not impulsively, not hastily, taking into account the context in which we find ourselves and looking at the possible consequences of our actions and their sustainability in space-time.

For all this we need Emotional Intelligence (EI) between the ability to listen, understand and act in the construction of a meaningful relationship, that is, one that goes beyond the immediate and that knows how to dynamically align choices at work and at work with private choices outside work, friends and family. Where simple extrinsic motivation or salary is no longer sufficient to retain workers (or attract new ones) given the wave of (voluntary) resignations in the last three years - in Italy, in Europe and in the world - where according to Gallup surveys (2023) there is an average of 75% of the working population dissatisfied with their work and/or the working environment. The causes of the Great Resignation derive from the search for well-being "without adjectives", that is, for some approximation of possible happiness, as a process that is never finished but always accessible and distant from any form of performance optimization to maximize remuneration.

References

- ACCOTO C. (2018), *Il mondo dato*, Egea, UNI-Bocconi, Milano
- AVALLONE F., PAPLOMATAS A. (2005), *Salute Organizzativa, psicologia del benessere nei contesti lavorativi*, Raffaello Cortina Editore, Milano
- BATTILANI P., VARINI V., CONCA MESSINA S. A. (2017), *Il welfare aziendale in Italia fra identità e immagine pubblica dell'impresa*, Il Mulino, Bologna,
- BENASAYAG M., DEL REY A. (2016), *Oltre le Passioni tristi - Dalla solitudine contemporanea alla creazione condivisa*, Feltrinelli
- BUTERA F. (1990), *Il Castello e la rete. Impresa, organizzazioni e professioni*. F. Angeli, Milano
- CASTELLS M. (2014), *La nascita della società in rete*, EGEA, Milano
- CENSIS (2015), *Forum Ania Consumatori, Gli scenari del welfare. Verso uno stato sociale sostenibile*, FrancoAngeli, Milano,
- DAMASIO A. (1999), *Emozione e coscienza*, Adelphi
- DAMASIO A. (2010), *Self Comes to Mind: Constructing the Conscious Brain*, Vintage NY
- FELICE E. (2017), *Storia economica della felicità*, Il Mulino, Bologna

- FINEMAN S. (2008), *Le emozioni nelle organizzazioni - il potere delle passioni nei contesti organizzativi* (a cura di), Raffaello Cortina Editore
- FLORIDI L. (2017), *La Quarta Rivoluzione. Come l'infosfera stà trasformando il mondo*, Raffaello Cortina Ed.
- GIBBONS P. (2002), *Scaffolding language, scaffolding learning*, Heinemann, Portsmouth.
- GOLEMAN D., BOYATZIS R., MCKEE A. (2002). *The New Leaders: Transforming the Art of Leadership into the Science of Results*, Little Brown, London
- GRANT A. (2009), *Give and Take: A Revolutionary Approach to Success*, NY, Viking Press
- HUME D.H. (2001), *Trattato della Natura Umana*, Bompiani, Milano
- KASHDAN TB, FINCHAM FD (2002), "Facilitating creativity by regulating curiosity", *American Psychologist*, vol. 57, n. 5, pp. 373-4, June
- LOPEZ S.J. (2013), *Making Hope Happen: Create the Future You Want for Yourself and Others*, NY, Atria
- LYUBOMIRSKY S. (2008), *The How of happiness*, Penguin
- MAZZUCATO M., JACOBS M. (2017), *Ripensare il capitalismo*, a cura di, Laterza
- MCKEE A. (2018), *Felici al Lavoro. Senza entusiasmo, speranza e buone relazioni non si arriva al successo*, Tecniche Nuove
- PETERS T., WATERMAN R. (1982), *Alla ricerca dell'Eccellenza*, trad it., Sperlig e Kupfer, Milano 1984
- PILOTTI L. (2016), "Scaffolding come leva delle trasformazioni dell'organizzazione resiliente", *Sviluppo & Organizzazione*, n.12, ESTE Edizioni
- PILOTTI L. (2017), *Produttività cognitiva e Politiche Industriali Locali*, EAI, Berlin
- PILOTTI L. (2019), *Organizzazioni emotive (creative e intelligenti)*, Mc Graw Hill Italia
- PILOTTI L., RINOLFI (2022), *Management e Governance dell'ambiente e valorizzazione delle risorse naturali e umane*, Wolters Kluwer-Cedam, Voll.1 e 2
- REBORA G.F. (2017), *Scienza dell'Organizzazione - Il design di strutture, processi e ruoli*, Carocci
- RIZZOLATI G. (2016), *Sei tu il mio io. Conversazione sui neuroni specchio con Antonio Gnoli*, Casagrande
- SENNET R. (2000), *L'uomo flessibile. Le conseguenze del nuovo capitalismo sulla vita personale*, Feltrinelli, (The Corrosion of Character, The Personal Consequences Of Work In the New Capitalism, Norton, 1998),
- SNYDER C.R. (2000), *Handbook of Hope: Theory, measures, and Applications*, San Diego, Academic Press
- SOLARI L. (2016), *Freedom Management*, Free Press
- STANCHIERI L. (2008), *Scopri le tue potenzialità - e libera il tuo talento con il coaching umanistico*,
- STOSSEL S. (2013), "What makes Us Happy, Revisited", The Atlantic, may, <http://www.theatlantic.com/magazine/archive/2013/05/thanksmom/309287/dec2017>
- VITTORIA A. (2015), *Il Welfare oltre lo Stato. Profili di storia dello Stato sociale in Italia, tra istituzioni e democrazia*, Giappichelli, Torino.
- VYGOTSKIJ L.S. (1980), *Il processo cognitivo*, Bollati Boringhieri, Torino
- WILLIAM D. (2016), *L'industria della felicità. Come la politica e le grandi imprese ci vendono il benessere*, Einaudi, Torino.

The shortage of skilled personnel in the transition from Industry 4.0 to Industry 5.0: Impacts and challenges in the machine tool industry

ELEONORA BIGLIA¹ MONICA CUGNO² REBECCA CASTAGNOLI³

Abstract

In a context of transition from Industry 4.0 to Industry 5.0, there is a change of approach, from techno-centric to value-centric, with effects on the figure of Operator 5.0. To date, literature doesn't address the issue of skills mismatch in high technological sectors. This study examines how these transitions impact skill mismatches in machine tool sector. Using a mixed-method approach, it analyzes data from 13.2% of Italian machine tool manufacturers and conducts qualitative interviews.

The study reveals that: 1) while Industry 4.0 technologies fail to alleviate shortage of technical-skilled personnel, there is a growing but unconscious adoption of Industry 5.0 principles; 2) The primary challenge lies in inadequate technical training from education system and a lack of dialogue with industry.

The paper suggests companies address recruitment challenges through targeted training programs and engage policymakers. This research contributes to European Union directives and advances Operator 5.0 theory in machine tool sector.

Key words: industry 5.0; industry 4.0; operator 5.0; mixed-method; computerized numerical control machine tools

Framing of the research. In 2015, Rada coined the term 'Industry 5.0' (Bessa et al., 2023) to highlight the centrality of the environment and people in industrial processes. Later, in 2016, Keidanren introduces the concept of 'Society 5.0' (Aires Moreira et al., 2021), focusing on the balance between economic development and the mitigation of socio-environmental problems, considering technologies not only as profit-making tools, but also as means to improve the quality of life of citizens. In 2018, Østergaard, co-inventor of the UR cobots (Kaivo-Oja et al., 2020), emphasizes the advent of Industry 5.0 as the return of the human element in production, arguing that Industry 4.0 leads to the dissipation of human creativity and critical capabilities.

The importance of the topic is reinforced in 2021, when the European Commission decides to publish the report 'Industry 5.0: Towards more sustainable, resilient and human-centric industry' (EU, 2021), which is part of major policy initiatives on industry and technology, such as the regulation on artificial intelligence and the Green Deal.

The Industry 5.0 paradigm does not present itself so much as a technological or technical revolution, but more as a cultural revolution, bringing operators and the environment back to the forefront of production processes; it is thus spoken of as a complementary process to digital transformation and completion of Industry 4.0. In defining the development model of Industry 5.0, the European Commission identifies three essential pillars (EU, 2020), which would guide the transition from Industry 4.0 to Industry 5.0: human-centricity, sustainability and resilience.

The 5.0 paradigm – which shifts the focus from a techno-centric approach (focused on technology and its ability to control and protect the environment) to a value-centric one (focused on the idea that technology must be used to adapt the production process to the needs of workers and economic, environmental and social sustainability) – increases issues already present with 4.0. In this context there is a need to reflect on the emerging figure of the Operator 5.0 (Romero et al., 2021) and to understand its distinctive characteristics. The Operator 5.0 or 'Resilient Operator 5.0', adds to the requirements of social sustainability and human-centricity already present with Operator 4.0 (Bernus et al., 2016), the requirement of resilience, to complete the concept of Industry 5.0. The vision of Resilient Operator 5.0 focuses on the one hand on the creation of 'self-resilience' for the workforce and on the other hand on 'system-resilience' for human-machine work systems, in a production mechanism in which human operators and machines cooperate to ensure the best possible functioning of the overall system. Self-resilience refers to the productivity of each worker within the production environment.

¹ University of Torino
e-mail: eleonora.biglia@edu.unito.it

² University of Torino
e-mail: monica.cugno@unito.it

³ University of Torino
e-mail: rebecca.castagnoli@unito.it

However, although the concept of the Operator 5.0 was predominantly introduced in the engineering literature with the need to implement resilience, an interdisciplinary understanding of the 5.0 operating elements and competencies that consider both technical and social aspects is lacking to date, in view of a transition from Industry 4.0 to Industry 5.0 (Castagnoli et al., 2022).

In the manufacturing industry, a sector that is a pioneer in adopting 4.0 technologies (Büchi et al., 2020), and is facing the transition to Industry 5.0, the skill mismatch is a growing problem (Cugno et al., 2022). In Italy, out of 531,000 job hirings planned for September 2023, 48% remained unfilled, due to the gap between the skills of workers and those required by companies (Unioncamere/Anpal, 2023). What is more lacking are technical-specialized, particularly in the Italian manufacturing sector, where the computerized numerical control machine tool industry demands advanced expertise from operators and designers due to increasingly complex machinery.

While the transition from Industry 4.0 to Industry 5.0 represents a turning point for the Italian machine tool industry, it could exasperate the shortage of specialized personnel, as the integration of increasingly complex technologies requires more articulated and transversal skills (Ucimu, 2023). The study conducted by Ucimu emphasizes the predominant effect of technological transformation on human resources, particularly on operators working in close synergy with high-tech machinery. This scenario underlines the importance of acquiring specific technical skills not only for those who are responsible for designing the machinery, but also for operators who use it.

In this context, skills can be considered a lever of competitiveness for companies in the sector; the result is an accentuated enhancement of the human figure.

Purpose of the paper. The paper enters the research strand on the Operator 5.0 with an interdisciplinary perspective aimed at understanding the changes in the figure of the Operator 5.0 brought about by Industry 4.0 and Industry 5.0. For this reason, the paper investigates the following research question: How does the adoption of Industry 4.0 and Industry 5.0 affect the problem of the shortage of qualified personnel in the machine tool sector?

The hypothesis that technological implementation can reduce this problem is based on the idea that automation and the use of advanced technologies can increase production efficiency by reducing the need for human resources for certain activities. Indeed, automation has had a significant impact on unemployment in various sectors, reducing the demand for unskilled labor but increasing the demand for highly skilled workers (Castagnoli, 2023).

The aim is therefore to test the hypothesis that technological implementation can reduce the need for personnel and thus mitigate the problem of the lack of skilled workers in certain sectors.

Methodology. The article adopts a mixed-methodology, quantitative and qualitative. As far as the quantitative analysis is concerned, a survey was developed, addressed to population of 250 Italian companies associated with Ucimu-Sistemi per Produrre, covering over 70% of the made in Italy sector (Ucimu, 2023).

The survey is administered between July and September 2023, on a structural level, it comprises 18 questions, divided into four macro-sections: the first one is dedicated to general questions about the company, the second to questions on the company's degree of technological implementation on Industry 4.0, the third to questions on the degree of attention towards Industry 5.0 principles and the fourth to questions on the difficulty of finding personnel.

The first part aims at obtaining information regarding the responding company in the survey; it should be specified that some informations (such as the number of employees of the responding company) are obtained directly from Ucimu, which offers direct contacts and data of its member companies.

The second section of the survey aims at obtaining information on the degree of technological implementation of Industry 4.0, investigates which 4.0 technologies were used by companies and then verifies what is the level of difficulty encountered in their adoption, based on a Likert scale (from 1=little to 5=very much). The study wants to verify, again based on the previous Likert scale, how much the enabling technologies affect various aspects of the company, such as productivity, efficiency, time, worker safety, costs, etc. Finally, about the adoption of 4.0 enabling technologies, the survey asks whether jobs decrease as a result of their adoption.

The third section investigates the degree of Industry 5.0 development at company level. In the first analysis, the study verifies whether investments in circular solutions have been made within the responding company, asking to indicate which ones in case of an affirmative answer. Then, the responding companies indicate, based on the Likert scale set out above, the level of readiness of the responding company to make investments aimed at fulfilling the three founding principles of Industry 5.0, to probe the importance that companies give to these aspects. Finally, the last question of the second section, asks to indicate the difficulties expected concerning the implementation of the company values characterizing Industry 5.0.

In the fourth and final section of the survey, the focus shifts to staff recruitment challenges. It examines where and how staff are primarily sought, investigates the urgency of the lack of skilled technical personnel within respondent companies, and identifies the most-needed professional roles, to highlight the extent of the problem. Furthermore, it asks to specify which professional figure is most lacking and it explores the factors influencing the shortage and solicit solutions, including the potential effectiveness of technological implementation and increased automation in production processes.

The survey concludes by asking companies to indicate in which fields, as a result of technological implementation, more experienced workers are sought after and then asking them to specify in which field it is, on the other hand, more difficult to find competent workers.

To study the performance of the survey results, the study uses the software R, to lead three types of analysis, Principal Component Analysis (PCA), Correspondence Analysis (CA) and Multiple Correspondence Analysis (MCA), to simplify the understanding of the data.

The first PCA tests whether there is a correlation between two variables, namely the propensity to invest in circular solutions and the propensity to invest in business resilience, with a third variable, the cost of equipment.

The second PCA investigates the correlation between the propensity to invest in new technologies in production aimed at improving the working conditions of employees with possible man-machine interface problems and the cost of equipment.

The CA investigates the correlation between the 4.0 enabling technologies companies use with the fields in which the need for skilled personnel increases most because of the implementation of these technologies.

As a final analysis in R, the MCA tests the correlation between three different variables, namely the number of employees, the need or otherwise to find a solution to the problem of the lack of technical-skilled personnel and the 4.0 enabling technologies companies use.

The final analysis in R employs MCA to assess the correlation between three variables: employee numbers, the need to address the lack of technical-skilled personnel, and the utilization of Industry 4.0 technologies.

Qualitative analysis involves two semi-structured interviews to delve deeper into topics relevant to the Italian manufacturing sector. The interviews target one large and one smaller company to uncover differences in the challenges faced and approaches taken between large and small enterprises.

The first interviewed is the smallest one, with around 30 employees and located in the province of Como. Next, the largest one, with around 300 employees and located in the province of Varese, was interviewed.

The interviews are conducted online, dialoguing, in the case of the first company, directly with one of the owners and in the second case, with the HR managers and the production office manager.

The interview asks both companies to specify their motivations for investing in Industry 4.0 technologies and to explain the main difficulties they encounter in adopting these technologies. Next, the interview requests whether they considered the lack of skilled technical personnel to be more of a technical problem or more of a social problem and to explain how they try to counteract and mitigate the lack of personnel.

The interview ends with an in-depth discussion of Industry 5.0 topics (sustainability, resilience and human-centricity), through which possible future developments can be verified.

Results

Quantitative analysis results

The sample obtains 33 responding companies from the survey, out of a population of 250 (13.2%). It is important to specify that this sample reflects the characteristic of the Italian machine tool industry to be mainly concentrated in the Centre-North, in fact companies responding to the survey are mainly located in this area, specifically, 21 in Lombardy, 6 in Piedmont, 4 in Emilia-Romagna and 2 in Veneto.

Regarding the enabling technologies of Industry 4.0, those most used by the sample are cyber-security (57.6%), simulation (48.5%) and horizontal/vertical integration (36.4%). An encouraging figure is represented by the companies that do not use any of these technologies, i.e. only 3% of the sample.

The adoption of these technologies is complicated by two main factors: the lack of personnel, highlighted in 51.5% of responses with ratings between 4 and 5 on the Likert scale and the presence of inadequately trained operators, indicated in 27.3% of responses with ratings between 4 and 5 on the Likert scale.

However, such technologies improve certain production aspects, such as increasing product and process reliability (51.5% distributed between scores 4 and 5), as well as increasing customer satisfaction (45.5% distributed between scores 4 and 5). Anyhow, there is still a low increase in productivity (36.4% distributed between scores 4 and 5) and an even lower reduction in costs (30.3% distributed between scores 4 and 5).

Importantly, the use of these technologies does not lead to a reduction in jobs for almost the entire sample (96.9%).

The data shows a good level of attention towards the founding principles of Industry 5.0 (sustainability, resilience, human-centric); suffice it is to note that, as far as sustainability is concerned, 65% of the sample affirms that they make investments in circular solutions. Furthermore, 87.8% of the sample strongly supports the incorporation of new technologies to improve working conditions, 60% shows a positive inclination towards the adoption of circular models and energy efficiency, and 72.7% supports the willingness to make investments aimed at improving corporate resilience.

As far as the shortage of skilled technical personnel is concerned, it is a common problem in the Italian machine tool industry, with 75.8% of the sample considering it an urgent issue to be addressed. For 69.7% of the sample, inadequate practical training in high school is rather an impact on this problem, as is for 69.7% the lack of interest on the part of young people in the sector.

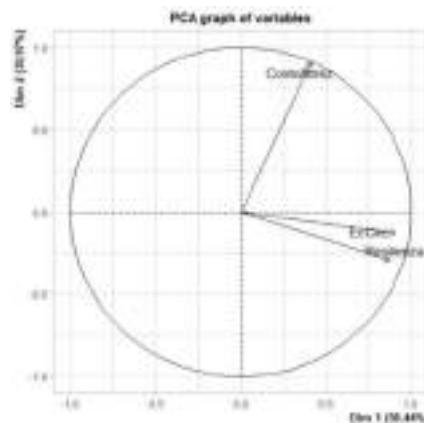
Interesting is the data concerning the increase in demand for operators because of technological implementation by the sample. Even though the field of mechatronics is still the one in which demand is greatest (81.8%), given the nature of the sector, there is an actual increase in demand for specialized figures in the fields of electronics (63.6%) and informatics (39.4%), which reflects the actual widespread use of technology. Despite, however, the increase in technology in production, most of the sample has great difficulty in finding specialized personnel in the fields characterizing the sector, namely mechanics (63.6%) and mechatronics (63.6%).

Furthermore, for 81.8% of the sample, increased automation in production processes cannot be a solution to the problem of the lack of skilled technical personnel.

The study presents now the results of the analysis carried out using the R statistical software.

The first PCA studies the correlation of two variables, namely propensity to invest in circular solutions and propensity to invest in business resilience, with a third variable, the cost of equipment.

Graph 1: PCA on circular economy, resilience, and equipment cost

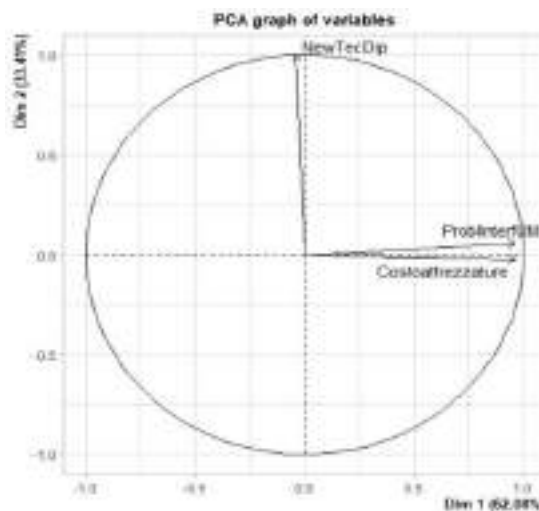


CostoAttrez = cost of equipment
EcCirc = propensity to invest in circular solutions
Resilienza = propensity to invest in business resilience

The graph shows a negligible correlation between the propensity to invest in circular solutions and the cost of equipment and between the propensity to invest in business resilience and the cost of equipment. This finding is based on the observation of the almost right angle formed by the corresponding vectors. However, a positive association emerges between the first two variables, indicating the tendency of companies to invest in both areas. This close relationship is corroborated by the acute angle formed by the vectors, indicative of a more robust correlation. Furthermore, the model can explain the variation of variables, as demonstrated by their position close to the circumference, especially in the case of the vector relating to the cost of equipment.

The second PCA is aimed at investigating the correlation between the propensity to invest in new technologies to improve employee conditions, with possible man-machine interface problems and the cost of equipment.

Graph 2: PCA on investments in new technologies for employees, human-machine interface issues, and equipment cost

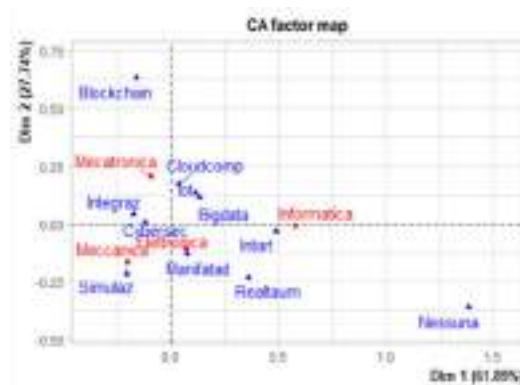


NewTecDip = propensity to invest in new technologies to improve employee conditions
ProblInterfUM = man-machine interface problems
Costoattrezzature = cost of equipment

The graph shows an almost zero correlation between the propensity to invest in new technologies to improve working conditions and the other two variables; in fact, the vectors form an almost right angle. Moreover, all variables are well explained by the model and show a high level of significance, given the high closeness of the three vectors to the circle.

The CA analyzes the correlation between the 4.0 technologies used by companies and the areas where there is a greater demand for skilled personnel because of the implementation of these technologies.

Graph 3: CA on enabling Industry 4.0 technologies used and fields where demand for personnel has increased the most



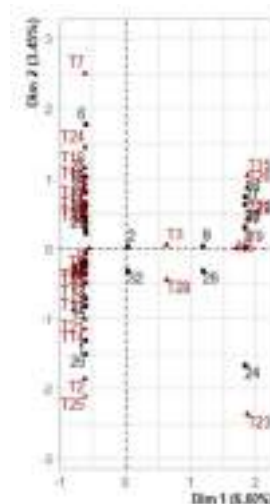
Manifattad = additive manufacturing
Realtaum = augmented reality
Integraz = horizontale/vertical integration
Simulaz = simulation
IoT = internet of things
Cloudcomp = cloud computing
Cybersec = cyber-security
Bigdata = big data
Intart = artificial intelligence

Companies that use simulation more, have a greater need for operators in the field of mechanics; companies that have implemented artificial intelligence, have a greater need for operators in the field of informatics. The field of mechatronics, on the other hand, is not close to any particular technology, in fact it is a useful skill for a variety of technologies. Additive manufacturing, finally, requires many skills in the field of electronics.

In addition, at the bottom right there is an outlier (None) that can be disregarded in the analysis; this is because, as there is only one individual who answers None, data can be considered not statistically significant.

The last type of analysis is an MCA, which aims to analyze the correlation between the number of employees of the companies, the need or not to solve the problem of the shortage of skilled technical personnel (Yes/No) and the 4.0 enabling technologies used. To facilitate the analysis, technologies data are grouped and simplified, as most companies use more than one. This is possible by naming all combinations of technologies used.

Graph 4: MCA on number of employees, presence or absence of the personnel shortage issue, and enabling Industry 4.0 technologies used

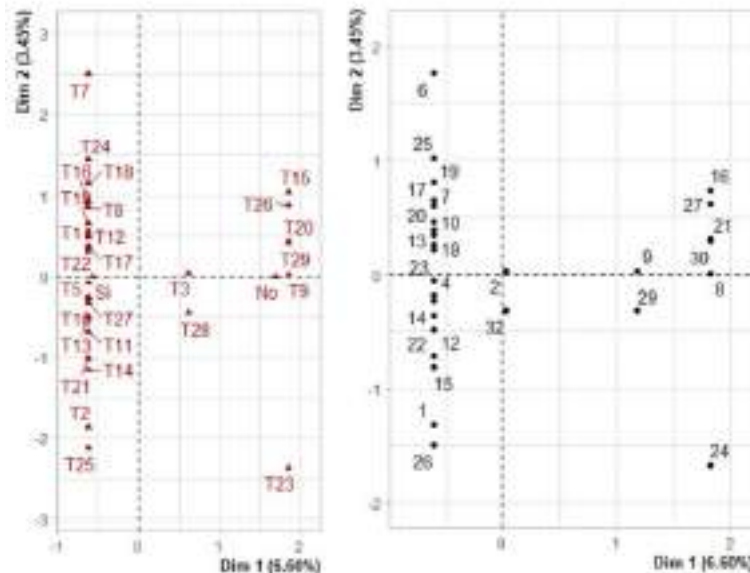


T1 = Simulation; T2 = Horizontal/vertical integration, simulation, cyber-security; T3 = IoT, cloud computing, cybersecurity; T4 = Additive manufacturing, simulation, cyber-security; T5 = Simulation, cloud computing; T6 = Simulation, IoT, cyber-security; T7 = Additive manufacturing, horizontal/vertical integration, IoT, cloud computing, cyber-security, big data, artificial intelligence; T8 = Horizontal/vertical integration, simulation, IoT, cloud computing, big data; T9 = Cloud computing, cyber-security, blockchain; T10 = None; T11 = Cyber-security; T12 = IoT, cyber-security; T13 = Simulation, IoT, big data; T14 = Cloud computing, artificial intelligence; T15 = Augmented reality, horizontal/vertical integration, simulation, cloud computing, cyber-security, big data; T16 = Horizontal/vertical integration, cloud computing, cyber-security; T17 = Additive manufacturing, cloud computing, cyber-security; T18 = Horizontal/vertical integration, simulation, IoT, cyber-security; T19 = Additive manufacturing, augmented reality, simulation, cyber-security; T20 = Additive manufacturing, IoT; T21 = IoT, cloud computing, cyber-security, big data, artificial intelligence; T22 = Horizontal/vertical integration; T23 = Artificial intelligence; T24 = Cyber-security, blockchain; T25 = Horizontal/vertical integration, simulation; T26 = Horizontal/vertical integration, cyber-security, big data; T27 = Horizontal/vertical integration, cyber-security; T28 = Horizontal/vertical integration, simulation, big data; T29 = Cyber-security, big data

There is a high concentration at Yes and little at No. This is a symptom of the fact that the use of technology can not solve the problem of the lack of skilled technical personnel; in fact, companies that massively use technology are in the vicinity of Yes.

Two additional graphs are presented to aid in comprehending the preceding graph: one presents the correlation between the answers Yes and No and the 4.0 technologies used, while the other shows the distribution of the number of employees of the companies in the sample. This clarifies the interpretation of the previous graph and avoids overlaps between the variables.

Graph 5: On the left, Graph 4 excludes employee numbers, while on the right, it omits the presence or absence of personnel shortages and the utilization of Industry 4.0 technologies



It is difficult to assume that there is a correlation between the number of employees and the perception of the shortage of qualified personnel as an imminent problem within companies; this is because the majority of companies answered Yes, regardless of the number of employees. However, while large companies are only represented among those who answered Yes, smaller companies are present among both those who answered Yes and those who answered No. This discrepancy could stem from a limited sample or from the tendency of Italian companies in machine tool sector to be predominantly small companies.

In summary, this MCA suggests that the adoption of the enabling technologies of Industry 4.0 does not significantly address the problem of the shortage of technical-skilled personnel.

Qualitative analysis results

The interviews conducted confirm many of the results of the survey.

First of all, both companies, which use 4.0 technologies, state that they invest in them to make production process more efficient.

Both companies identify the lack of specialized technical personnel as one the biggest problems in the sector and the use of technology, as well as the lack of operational training, and have repeatedly stressed the ineffectiveness of the Italian school system in preparing young profiles before they enter the labor market. In this regard, both are doubtful about the effective functioning of ITS and the school system in general, stating that they respond to this problem with in-house training. In addition, the lack of dialogue between companies and the institution emerges, which is, in most cases, almost completely absent, especially for smaller companies. In fact, the largest company claims to start collaborations, to reduce this dialogue gap, not only with ITS and with alternance training projects, but also with the Politecnico of Milan and Confindustria, offering additional training courses for interested students.

Both companies see an increased demand for more qualified personnel as a result of the implementation of technologies; the most difficult figures to find are IoT developers for the larger company and electronic technicians for the smaller one.

As far as corporate sustainability is concerned, both companies state that they make investments in energy efficiency; specifically, the larger company is starting an investment in photovoltaic panels, while the smaller company replaces its previous, outdated lighting system.

The larger company is available to discuss the other two 5.0 principles (resilience and human-centricity), demonstrating to realize their potential; it states that companies are beginning to understand that the heart of the company is the people who work there, and that conditions must therefore be created for every worker to feel comfortable within the work environment and with the technologies through which they work. The company also believes and affirms that this can generate strong benefits in terms of solid business resilience.

Discussions

The first observation that can be made is that there is still a low efficiency of technology utilization by the sector, since the productivity gains and cost reductions that should result from such investments are still low.

Important to specify, is that machine tool industry operates with increasingly technological machinery, but which requires extensive knowledge of the same; the operator and the machine must guarantee extremely high standards of precision and this makes the human contribution still fundamental (Angelopoulos et al., 2022). As a result, it is clearer to understand why jobs do not shrink after technological implementation, but how perhaps they adapt to new requirements.

As far as the topic of 5.0 is concerned, the paper outlined a situation that is, as can be expected, still poorly defined, as awareness of the paradigm within the industry is still low.

Despite this, a fair level of attention to the founding principles of the paradigm is observed; this lays the foundation for a possible future development of the paradigm within the field discussed here.

The result is that increased automation does not reduce the shortage of staff, but it can increase the need for preparation. At that point, the problem of under-prepared schools reoccurs and the need for in-house training continues.

Since the lack of specialized personnel is both a technical and a social problem, it is necessary to take action on several fronts; starting with improving education, increasing investments in automation and introducing an effective dual apprenticeship system, and ending with the introduction of work placement programs in schools, increasing facilities for introducing young people into the company and promoting technical-scientific university courses.

In conclusion, the shortage of skilled technical personnel is both technical and social. On the technical side, the absence of training institutions capable of adequately preparing young people and the implementation of the enabling technologies of Industry 4.0 are not definitive solutions to the problem, but rather accentuate the need for a more qualified workforce. On the social side, a real change in the attitude of young people towards technical professions emerges, accompanied by a lack of promotion of the sector by institutions. This leads to a limited knowledge of the real potential of the sector and, consequently, to a reduced availability of skilled personnel for professions that will be increasingly rare.

As far as the 5.0 paradigm is concerned, it is still almost completely unknown at the entrepreneurial level; however, there is a growing, albeit still unconscious, interest in the founding principles of Industry 5.0 (sustainability, resilience, human-centricity), synonymous with potential positive developments within the industry.

Research limitations. The document has some limitations that make further analysis of the topics discussed here necessary.

Firstly, the limitation related to the emerging Industry 5.0 paradigm should be highlighted; this new industrial approach, being still in its embryonic stage, is reflected in the limited availability of studies and the scarcity of consolidated literature on it.

A second aspect is the choice to focus the survey exclusively on the Italian machine tool sector; this restriction has the consequence of obtaining data that are only concentrated in the central and northern regions. Therefore, the results obtained may not fully reflect the complexity and dynamics of the Italian industrial scenery in the context of the transition from Industry 4.0 to 5.0. Future studies could deepen this issue through analyses conducted on different geographical areas.

Furthermore, mention must be made of the limitation resulting from the decision to focus the study exclusively on Ucimu member companies; this choice leads to a reduction in the variety of the sample. This reduced sample may not be representative of the entire population of companies belonging to the Italian machine tool sector, thus compromising the generalizability of the results obtained.

Managerial implications. The first managerial implication of the following elaboration is that of the identification of recruitment challenges; companies need to be aware of the underlying causes of the difficulties in identifying and recruiting technical-skilled workers, to make decisions aimed at problem mitigation.

The second implication is the identification of the development of targeted training programs as the way forward in reducing the problem; companies must invest in specific, targeted training programs to close the skills gap. Such programs must be designed to provide the necessary skills to meet the challenges of the transition from Industry 4.0 to Industry 5.0.

A further implication concerns the involvement of policymakers; companies must actively collaborate with them to influence policies and incentives that support industry transition. This implies being able to clearly communicate the industry's needs and provide input on training programs and industry development policies.

Originality of the paper. The following study is distinguished by its relevance to the demands and directives of the European Union. In particular, it focuses on the concept of Operator 5.0, identified as the core of the production system, following the mandate of the European Union that identifies it as a priority, to ensure the sustainable competitiveness of enterprises. This approach is not merely an adaptation of existing guidelines, but represents a new perspective that focuses on the well-being of people (SDG 3 – UN, 2015), the promotion of decent work (SDG 8), the stimulation of business innovation (SDG 9), the reduction of inequalities (SDG 10) and the promotion of responsible consumption and production practices (SDG 12).

In parallel, the paper recognizes and emphasizes the need to adopt an interdisciplinary approach to address the cultural change inherent in the transition to Industry 5.0. This is not only a pragmatic approach, but represents a

conceptual innovation that recognizes the complexity of the problems and the need for integrated solutions that transcend traditional sectoral boundaries.

Through an approach that combines quantitative and interdisciplinary elements, the study contributes to the development of theory regarding Operator 5.0 within the machine tool sector, a particularly relevant environment for the Italian market.

References

- AIRES MOREIRA J., CARDOSO DA SILVA J.G., CHARRUA-SANTOS F.B., FRANCO M., GARCEZ A.P.B., MOREIRA DA SILVA R., SANTOS K.F., (2021), "The Needs of the Future Society 5.0: a Challenge", pp. 6292-6294
- ANGELOPOULOS J., MOURTZIS D., PANOPOULOS N., (2022), "Operator 5.0: A Survey on Enabling Technologies and a Framework for Digital Manufacturing Based on Extended Reality", *Journal of Machine Engineering*, pp. 6-13.
- BERNUS P., NORAN O., ROMERO D., STAHR J. (2016), "The Operator 4.0: Human Cyber-Physical Systems & Adaptive Automation Towards Human-Automation Symbiosis Work Systems", *IFIP Advances in Information and Communication Technology*, pp. 6-9
- BESSA C., COELHO P., LANDECK J., SILVA C. (2023), "Industry 5.0: The Arising of a Concept", *Procedia Computer Science*, Elsevier, Holland, pp. 1141-1143
- BÜCHI G., CASTAGNOLI R., CUGNO M. (2020), "Smart factory performance and Industry 4.0", *Technological forecasting and social change*, 150, 119790.
- CASTAGNOLI R., CUGNO M., MARONCELLI A., CUGNO A. (2023), "The role of human centricity in the transition from Industry 4.0 to Industry 5.0: an integrative literature review", *Managing Technology Integration for Human Resources in Industry 5.0*, *IGI global*, pp. 68-96.
- CUGNO M., CASTAGNOLI R., BÜCHI G., PINI M. (2022), "Industry 4.0 supporting SMEs' production recovery to pre Covid-19 levels: the role of mediations in short and medium term", *Technovation*, 102443.
- KAIVO-OJA J., KNUDSEN M. (2020), "Collaborative Robots: Frontiers of Current Literature", *Journal of Intelligent Systems: Theory and Applications*, pp. 13-14.
- ROMERO D., STAHR J. (2021), "Towards the Resilient Operator 5.0: The Future of Work in Smart Resilient Manufacturing Systems", *Procedia CIRP*, pp. 1090-1092.
- UCIMU-SISTEMI PER PRODURRE (2023), Il fabbisogno di figure e di competenze professionali, *Centro Studi & Cultura di Impresa*.
- EU (2020), *Enabling Technologies for Industry 5.0*, European Commission.
- EU (2021), *Industry 5.0: Towards more sustainable, resilient and human-centric industry*, European Commission

Additive manufacturing: tecnologie umane e sostenibili per il benessere degli individui e della società

GIUSEPPE BONGIORNO¹ MARIACARMELA PASSARELLI² MICHELA SANGUEDOLCE³
LUIGINO FILICE⁴ ALFIO CARIOLA⁵

Abstract

Gli sviluppi tecnologici trasformano la società partendo dalle attività quotidiane. Negli ultimi anni sono state condotte numerose ricerche con l'obiettivo di innovare gli impianti medici utilizzati per la rigenerazione ossea e la guarigione dei tessuti corporei o più in generale per migliorare il benessere spinto anche dall'invecchiamento della popolazione. Questo lavoro esplora come nuove tecnologie afferenti all'additive manufacturing possano soddisfare alcune esigenze della società, considerando l'evoluzione tecnologica in una prospettiva incentrata sull'uomo. In questo quadro, emerge l'importanza di una revisione sistematica della letteratura, analizzando lo stato dell'arte unito agli aspetti concettuali e intellettuali. Viene proposta una nuova prospettiva teorica, basata sulla tecnologia umana, che considera l'interazione tra tre elementi principali: futuro delle tecnologie, benessere umano e bisogni della società.

Keywords: human wellbeing; technological trajectories; biomedical implants; societal changes.

Framing of the research. La trasformazione digitale e gli sviluppi tecnologici influenzano profondamente ogni aspetto della vita di ogni individuo (Io et al., 2022). Infatti, esse trasformano le attività quotidiane e il funzionamento della società, compresi lo sviluppo economico, i processi lavorativi, i metodi di produzione e i modelli di consumo (Akbari et al., 2020). Secondo (Bernard, 1991), "la tecnologia è il mezzo e il processo attraverso il quale noi, come società, produciamo la sostanza della nostra esistenza". Essa comprende "strumenti, materiali, forme di energia, tecniche e organizzazione del lavoro". Questo approccio, però, non prende in considerazione alcuni aspetti legati al miglioramento della vita delle persone e al soddisfacimento di bisogni individuali e della società (Schiavone & MacVaugh, 2009). Tra le diverse tipologie di bisogni (Maslow, 1954), sempre più spesso viene data priorità a quelli psicologici di base e universali, che comprendono la salute, il benessere e la qualità della vita (Deci & Ryan, 2000). Essi non sono cambiati nel corso della storia; ed è proprio lo sviluppo delle nuove tecnologie e la loro applicazione a garantire la creazione di nuovi prodotti e servizi funzionali al soddisfacimento di bisogni universali e non (Park et al., 2012; Bazan, 2019). La tecnologia e la società, infatti, sono due entità correlate, co-dipendenti e si influenzano l'una con l'altra (Appio et al., 2017; Si et al., 2020). Tuttavia, la società sta cambiando e bisogna tenere conto di nuove sfide (Kraus et al., 2021). Si pensi ad esempio al rapido aumento della percentuale di persone di età pari o superiore ai 60 anni, con un conseguente aumento dell'incidenza delle malattie, soprattutto nei Paesi più sviluppati; l'invecchiamento della popolazione genera anche un aumento dell'incidenza delle disabilità sia nei Paesi sviluppati che in quelli in via di sviluppo. Secondo i Centers for Disease Control and Prevention (CDCP), ogni anno negli Stati Uniti circa 54,4 milioni di adulti (circa il 22,7% della popolazione totale) ricevono una diagnosi di artrite, artrite reumatoide, infarti, ictus, lupus o fibromialgia. Quindi, sempre più persone hanno esigenze specifiche che devono essere soddisfatte attraverso dispositivi implantari come pacemaker, stent o impianti ortopedici per lesioni agli arti, lesioni alla colonna vertebrale, disturbi articolari e difetti craniomaxillofacciali. Gli impianti in ambito medico, infatti, sono in aumento con previsioni che superano il 39% di nuova domanda entro il 2050 (Pabinger et al., 2018). In altre parole, la popolarità dei dispositivi medici impiantati è aumentata vertiginosamente e sono ampiamente accettati come possibile miglioramento della qualità della vita di milioni di persone in tutto il mondo (Global Market Insights, 2023). La maggior parte delle articolazioni artificiali o altri impianti funziona bene e rimane nell'organismo per lungo tempo, facendo emergere la necessità di controlli periodici. Il numero

¹ University of Calabria
e-mail: giuseppe.bongiorno@unical.it

² University of Calabria
e-mail: michela.sanguedolce@unical.it

³ University of Calabria
e-mail: luigino.filice@unical.it

⁴ University of Calabria
e-mail: mariacarmela.passarelli@unical.it

⁵ University of Calabria
e-mail: alfio.cariola@unical.it

sempre più ridotto di chirurghi disponibili per assistere questi volumi crescenti di pazienti rende, però, necessaria la riduzione del numero di procedure di revisione. Inoltre, gli impianti possono creare problemi a causa di infezioni e altre gravi condizioni legate all'ambiente corporeo (Zhai et al., 2023). Tuttavia, l'avvento di nuove tecnologie abilitanti come l'Additive Manufacturing (AM), le frequenti modifiche tecniche e/o produttive e i nuovi design degli impianti sono riusciti a migliorare la funzione e la longevità (Zhang et al., 2023). Infatti, data l'importanza della tecnologia, nell'ultimo decennio sono state condotte numerose ricerche per individuare nuovi metodi e nuove tecnologie avanzate (Qadir et al., 2018). Indubbiamente, negli ultimi anni sono stati compiuti molti progressi e i risultati sono soddisfacenti nel caso degli impianti ortopedici e dentali (Henkel et al., 2013). Dunque, la relazione tra lo sviluppo tecnologico, il benessere umano e la qualità della vita sta diventando un tema rilevante, nel field dell'innovazione e del management dell'innovazione, al fine di comprendere l'impatto della scienza sulla società. Nello specifico, è importante comprendere come l'avanzamento nell'applicazione di nuove tecnologie come l'AM possa seguire traiettorie sostenibili e incentrate sul rispetto dell'"uomo".

Purpose of the paper. Il presente lavoro si propone, dunque, di analizzare l'attuale stato dell'arte attraverso una Systematic-Literature-Review (SLR) che si focalizza sullo sviluppo di tecnologie nell'ambito dei dispositivi biomedici, con il fine di identificare le principali tendenze presenti e future. In questa prospettiva, l'analisi dei trend tecnologici è estremamente utile per arrivare a comprendere lo stato dell'arte e generare informazioni ad alto valore aggiunto sul benessere umano legato alla tecnologia (Canongia et al., 2004; Suh e Sohn, 2015). È proprio analizzando l'evoluzione tecnologica di impianti e protesi mediche che si possono acquisire conoscenze e capire come risolvere i bisogni di una società che cambia, esplorando nuove traiettorie (Dosi, 1982; Ittipanuvat et al., 2014). La qualità della vita è un fattore chiave per gli individui e per la società. Pertanto, lo sviluppo di nuove traiettorie tecnologiche può trasformare la vita di milioni di persone in tutto il mondo e i ricercatori, le aziende e i governi (a diversi livelli) sono chiamati a generare impatti positivi e sostenibili per risolvere i bisogni della società. La valorizzazione della conoscenza deve essere finalizzata alla gestione efficace ed efficiente delle risorse, ma soprattutto a creare un'elevata qualità della vita. Come afferma l'OMS, infatti: "La salute è un investimento, non un costo, la spesa per la salute è un investimento che sostiene la qualità della vita, la felicità e la prosperità"

Methodology. Per questo lavoro è stato scelto un approccio di SLR, rigoroso e pertinente, che produce conoscenza e aiuta a identificare tendenze, percorsi di ricerca e potenziali ricerche future (Kraus et al., 2020, 2022; Lim et al., 2022). Più in dettaglio, secondo Tranfield et al. (2003), la revisione sistematica si basa sui filtri che rendono il processo replicabile, consentendo di ridurre al minimo i "bias" nei risultati. Le principali fasi metodologiche suggerite da studi precedenti per sviluppare una metodologia di SLR, trasparente e replicabile possono essere riassunte nelle "3D" (Dumay, 2010). In particolare, la prima richiede la definizione delle domande di ricerca che rappresentano il passo preliminare nella conduzione di una SLR (Massaro et al., 2016). Il presente lavoro ha l'obiettivo di rispondere alle seguenti domande: quali sono i trend tecnologici nell'ambito della ricerca sui dispositivi implantari? Come le nuove tecnologie possono aiutare il cambiamento umano e sociale? Per rispondere a queste domande di ricerca, è importante progettare un protocollo di revisione, che risponde alla seconda D, per determinare gli articoli da includere per eseguire una ricerca completa del materiale. Seguendo linee guida relative al Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Moher et al., 2009; Page et al., 2021) per ridurre al minimo gli errori di interpretazione dei risultati degli studi raccolti, si è passati all'ultima D. Essa prevede lo sviluppo di un quadro di codifica. La metodologia scelta per l'analisi è quella bibliometrica (Kraus et al., 2022), che prevede una mappatura delle parole chiave, dei trend topic, delle co-occorrenze, delle tematiche e della loro evoluzione, delle co-citation e della bibliographic coupling. L'analisi documentale e bibliografica è stata condotta utilizzando la piattaforma Web of Science (Clarivate, 2023) per recuperare tutti i documenti rilevanti sull'argomento. La ricerca parte dal 1985 e arriva fino a fine 2023 per coprire lo sviluppo complessivo dalla pubblicazione del primo articolo sull'argomento. I record inizialmente identificati sono stati 9169 rappresentati esclusivamente da articoli di riviste scientifiche in inglese per identificare i lavori di interesse internazionale. Le categorie WoS non pertinenti riguardanti aree diverse a quelle strettamente legate ai temi in oggetto sono state escluse dalla ricerca, ottenendo un numero finale di 7166 paper. Per l'analisi dei dati sono stati utilizzati strumenti quali il pacchetto Bibliometrix (R-studio) utile per la ricerca quantitativa bibliometrica e di scienze mapping (Aria e Cuccurullo, 2017).

Results. Questo studio rappresenta uno dei primi tentativi di strutturare un quadro completo che descriva in dettaglio la configurazione delle componenti multidimensionali che dovrebbero essere considerate nello sviluppo di nuove tecnologie. Le revisioni sistematiche della letteratura giocano sempre più un ruolo cruciale nel sintetizzare i risultati delle ricerche passate per utilizzare in modo efficace la base di conoscenza esistente, far progredire le linee di ricerca e fornire spunti basati sull'evidenza nella pratica, oltre ad esercitare e sostenere il giudizio e la competenza professionale (Kraus et al. 2020; Kraus et al. 2022). Il lavoro si propone di capire se e come sia possibile considerare una prospettiva tecnologica basata non semplicemente sul progresso scientifico ma anche umano, orientato ad applicazioni sostenibili ed etiche. I risultati del lavoro dimostrano come lo sviluppo di nuovi dispositivi implantari basati sull'applicazione di tecnologie digitali e innovative può contribuire al cambiamento sociale, migliorando il benessere individuale e collettivo. Si evidenzia, infatti, un cambio di rotta. Si sviluppano sempre più tecnologie mediche che superano gli approcci tradizionali e affrontano un'ampia gamma di problemi di salute e sostenibilità, con un impatto significativo sulla vita degli individui e della società nel suo complesso (Garud & Ahlstrom, 1997; Ittipanuvat et al., 2014). Dal lavoro emerge che i recenti progressi nei biomateriali e le tecniche di produzione stanno rivoluzionando il campo degli impianti medici e anche la vita dei pazienti, offrendo nuove soluzioni promettenti e nuovi vantaggi per la vita umana. I dispositivi medici e le protesi, rappresentano un chiaro esempio di tecnologie applicate alle persone in quanto "esseri umani" (Rose, 1996).

. Si va verso un approccio che può essere definito di “Human Technology”. Infatti, il concetto di Human Technology può essere visto come l'orizzonte che esplora il rapporto tra l'uomo e la tecnologia, sia esistente che emergente e segna un punto di svolta importante, sottolineando il ruolo dell'uomo al centro di ogni applicazione tecnologica innovativa. Questo cambiamento è stato possibile grazie alle tecnologie abilitanti come l'AM che migliorano l'evoluzione aziendale e sociale, permettendo di riconvertire e riutilizzare le vecchie conoscenze all'interno di un nuovo mondo digitale, tecnologico e imprenditoriale.

Questi nuovi impianti e protesi prodotte con tecnologie innovative hanno delle peculiarità che li rendono diversi da quelli convenzionali: rappresentano molto di più di una pura sostituzione. Infatti, la digitalizzazione dei prodotti e dei processi “abilita” la tecnologia ad prospettiva umana favorendo una visione olistica che considera l'uomo nella sua interezza fisica e psicologia, piuttosto che una mera “sostituzione fisica” di un organo (Schiavone & Ferretti, 2021). C'è da sottolineare, infatti la precisione e la possibile personalizzazione dei prodotti finali. A differenza delle tecnologie tradizionali, che spesso impiegano approcci standardizzati, questi dispositivi basati su AM possono essere adattati alle esigenze del singolo paziente, ottimizzando i risultati del trattamento e migliorando l'esperienza dell'utente e la sua condizione psicologica. Quindi, attraverso l'AM è possibile creare impianti su misura che si adattano all'anatomia unica del paziente, migliorandone la funzionalità e riducendo il rischio di complicazioni. Inoltre, impianti su misura più durevoli e biocompatibili riducono la necessità di interventi di sostituzione, riducendo lo stress dei pazienti, ma anche i costi sanitari.

Prendendo in considerazione l'argomento sostenibilità queste soluzioni risultano essere biocompatibili e biomimetiche, imitando il più possibile le funzioni naturali del corpo umano. L'uso di biomateriali (progettati per interagire con i sistemi biologici) e lo sviluppo di nuovi materiali biocompatibili hanno portato a miglioramenti significativi nella durata e nella biocompatibilità degli impianti. Questo approccio riduce il rischio di reazioni avverse e migliora l'integrazione del dispositivo con i sistemi fisiologici del paziente. Le tecnologie tradizionali potrebbero non presentare questo livello di compatibilità, causando potenzialmente maggiori disagi o complicazioni. A differenza delle tecnologie tradizionali, che possono limitarsi a fornire un sollievo sintomatico, alcuni dispositivi medici e protesi moderne mirano a ripristinare o migliorare le funzioni perse. Si tratta di dispositivi che supportano la rigenerazione dei tessuti offrendo mobilità e destrezza, rappresentando una svolta significativa rispetto ai trattamenti convenzionali. Si tratta di applicazioni tecnologiche sostenibili dal punto di vista economico, sociale ed ambientale.

Un altro aspetto da sottolineare, riguarda l'integrazione tra tecnologie IoT (come sensori, analisi dei dati e connettività) e dispositivi medici/protesi basati su AM. Tale caratteristica consente monitoraggi in tempo reale, raccolta dati e gestione a distanza, favorendo un approccio più proattivo e personalizzato all'assistenza sanitaria. Gli impianti “Smart” sono progettati per monitorare e rispondere ai cambiamenti del corpo del paziente, rendendoli ideali per condizioni come il diabete o le malattie cardiache. Le tecnologie tradizionali sono in genere prive di tali funzioni limitando la loro capacità di adattamento dinamico alle esigenze del paziente. Anche l'ottimizzazione delle prestazioni nel tempo è possibile grazie a sistemi adattivi e di apprendimento, che consentono ai dispositivi di evolvere nel tempo. Con l'aiuto di algoritmi di apprendimento automatico è possibile analizzare i dati del paziente in modo da regolare le impostazioni del dispositivo per adattarlo meglio alle esigenze individuali e della società. Anche in questo caso, queste peculiarità non sono presenti nelle soluzioni tradizionali.

I dispositivi medici e le protesi stanno rivoluzionando l'assistenza sanitaria fornendo soluzioni più accurate, intelligenti e incentrate sul paziente rispetto alle alternative tradizionali. Con il rapido progresso della tecnologia, le possibilità di diagnosi, trattamento e riabilitazione sono in continua espansione (Gastaldi et al., 2018). Questo promette un futuro in cui l'assistenza sanitaria non solo sarà più efficace, ma anche adattata alle esigenze specifiche di ciascun paziente. Le tecnologie umane rendono la nostra vita facile, comoda, sana e piacevole e possono supportare gli esseri umani, ridisegnando processi e prodotti. In questo modo, la tecnologia migliora la nostra vita attraverso la sua continua evoluzione che si traduce in funzionalità sempre più avanzate (Cho et al., 2009).

La recente pandemia ha messo in luce la nostra dipendenza dalla tecnologia. Tuttavia, è emersa la necessità di creare tecnologie che abbiano una resa per l'essere umano più riconoscibile ispirando fiducia. Di giorno in giorno, l'esigenza di creare “tecnologie umane” diventa più forte e richiede una forte integrazione con l'etica. È innegabile che il rapporto tra uomo e tecnologia è caratterizzato da grandi opportunità che hanno posto le basi per il progresso tecnologico dell'umanità. Tuttavia, a differenza del passato, stiamo assistendo a un nuovo fenomeno che vede la tecnologia stessa adattarsi alle esigenze di chi la utilizza, umanizzandosi (Galimberti, 2009). Probabilmente, nel prossimo futuro, assisteremo a una rapida fusione tra uomo e macchina in cui la nostra umanità sarà “incorporata” nella tecnologia. Quello che stiamo vivendo è uno dei momenti più rivoluzionari della storia dell'umanità che pone la tecnologia al centro di un cambiamento epocale come strumento per migliorare le nostre capacità umane (Marchiori et al., 2022). Oltre ai cambiamenti funzionali nella vita quotidiana, le tecnologie umane hanno effetti sul benessere sociale ed emotivo. Migliorano le capacità fisiche, ma il loro impatto si estende alla sfera della salute mentale. Infatti, ripristinando la fiducia in sé stessi, promuovendo l'indipendenza, facilitando l'integrazione sociale, favorendo l'adattamento psicologico e ispirando un senso di possibilità, le protesi potenziano gli individui e contribuiscono al loro benessere mentale complessivo. È fondamentale riconoscere e dare priorità al profondo impatto che questi dispositivi hanno sulla salute mentale, consentendo alle persone di affrontare la vita al meglio.

Infine, i responsabili delle politiche sanitarie la prevenzione, l'autogestione e il trattamento delle malattie croniche come una sfida importante (Nolte & McKee, 2008). Di conseguenza, gli sviluppi tecnologici a favore della salute sono

sempre più posizionati nel contesto più ampio del sostegno a un invecchiamento attivo e sano e a una vita indipendente (Cabrera & Malanowski, 2009; Peine & Moors, 2015). Le nuove tecnologie consentono alle persone di evitare la stigmatizzazione sociale che, a sua volta, permette la loro integrazione sociale e la riduzione dei problemi emotivi legati a disabilità e carenze fisiche e psicologiche. Pertanto, la sfida dell'innovazione non risiede più solo nel potenziale economico, ma anche nei cambiamenti sociali; il processo innovativo sta evolvendo verso forme di co-sviluppo sempre più marcate. Il sapere scientifico e l'applicazione tecnologica devono essere sviluppati portando sempre il paziente "al centro"; questa rappresenta una traiettoria tecnologica con un forte impatto sociale e non solo economico (Ittipanuvat et al., 2014; Kwon & Park, 2018).

Research limitations. Questo lavoro non è esente da limitazioni. Infatti, si tratta di una prima analisi sistematica della letteratura che abbraccia più discipline, finalizzata a spiegare fenomeni altamente mutevoli. Future ricerche si stanno focalizzando sull'analisi brevettuale e sulle dinamiche competitive.

Managerial implications. I cambiamenti sociali richiedono agli individui e soprattutto agli attori aziendali di comprendere sia le esigenze tecnologiche che quelle sociali per generare l'innovazione. Le tecnologie richiedono una prospettiva umana nello sviluppo tecnologico; c'è bisogno quindi, di modelli di "co-sviluppo" che concilino il progresso tecnologico, quello umano e i bisogni della società (Schiavone & Ferretti, 2021). Ciò implica una transizione che cambia radicalmente lo scenario dell'innovazione, determinando l'erosione dei classici principi guida del business basati sull'orientamento a breve termine con obiettivi di mero profitto. Questo richiede lo sviluppo di un nuovo approccio al business, dettato da un cambiamento globale verso una tecnologia umana che supporta il benessere collettivo. Di conseguenza, le imprese che applicano le nuove tecnologie proponendo nuovi prodotti/servizi/processi devono riconfigurare la loro value proposition (cosa viene offerto) e rimodellare il business model (Berman, 2012; Weill & Woerner, 2013; Metallo et al., 2018), proponendo nuove dimensioni del "valore". Quindi, accanto al valore economico e contabile, si devono promuovere nuove dimensioni che includono l'etica e la sostenibilità (Fasbinder, 2010; van Noort, 2012). Lo studio, dunque, propone una visione sia tecnica che manageriale, fornisce una SLR multidisciplinare e offre anche una discussione approfondita sulle questioni manageriali che le aziende dovrebbero affrontare nel prossimo futuro.

Originality of the paper. Sebbene la letteratura sull'argomento sia in espansione, soprattutto in termini di prospettiva tecnologica, nessuno studio ha offerto una prospettiva multidisciplinare incrociando la letteratura tecnico/ingegneristica con quella di management (Shichman et al., 2022; Subbiah Ponniah et al., 2023). Il nostro studio propone un esame delle traiettorie tecnologiche nel campo degli impianti e delle protesi biomediche per capire se e come l'evoluzione tecnologica si muove verso una prospettiva incentrata sulla creazione di valore e non di profitto (Kwon & Park, 2018). La comprensione del topic dal punto di vista tecnologico e di business è fondamentale poiché offre spunti di ricerca futuri finalizzati ad analizzare la struttura dell'industria e del settore, anche attraverso lo studio della letteratura brevettuale (Bhat, 2005).

References

- AKBARI M., REZVANI A., SHAHRIARI E., ZÚÑIGA M.A., POULADIAN H. (2020), "Acceptance of 5 G technology: Mediation role of Trust and Concentration", *Journal of Engineering and Technology Management*, vol. 57, 101585.
- APPIO F.P., MARTINI A., FANTONI G. (2017), "The light and shade of knowledge recombination: Insights from a general-purpose technology", *Technological Forecasting and Social Change*, vol. 125, pp. 154-165.
- ARIA M., CUCCURULLO C. (2017), "bibliometrix: An R-tool for comprehensive science mapping analysis", *Journal of Informetrics*. Elsevier Ltd, vol. 11, n. 4, pp. 959-975.
- BAZAN C. (2019), "From lab bench to store shelves: A translational research & development framework for linking university science and engineering research to commercial outcomes", *Journal of Engineering and Technology Management*, vol. 53, pp. 1-18.
- BERMAN B. (2012), "3-D printing: The new industrial revolution", *Business Horizons*, vol. 55, n. 2, pp. 155-162.
- BERNARD E. (1991), "Technological Change and Skills Development. EEE700 Adults Learning: The Changing Workplace A.", in Faculty of Education, Deakin University, Geelong, Victoria A. 3217. (ed.) *Adult and Workplace Education*.
- BHAT J.S.A. (2005), "Concerns of new technology based industries—the case of nanotechnology", *Technovation*, vol. 25, n. 5, pp. 457-462.
- CABRERA M., MALANOWSKI N. (2009), "Ageing Societies, Information and Communication Technologies and Active Ageing: Introductory Remarks", in *Volume 23: Information and Communication Technologies for Active Ageing*. doi: 10.3233/978-1-58603-937-0-1.
- CANONGIA C., ANTUNES A., FREITAS PEREIRA M. DE N. (2004), "Technological foresight—the use of biotechnology in the development of new drugs against breast cancer", *Technovation*, vol. 24, n. 4, pp. 299-309.
- CHO V., CHENG T.C.E., HUNG H. (2009), "Continued usage of technology versus situational factors: An empirical analysis", *Journal of Engineering and Technology Management*, vol. 26, n. 4, pp. 264-284.
- DECI E.L., RYAN R.M. (2000), "The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior", *Psychological Inquiry*, vol. 11, n. 4, pp. 227-268.
- DOSI G. (1982), "Technological paradigms and technological trajectories", *Research Policy*, vol. 11, n. 3, pp. 147-162.
- DUMAY J.C. (2010), "A critical reflective discourse of an interventionist research project", *Qualitative Research in Accounting & Management*. Edited by H. Roberts, vol. 7, n. 1, pp. 46-70. doi: 10.1108/11766091011034271.
- FASBINDER D.J. (2010), "Innovation for restorative treatment.", *Compendium of continuing education in dentistry*, vol. 31, n. 4, pp. 2-11.
- GALIMBERTI U. (2009), "Man in the age of technology", *Journal of Analytical Psychology*, vol. 54, n. 1, pp. 3-17.

- GARUD R., AHLSTROM D. (1997), "Technology assessment: a socio-cognitive perspective", *Journal of Engineering and Technology Management*, vol. 14, n. 1, pp. 25-48.
- GASTALDI L., APPIO F.P., CORSO M., PISTORIO A. (2018), "Managing the exploration-exploitation paradox in healthcare: Three complementary paths to leverage on the digital transformation. *Business Process Management Journal*, vol. 24, n. 5, pp. 1200-1234.
- HENKEL J., WOODRUFF M.A., EPARI D.R., STECK R., GLATT V., DICKINSON I.C., HUTMACHER D.W. (2013), "Bone regeneration based on tissue engineering conceptions—a 21st century perspective", *Bone research*, vol. 1, n. 1, pp. 216-248.
- IO H.N., LEE C.B., LIAN Z. (2022), "Sentiments about autonomous vehicles", *Journal of Engineering and Technology Management*, vol. 66, 101717.
- ITTIPANUVAT V., FUJITA K., SAKATA I., KAJIKAWA Y. (2014), "Finding linkage between technology and social issue: A Literature Based Discovery approach", *Journal of Engineering and Technology Management*, vol. 32, pp. 160-184.
- KRAUS S., SCHIAVONE F., PLUZHNIKOVA A., INVERNIZZI A.C. (2021), "Digital transformation in healthcare: Analyzing the current state-of-research", *Journal of Business Research*, vol. 123, pp. 557-567.
- KRAUS S., BREIER M., LIM W.M., DABIĆ M., KUMAR S., KANBACH D., FERREIRA J.J. (2022), "Literature reviews as independent studies: guidelines for academic practice", *Review of Managerial Science*, vol. 16, n. 8, pp. 2577-2595.
- KRAUS S., BREIER M., DASÍ-RODRÍGUEZ S. (2020), "The art of crafting a systematic literature review in entrepreneurship research", *International Entrepreneurship and Management Journal*, vol. 16, n. 3, pp. 1023-1042.
- KWON H., PARK Y. (2018), "Proactive development of emerging technology in a socially responsible manner: Data-driven problem solving process using latent semantic analysis", *Journal of Engineering and Technology Management - JET-M*, vol. 50, n. July, pp. 45-60.
- LIM W.M., KUMAR S., ALI F. (2022), "Advancing knowledge through literature reviews: "what", "why", and "how to contribute"", *The Service Industries Journal*, vol. 42, n. 7-8, pp. 481-513.
- MARCHIORI D.M., RODRIGUES R.G., POPADIUK S., MAINARDES E.W. (2022), "The relationship between human capital, information technology capability, innovativeness and organizational performance: An integrated approach", *Technological Forecasting and Social Change*, vol. 177, 121526.
- MASLOW A.H. (1954) *Motivation and personality*. Harper & Row.
- MASSARO M., HANDLEY K., BAGNOLI C., DUMAY J. (2016), "Knowledge management in small and medium enterprises: a structured literature review", *Journal of Knowledge management*, vol. 20, n. 2, pp. 258-291.
- METALLO C., AGRIFOGLIO R., SCHIAVONE F., MUELLER J. (2018), "Understanding business model in the Internet of Things industry", *Technological Forecasting and Social Change*, vol. 136, pp. 298-306.
- MOHER D., LIBERATI A., TETZLAFF J., ALTMAN D.G., PRISMA GROUP* T. (2009), "Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement", *Annals of internal medicine*, vol. 151, n. 4, pp. 264-269.
- NOLTE E. AND MCKEE M. (eds) (2008) *Caring for people with chronic conditions*. Open University Press.
- VAN NOORT R. (2012), "The future of dental devices is digital", *Dental Materials*, vol. 28, n. 1, pp. 3-12.
- PABINGER I., VAN ES N., HEINZE G., POSCH F., RIEDL J., REITTER E.M., AY C. (2018), "Development and validation of a clinical prediction model for cancer-associated venous thromboembolism in two independent prospective cohorts", *The Lancet. Haematology*, vol. 5, n. 7, pp. e289.
- PAGE M.J., MCKENZIE J.E., BOSSUYT P.M., BOUTRON I., HOFFMANN T.C., MULROW C.D., MOHER D. (2021), "The PRISMA 2020 statement: an updated guideline for reporting systematic reviews", *Bmj*, vol. 372.
- PARK Y., GEUM Y., LEE H. (2012), "Toward integration of products and services: Taxonomy and typology", *Journal of Engineering and Technology Management*, vol. 29, n. 4, pp. 528-545.
- PEINE A., MOORS E.H.M. (2015), "Valuing health technology - habilitating and prosthetic strategies in personal health systems", *Technological Forecasting and Social Change*, vol. 93, pp. 68-81.
- ROSE N. (1996) *Inventing our Selves*. Cambridge University Press. doi: 10.1017/CBO9780511752179.
- SCHIAVONE F., FERRETTI M. (2021), "The FutureS of healthcare", *Futures*, vol. 134, 102849.
- SCHIAVONE F., MACVAUGH J. (2009), "A user-based perspective on limits to the adoption of new technology", *International Journal of Technoentrepreneurship*, vol. 2, n. 2, p. 99.
- SHICHMAN I., SOMERVILLE L., LUTES W.B., JONES S.A., MCCALDEN R., SCHWARZKOPF R. (2022), "Outcomes of novel 3D-printed fully porous titanium cup and a cemented highly cross-linked polyethylene liner in complex and revision total hip arthroplasty", *Arthroplasty*, vol. 4, n. 1, pp. 51.
- SI S., ZAHRA S.A., WU X., JENG D.J.F. (2020), "Disruptive innovation and entrepreneurship in emerging economics", *Journal of Engineering and Technology Management*, vol. 58, vol. 101601.
- PONNIAH H.S., LOGISHETTY K., EDWARDS T. C., SINGER G.C. (2023), "Survivorship and risk factors for revision of metal-on-metal hip resurfacing: a long-term follow-up study", *Bone & Joint Open*, vol. 4, n. 11, pp. 853-858.
- SUH J., SOHN S.Y. (2015), "Analyzing technological convergence trends in a business ecosystem", *Industrial Management & Data Systems*, vol. 115, n. 4, pp. 718-739.
- TRANFIELD D., DENYER D., SMART P. (2003), "Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review", *British Journal of Management*, vol. 14, n. 3, pp. 207-222.
- WEILL P., WOERNER S.L. (2013), "Optimizing Your Digital Business Model", *MITSloan Management Review*, vol. 54, n. 3.
- ZHAI Y., ZHANG H., WANG J., ZHAO D. (2023), "Research progress of metal-based additive manufacturing in medical implants", *Reviews on Advanced Materials Science*, vol. 62, n. 1, 20230148.
- ZHANG Z., QI J., ZHANG X., WANG J., LI Z., XIN M. (2023), "What can we learn from breast implant explantation: a 28-year, multicenter retrospective study of 1004 explantation cases", *Aesthetic Plastic Surgery*, vol. 47, n. 5, pp. 1743-1750.

Websites

BIBLIOMETRIX (2023), Available at: <http://www.bibliometrix.org/> (Accessed: 30 December 2023).

CLARIVATE (2023) *Web of Science Platform*. Available at: <https://clarivate.com/products/scientific-and-academic-research/research-discovery-and-workflow-solutions/webofscience-platform/> (Accessed: 28 December 2023).

GLOBAL MARKET INSIGHTS (2023) *Dental Implants Market - by Product (Tapered Implants, Parallel-walled Implants), By Material (Titanium, Zirconium), By End-use (Hospitals, Dental Clinics) & Forecast, 2023-2032*. Available at: <https://www.gminsights.com/industry-analysis/dental-implants-> (Accessed: 4 December 2023).

Well-being in the transition from Industry 4.0 to Industry 5.0

MICHELA PICCAROZZI¹ FEDERICA CABONI² ROBERTO BRUNI³

Abstract

The Industrial Revolution marked the evolution of society through technological development and the introduction of innovations. In the current scenario, we are experiencing a coexistence of two revolutions. The first, Industry 4.0 focused on the automation and digitization of production. The more recent, Industry 5.0 is oriented towards the centrality of human beings' production processes and in general in the development of a sustainable society. Both revolutions have brought value growth, primarily to companies, to the global economic system and society at large by improving work, employment and general creating well-being. The purpose of this research work is to analyse how Industry 4.0 and Industry 5.0 contributed and continue to contribute to well-being creation. Field, output and technologies involved in well-being creation will be investigated with a systematic literature review and a content analysis highlighting contact points and differences between the two revolutions and the evolution of the scenario at this time of transition. Managerial implications and limitations are included in the analysis.

Key words: Industry 4.0; Industry 5.0; well-being; transition; systematic literature review; content analysis.

Framing of the research. Industrial revolutions have historically initiated radical processes of change and development in production systems, labour dynamics and society as a whole (Xu et al., 2018; Sharma and Sing, 2020). Each revolution has brought new opportunities, introduced new technologies and placed new challenges and demands on society (Boninsegni et al., 2022). This has all contributed to the creation of new levels of prosperity but has also revealed weaknesses and difficulties in applying and integrating human beings and technological innovations above all (Koc and Teker, 2019). In the current economic and social context, we are witnessing the coexistence of two industrial revolutions (Leng et al., 2022). The first one, Industry 4.0, which has been underway since around 2010, has now reached a wide application and internalisation from the business to the social context. The second, Industry 5.0, has recently started a process of revision of the previous paradigm aimed at affirming the centrality of human beings and social sustainability at the core of technological development (Nahavandi, 2019; Breque et al., 2021).

The impacts of the two revolutions have been at the centre of scientific debate, for years with the topic of Industry 4.0 and more recently in Industry 5.0 perspective (Xu et al., 2021). Numerous aspects and areas were analysed and the contributions of the two revolutions were assessed (i.e. production efficiency, sustainability, performance, etc.), including the study of the possible impact in terms of well-being creation (Hanefah, 2018; Kadir and Broberg, 2020).

Well-being can be considered a multifaceted and complex concept (Halbreich, 2022) often associated with innovation and technological development, even in a controversial way (Orben and Przybylski, 2019). The concept of well-being is derived from the combination of a set of factors such as prosperity or quality of life, and quality of social relations, referring to the mental, physical, economic or emotional sphere of the person (Fletcher, 2016). Well-being can thus be considered in the sphere of the worker, in that of the consumer and/or citizen, and in that of the natural environment, opening up different scenarios that from the individual allow one to consider the perspective of society as a whole and thus of general well-being (Kadir and Broberg, 2020).

In this context, the two revolutions have and are currently making their contribution to creating favourable conditions for the implementation of well-being dynamics (Xu et al., 2021). Often, the focus of studies in this lens is based on the enabling technologies of the two revolutions, which are considered the operational tools driving the evolution and changes taking place, including those concerning well-being (Zizic et al., 2022).

In this context, the literature is beginning a debate comparing the two revolutions, starting to investigate the foundations of well-being and the dynamics of creation (Xu et al., 2021). This extended abstract aims to fit into the current scientific debate by attempting to focus on the characteristics of well-being between the two industrial revolutions and in a transitional perspective.

¹ University of Tuscia
e-mail: piccarozzi@unitus.it

² University of Bologna
e-mail: f.caboni@unibo.it

³ University of Cassino and Southern Lazio
e-mail: r.bruni@unicas.it

Purpose of the paper. Starting from the literature analysis, the extended abstract aims to analyse how Industry 4.0 and Industry 5.0 have contributed and continue to contribute to well-being creation. Field, output and technologies involved in achieving well-being will be investigated to analyse points of contact and differences between the two revolutions and to understand the evolution of the scenario in this time of transition.

Methodology. The analysis was conducted through a systematic literature review and a subsequent content analysis of the selected papers (Abatecola et al., 2013). The systematic literature review was implemented following the methodological scheme proposed by Mayring (2004) and Denyer and Tranfield (2009). Four analysis steps enabled the selection of the sample of papers to be investigated using content analysis: materials collection, descriptive analysis, categories selection and analysis of sample materials. The papers were extracted from the Scopus database, considered one of the most relevant and comprehensive databases internationally in management studies (Newbert, 2007; Merli et al., 2018; Sassanelli et al., 2019). Two different searches were implemented: the first using the keywords “Industry 4.0” and “well-being” (266 papers have resulted from the research), the second “Industry 5.0” and “well-being” (109 papers). The results were filtered by considering papers in the areas of “business, management, accounting”, “social science” and “decision science” (91 papers in the field of Industry 4.0 and 42 papers in Industry 5.0). Subsequently, only papers in English published in Journals with peer review were selected to increase the reliability of the information (39 papers and 20 papers). Finally, the abstract reading with an inclusion/exclusion approach, made it possible to exclude papers that were not significant about the research objective (29 papers and 18 papers). The final papers (47 papers) were downloaded and analysed in an organised Excel database to extract general information (i.e. year, journal, methodology) and to start the content analysis (Mayring, 2004). Table 1 summarises the outline of the methodology.

Table 1 - Methodology outline

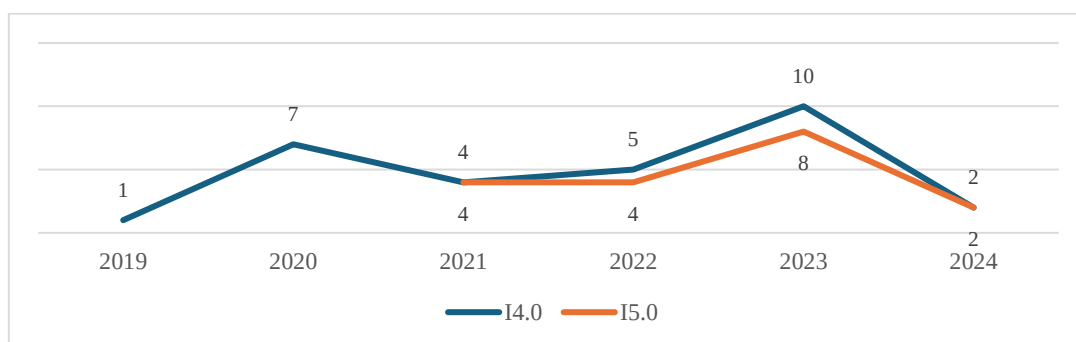
	“Industry 4.0” + “well-being”	“Industry 5.0” + “well-being”
Sistematic review step	n. papers	n. papers
Keyword search	266	109
Subject area selection	91	42
Paper characteristics selection	39	20
Abstract reading	29	18
Total	47	

Source: Author elaboration

Results. The analysis of the results was divided into two sections. In the first one, the general aspects of the papers were analysed to understand their characteristics and evolution over time (year of publication, journal and methodology). In the second section (by the application of content analysis), the specific research aspects of the individual papers were investigated about: field, output and technologies involved in achieving well-being.

The analysis of the publication time frame shows a concentration of articles in the years 2021-23 (Figure 1).

Figure 1 - Publication trends



Source: Author elaboration

From the point of view of the methodology used, we can say that 70% of the papers are empirical and thus bring concrete validation of the considerations regarding the two revolutions and the well-being created. Regarding the editorial placement of the papers, for Industry 4.0 we find among the journals with the most recurrences: Sustainability (4 papers, 14% of the sample), International Journal of Production Research (3 papers, 10%), International Journal of Industrial Ergonomics (2 papers, 7%) and Technology in Society (2 papers, 7%). The remaining papers (18 papers) are placed in journals dealing with production, environment, and quality. However, regarding papers on Industry 5.0, a prevalence of recurrences emerges in the journals: International Journal of Production Research (3 papers, 17% of the sample), Systems (3 papers, 17%) and Sustainability (2 papers, 11%).

The second section of results, which emerged from the content analysis of the selected papers, provides information on the field, output and technologies involved in achieving well-being.

Table 2 shows where, according to the literature, the two industrial revolutions are read in terms of well-being creation.

Table 2 - Industry 4.0 and 5.0 well-being field results

Industry 4.0	n.	%	Industry 5.0	n.	%
Industry in general	5	17%	Production	7	39%
Production	5	17%	Firms organisation	4	22%
Society in general	5	17%	Society in general	3	17%
Firms organisation	4	14%	City	1	6%
Education	3	10%	Maritime Industry	1	6%
City	2	7%	Agriculture Industry	1	6%
Supply Chain	2	7%	Supply Chain	1	6%
Aviation Industry	1	3%	Total	18	100%
Ittic Industry	1	3%			
Tourism Industry	1	3%			
Total	29	100%			

Source: Author elaboration

Industry 4.0 seems to lead to well-being both in the industrial sector in general (i.e. Reiman et al., 2021; Cierniak-Emerych and Golej, 2020) and in companies about production (i.e. Alves et al., 2024; Lind et al., 2023) and related processes (Blandino et al., 2023), even in specific areas e.g. tourism (Gani et al., 2023). It also supports well-being in society in general as well as in specific areas (e.g. cities and education) (Abulibdeh et al., 2024).

Industry 5.0 on the other hand seems to give a boost to well-being starting from the enterprise, not only in production (i.e. Narkhede et al., 2024) but in the redefinition of business organisation (Galvan-Vela et al., 2021; Vijayakumar and Sobhani, 2023), especially as a result of the new technologies introduced (see Table 4 and related commentary). Here too, specific sectors emerge where the authors highlight the contribution to well-being (i.e. agriculture) and a general impact on society (Ferreira et al., 2022; Žižek et al., 2021). This initial analysis shows how welfare creation is associated with the two revolutions in both general and specific areas, suggesting different beneficiaries and different meanings of this.

The second level of analysis allows a detailed approach to well-being by trying to investigate its characteristics, i.e. how it is concretely expressed and what output it yields in the areas that emerged previously.

Table 3 shows how the prosperity created by the Industrial Revolution is interpreted and where it resides.

Table 3 - Industry 4.0 and 5.0 well-being output results

Output - Industry 4.0 and well-being	n.	%	Output - industry 5.0 and well-being	n.	%
Working conditions	19	65%	Working conditions	10	56%
Living conditions	4	14%	Environmental and social issues	4	22%
Environmental and social issues	6	21%	Living conditions	4	22%
Total	29	100%	Total	18	100%

Source: Author elaboration

In the case of Industry 4.0, its application has led to well-being which can be interpreted as a substantial improvement in working conditions. In this case, the considerations emerge from the companies and the advantages of the innovations of the fourth revolution brought to workers. The first aspect that emerges is the consideration of well-being as a reduction of work stress (Apraiz et al., 2023; Blandino, 2023; Dobrowolska et al., 2022). Industry 4.0 seems to have created the conditions for an effective improvement of the working environment, entrusting repetitive and thoughtful tasks to machines, contributing to enhancing system efficiency while at the same time implementing worker well-being (Slama et al., 2023). Koropets and Tukhtarova (2021) state how this improvement is also strengthened by an increase in jobs linked to innovation. This well-being is also qualified as mental (Cierniak-Emerych and Golej, 2020) and psychological (Alessio et al., 2019) and is generally linked to the sphere of the worker's health in particular of the ageing workforce (Alves et al., 2024). Kolot et al. (2020) talk about the social quality conveyed by Industry 4.0 as the ability to increase well-being and clarify one's potential, therefore also contributing to the growth of workers' awareness of their abilities and skills (Reiman et al., 2021). From an organizational point of view, Industry 4.0, together for example with Lean Manufacturing, jointly influences the concepts of Job Enlargement and Job Enrichment, creating the basis for greater efficiency and worker satisfaction (Cimini et al., 2023).

As regards Industry 5.0, also in this case the well-being created primarily reaches workers and the working environment. This aspect is certainly strengthened by the underlying logic of Industry 5.0, the centrality of man, from which a true human-centred workplace design philosophy derives (Ashta et al., 2023). Attention is focused not only on practical working conditions but emotional aspects also come into play, "emotional intelligence" for example, which is

considered a true soft skill (Chin et al., 2021). The well-being of the worker is certainly driven by the numerous and interactive new technologies (i.e. Cobots) that allow us to work alongside humans, support them but not replace or demote them (Nourmohammadi et al., 2022).

In equal measure, between the two revolutions, well-being emerges as an improvement in living conditions. This is often associated with the strong interactivity and involvement of the innovations introduced, capable of improving the Indoor environment (Broday et al., 2023) of the daily life of each individual, even going into detail about certain categories such as students (Rochin Demong et al., 2023).

Finally, environmental and social issues are the other results in which the well-being created by the two revolutions is expressed to an almost comparable extent. For instance, well-being is understood as strengthening food security, improving the performance of electricity infrastructure, enabling citizen involvement and participatory adaptation as well as reducing the impact of climate risks (Balogun et al., 2020).

The last level of analysis allowed us to focus attention on the specific enabling technologies of Industry 4.0 and the emerging ones of Industry 5.0 which are considered by the authors as supporters of the creation of well-being.

Table 4 shows the technologies that emerged from the analysis of the two revolutions. Not in all papers is there a specific technology to which the creation of prosperity can be linked, in some cases the reference is only general to the industrial revolution examined.

Table 4 - Industry 4.0 and 5.0 technologies involved in well-being

Technologies I4.0 involved in well-being	n.	%	Technologies I5.0	n.	%
Artificial Intelligence (AI)	3	20%	Automated Guided Vehicles (Agvs)	1	13%
Cyber-physical systems (CPS)	2	13%	Cobots	1	13%
Internet of Things (IoT)	2	13%	Exoskeletons	1	13%
Smart manufacturing	2	13%	Pick and Transport Robot (PTR)	1	13%
Blockchain	1	7%	Big Data	1	13%
Lean manufacturing	1	7%	Augmented Reality (AR)	1	13%
Machine Learning (ML)	1	7%	Internet of Things (IoT)	1	13%
Motion capture (MOCAP)	1	7%	Others	1	13%
Virtual Reality (VR)	1	7%	Total	8	100%
Smart Tourism Technologies (Stts)	1	7%			
Total	15	100%			

Source: Author elaboration

In the case of Industry 4.0, a technology that is in some cases associated with well-being is AI. AI is associated both with worker well-being and as a support for environmental and social issues (Murugesan et al., 2023; Abulibdeh et al., 2024). IoT as well as CPS, thanks to their sharing and interoperability capabilities, also allow substantial improvements in terms of safety, risk prevention and ergonomics (Velasco et al., 2022).

In the case of Industry 5.0, although we are still in the initial phase of studying this revolution, technologies oriented towards collaboration between man and machine are already emerging. For example, Cobots, are collaborative robots, which can improve the productivity and well-being of workers by determining the optimal allocation of tasks and available resources (Nourmohammadi et al., 2022) and at the same time monitor the working conditions and the state of mind of the worker to issue alerts and prevent problems (Storm et al., 2022). Automated guided vehicles (AGVs) can also facilitate collaboration between man and machine, bringing man to the centre of the system and improving performance and employee well-being (Thylén et al., 2023). Thanks to these tools and others (i.e. exoskeletons) it is possible to create a personalization of the working environment, improving workforce well-being and capabilities (Ashta et al., 2023).

It is clear from the analysis of the results that both Industry 4.0 and Industry 5.0 have contributed and are continuing to fuel the well-being creation process at various levels, both for companies and for society at large. The well-being highlighted by the authors is concretely linked to the sphere of the worker, but not only. Indeed, we have a propagation of the effects of the Industrial Revolution under consideration to citizens, students and cities as a whole. The scope of innovations and their beneficial impact is strongly linked to companies and their production processes in the Industry 4.0 paradigm, and, starting from the workers it spreads to the society at large with the Industry 5.0 model. Although the latter revolution is just getting underway and being studied, the contributions of some new enabling technologies to the overall well-being of business, workers and society are already clear. The transition from Industry 4.0 to Industry 5.0 seems to have this focus on human beings as a guiding thread, which is much more pronounced in the new 5.0 scenario and reinforced by the clear statement of sustainability as the cornerstone. Therefore, well-being is confirmed as an aspect linked to the two revolutions and driving the transition to Industry 5.0. Well-being is not always stated but implied and strongly connected with innovation and technology. Statically analysing the results that have emerged from the two revolutions, both seem to have as a more or less explicit objective the creation of wealth. In a dynamic vision, however, Industry 5.0 will, in our opinion, have to go more and more into the details of the components and determinants of well-being with a view from the particular to the specific and vice versa, trying to monitor needs and prevent needs. The switch of the logic is determined; society passes from the adoption of technology to improve production efficiency to the adoption of technology to multiply the perceived well-being inside and outside the companies.

With these transitional dynamics, the new Industry 5.0 scenario can aspire to be seen as an evolutionary step towards the '6.0 Wellbeing Society' (Žižek et al., 2021), where people will be able to define the parameters of their quality of life and achieve them thanks to innovation and increasingly widespread enabling technologies.

Research limitations. The limitations of this extended abstract should be considered and evaluated. From the point of view of methodology, the choice of keywords can be considered a limit. Indeed, the selection of words, while limiting the analysis to the specific issue, may not take into account the synonyms used by some authors (e.g. Fourth Industrial Revolution) and thus limit the analysis. In addition, findings emerge in this research that link Industrial Revolutions to well-being always in a positive sense. An extension of the research could consider the negative and/or controversial aspects of innovations to create a comprehensive view of the phenomenon. Moreover, the research work is, at this stage, merely conceptual and therefore lacks empirical validation of some of the considerations that emerged.

Managerial implications. This study endeavours to offer a theoretical contribution by methodically reviewing and critiquing the literature on well-being throughout the First and Second Industrial Revolutions, scrutinizing its distinctive features and exploring the influence of technological advancements on fostering well-being. From a management perspective, the analysis seeks to stimulate contemplation among corporations, institutions, and, on a broader scale, policymakers, regarding how these industrial transformations and the ongoing shift are contributing to well-being enhancement. A detailed examination of the intersections between Industry 4.0 and 5.0 with well-being reveals the innovation potential and its capacity to augment the systems' effectiveness and efficiency.

More explicit knowledge of the expected output of innovation can drive investment choices in equipment, company reorganisation or human resources and skills. Moreover, although what emerges from the literature is not very detailed, knowing the role of individual enabling technologies in supporting well-being and understanding their transition between the two revolutions could address managerial choices as well as institutions in creating supports and incentives for the adoption of such tools to achieve widespread well-being, from the workplace to society as a whole. I5.0 could lead to new managerial practices that should consider technology as a useful tool for freeing up workers' time and transforming work activity into an additional opportunity for building the social life of individuals. At the same time, new business strategies and market relations could arise where competition should be generated on the ability to create well-being in companies and society.

Like every innovation, I5.0 and further evolutions present some emerging limitations. First people involved directly or indirectly are continuously producing data useful for main internet and high-tech companies and, consequently, they can concentrate their power on markets and societies. Secondly, people may be increasingly connected to technologies and may increase their dependence on the internet and machines, further limiting their ability to appreciate well-being outside of these contexts.

Originality of the paper. The extended abstract deals separately and comparatively with the issue of well-being in the two Industrial Revolutions. The originality lies in the attempt to provide a holistic and evolutionary view of the concept of well-being creation in the two moments and frameworks that coexist today, Industry 4.0 and Industry 5.0. At the same time hypothesizing development trends in this transition phase.

References

- ABATECOLA G., MANDARELLI G., POGGESI S. (2013), "The personality factor: how top management teams make decisions. A literature review", *Journal of Management & Governance*, vol. 17, n. 10, pp.1073-1100.
- ABULIBDEH A., ZAIDAN E., ABULIBDEH R. (2024), "Navigating the confluence of artificial intelligence and education for sustainable development in the era of industry 4.0: Challenges, opportunities, and ethical dimensions", *Journal of Cleaner Production*, n. 140527.
- ALESSIO F., FINSTAD G.L., GIORGI G., LULLI L.G., TRAVERSINI V., LECCA L.I. (2019), "Intrapreneurial self-capital. An overview of an emergent construct in organizational behaviour", *Calitatea*, vol. 20, n. 173, pp. 156-162.
- ALVES J., LIMA T.M., GASPAR P.D. (2024), "The sociodemographic challenge in human-centred production systems-a systematic literature review", *Theoretical issues in ergonomics science*, vol. 25, n. 1, pp. 44-66.
- APRAIZ A., LASA G., MONTAGNA F., BLANDINO G., TRIVIÑO-TONATO E., DACALNIETO A. (2023), "An Experimental Protocol for Human Stress Investigation in Manufacturing Contexts: Its Application in the NO-STRESS Project", *Systems*, vol. 11, n. 9, pp. 448-459.
- ASHTA G., FINCO S., BATTINI D., PERSONA A. (2023), "Passive Exoskeletons to Enhance Workforce Sustainability: Literature Review and Future Research Agenda", *Sustainability*, vol. 15, n. 9, pp. 7339.
- BALOGUN A.L., MARKS D., SHARMA R., SHEKHAR H., BALMES C., MAHENG D., SALEHI P. (2020), "Assessing the potentials of digitalization as a tool for climate change adaptation and sustainable development in urban centres", *Sustainable Cities and Society*, vol. 53, n. 101888.
- BLANDINO G. (2023), "How to Measure Stress in Smart and Intelligent Manufacturing Systems: A Systematic Review", *Systems*, vol. 11, n. (4), pp. 167-177.
- BONINSEGNI M.F., ROY A., BAKPAYEV M., KUMAR S., PERONARD J.P., REIMER T. (2022), "Opportunities of and threats to consumer well-being in the age of Fourth Industrial Revolution (IR 4.0) technologies", *Digital Policy, Regulation and Governance*, vol. 24, n. 1, pp. 93-105.
- BREQUE M., DE NUL L., PETRIDIS A. (2021), *Industry 5.0: towards a sustainable, human-centric and resilient European industry*. Luxembourg, LU: European Commission, Directorate-General for Research and Innovation.

- BRODAY E.E., GAMEIRO DA SILVA M.C. (2023), "The role of Internet of things (IoT) in the assessment and communication of indoor environmental quality (IEQ) in buildings: a review", *Smart and Sustainable Built Environment*, vol. 12, n. 3, pp. 584-606.
- CIERNIAK-EMERYCH A., GOLEJ R. (2020), *Changes in safety of Working Conditions as a Result of Introducing 5S Practices*. IBIMA
- CIMINI C., LAGORIO A., GAIARDELLI P. (2023), "The evolution of operators' role in production: how Lean Manufacturing and Industry 4.0 affect Job Enlargement and Job Enrichment", *International Journal of Production Research*, vol. 61, n. 24, pp. 8493-8511.
- CHIN S.T.S. (2021), "Influence of emotional intelligence on the workforce for industry 5.0", *Journal of Human Resources Management Research*, vol. 2021, n. 2021, 882278.
- DENYER D., TRANFIELD D. (2009), *Producing a systematic review*. In: Buchanan, Bryman (Ed.), *The Sage Handbook of Organization Research Methods*. Sage Publications Ltd, Cornwall, pp. 671-689.
- DOBROWOLSKA M., ŚLAZYK-SOBOL M., FLAKUS M., DEJA A. (2020), "Climate and ties in workplace versus sense of danger and stress, based on empirical research in the aviation industry", *Sustainability*, vol. 12, n. 13, pp. 5302-5320.
- FERREIRA A.C.D.A., TITOTTO S.L.M.C., AKKARI A.C.S. (2022), "Urban agriculture 5.0: An exploratory approach to the food system in a super smart society", *International Journal of Mathematical, Engineering and Management Sciences*, vol. 7, n. 4, pp. 455-472.
- FLETCHER G. (2016), *The Routledge handbook of philosophy of well-being*. New York: Routledge.
- GALVAN-VELA E., RAVINA-RIPOLL R., TOBAR-PESANTEZ L.B. (2021), "A structural equations model of job disengagement from the constructs of organisational justice, job satisfaction, innovation and trust in the era of industry 5.0", *Journal of Legal Ethical & Regulation Issues*, vol. 24, n. 1, pp. 10-25.
- GANI M.O., ROY H., FAROQUE A.R., RAHMAN M.S., MUNAWARA M. (2023), "Smart tourism technologies for the psychological well-being of tourists: a Bangladesh perspective", *Journal of Hospitality and Tourism Insights*, vol. ahead-of-print No. ahead-of-print.
- HALBREICH U. (2022), "Well-being: Diversified perspectives in search of operational definitions", *International Journal of Social Psychiatry*, vol. 68, n. 4, pp. 705-707.
- HANEFAH M. M. (2018), Economic Growth, Nation Building and Societal Wellbeing: Impact of R&D and Industrial Revolutions. In *1st International Conference on Intellectuals' Global Responsibility (ICIGR 2017)*, pp. 338-344. Atlantis Press.
- KADIR B.A., BROBERG O. (2020). Human well-being and system performance in the transition to industry 4.0. *International Journal of Industrial Ergonomics*, 76, 102936.
- KOC T.C., TEKER S. (2019), "Industrial Revolutions and its effects on quality of life", *PressAcademia Procedia*, vol. 9, n. 1, pp. 304-311.
- KOLOT A., KOZMENKO S., HERASYMENKO O., ŠTREIMIKIENĖ D. (2020), "Development of a decent work institute as a social quality imperative: Lessons for Ukraine", *Economics & Sociology*, vol. 13, n. 2, pp. 70-85.
- KOROPETS O.A., TUKHTAROVA E.K. (2021), "The impact of advanced industry 4.0 technologies on unemployment in Russian regions", *Ekonomika Regiona= Economy of Regions*, vol. 1, n. 182.
- LENG J., SHA W., WANG B., ZHENG P., ZHUANG C., LIU Q., WANG L. (2022), "Industry 5.0: Prospect and retrospect", *Journal of Manufacturing Systems*, vol. 65, pp. 279-295.
- LIND A., ELANGO V., HANSON L., HÖGBERG D., LÄMKULL D., MÅRTENSSON P., SYBERFELDT A. (2023), "Virtual-Simulation-Based Multi-Objective Optimization of an Assembly Station in a Battery Production Factory", *Systems*, vol. 11, n. 8, pp. 395- 360.
- MAYRING P. (2004), "Forum: qualitative social research sozialforschung 2. History of content analysis", *Companion Quality Research*, vol. 1, n. 1, pp. 159-176.
- MERLI R., PREZIOSI M., ACAMPORA A., LUCCHETTI M.C., PETRUCCI E. (2020), "Recycled fibers in reinforced concrete: a systematic literature review", *Journal of Cleaner Production*, vol. 248, n. 119207.
- MURUGESAN U., SUBRAMANIAN P., SRIVASTAVA S., DWIVEDI A. (2023), "A study of artificial intelligence impacts on human resource digitalization in industry 4.0", *Decision Analytics Journal*, n. 100249.
- NARKHEDE G.B., PASI B.N., RAJHANS N., KULKARNI A. (2024), "Industry 5.0 and sustainable manufacturing: a systematic literature review", *Benchmarking: An International Journal*, ol. ahead-of-print No. ahead-of-print.
- NAHAVANDI S. (2019), "Industry 5.0-A human-centric solution", *Sustainability*, vol. 11, n. 16, pp. 1-29.
- NEWBERT S.L. (2007), "Empirical research on the resource-based view of the firm: an assessment and suggestions for future research", *Strategic Management Journal*, vol. 28, n. 2, pp. 121-146.
- NOURMOHAMMADI A., FATHI M., NG A.H. (2022), "Balancing and scheduling assembly lines with human-robot collaboration tasks", *Computers & Operations Research*, vol. 140, n. 105674.
- ORBEN A., PRZYBYLSKI A.K. (2019), "The association between adolescent well-being and digital technology use", *Nature human behaviour*, vol. 3, n. 2, pp. 173-182.
- REIMAN A., KAIVO-OJA J., PARVIAINEN E., TAKALA E.P., LAURAEUS T. (2021), "Human factors and ergonomics in manufacturing in the industry 4.0 context-A scoping review", *Technology in Society*, vol. 65, n. 101572.
- ROCHIN DEMONG N.A., SHAHROM M., ABDUL RAHIM R., OMAR E.N., YAHYA M. (2023), "Personalized Recommendation Classification Model of Students' Social Well-being Based on Personality Trait Determinants Using Machine Learning Algorithms", *Journal of Information and Communication Technology*, vol. 22, n. 4, pp. 545-585.
- SASSANELLI C., ROSA P., ROCCA R., TERZI S. (2019), "Circular economy performance assessment methods: a systematic literature review", *Journal of Cleaner Production*, vol. 229, pp. 440-453.
- SHARMA A., SINGH B.J. (2020), "Evolution of Industrial Revolutions: A review", *International Journal of Innovative Technology and Exploring Engineering*, vol. 9, n. 11, pp. 66-73.
- SLAMA R., SLAMA I., TLAHIG H., SLANGEN P., BEN-AMMAR O. (2023), "An overview on human-centred technologies, measurements and optimisation in assembly systems", *International Journal of Production Research*, vol. 1, n. 2023, pp. 1-23.
- STORM F. A., CHIAPPINI M., DEI C., PIAZZA C., ANDRÉ E., REIBNER N., RENI G. (2022), "Physical and mental well-being of cobot workers: A scoping review using the Software-Hardware-Environment-Liveware-Liveware-Organization model", *Human Factors and Ergonomics in Manufacturing & Service Industries*, vol. 32, n. 5, pp. 419-435.

- THYLÉN N., WÄNSTRÖM C., HANSON R. (2023), "Challenges in introducing automated guided vehicles in a production facility- interactions between human, technology, and organisation", *International Journal of Production Research*, vol. 61, n. 22, pp. 7809-7829.
- VELASCO L.S.F., REVILLA P.E.R., RODRÍGUEZ L.V.R., SANTA HINCAPIÉ M.P., SAAVEDRA-ROBINSON L.A., JIMÉNEZ J.F. (2022), "A human-centred workstation in industry 4.0 for balancing the industrial productivity and human well-being", *International Journal of Industrial Ergonomics*, vol. 91, 103355.
- VIJAYAKUMAR V., SOBHANI A. (2023), "Performance optimisation of pick and transport robot in a picker to parts order picking system: a human-centric approach", *International Journal of Production Research*, vol. 61, n. 22, pp. 7791-7808.
- XU M., DAVID J.M., KIM S.H. (2018), "The fourth industrial revolution: Opportunities and challenges", *International journal of financial research*, vol. 9, n. 2, pp. 90-95.
- XU X., LU Y., VOGEL-HEUSER B., WANG L. (2021), "Industry 4.0 and Industry 5.0-Inception, conception and perception", *Journal of manufacturing systems*, vol. 61, n.1, pp. 530-535.
- ŽIŽEK S.Š., MULEJ M., POTONIK A. (2021), "The sustainable socially responsible society: Well-being society 6.0", *Sustainability*, vol. 13, n. 16, pp. 1-29.
- ZIZIC M.C., MLADINEO M., GJELDUM N., CELENT L. (2022), "From industry 4.0 towards industry 5.0: A review and analysis of paradigm shift for the people, organization and technology", *Energies*, vol. 1, n. 14.

Employee well-being in the era of hybrid work: In search of sustainability for organizational members

ALFONSA BUTERA¹ ALESSANDRA MAZZEI² SILVIA RAVAZZANI³

Abstract

Employee well-being is a multidimensional concept that companies globally are increasingly taking into consideration in their search for a sustainable business. Addressing the issues related to employee well-being has become more complex because of the rise of remote working, which today is permanently adopted by a large number of companies through hybrid work models.

The purpose of this study is to explore how Italian companies address the issues related to employee well-being, which practices they implement to sustain it, and if and how they perceive and face the challenges that remote working creates for employee well-being through specific interventions.

The empirical study is based on the accounts of managers from 10 Italian companies. Qualitative data were collected from 10 interviews carried out between July and October 2023.

Findings show that Italian managers have a multifaceted understanding of employee well-being, with a focus on physical and psychological well-being, and are aware of the influence of management style, which is linked to a workplace dimension of well-being, on the overall level of well-being. Companies in the sample implement a broad spectrum of initiatives and practices, mainly devoted at addressing physical, psychological, and life well-being, where the latter relates to work-life balance and family happiness. Regarding the challenges that remote working creates for employee well-being, companies appear to be only partially active in addressing them.

While the study is at its preliminary stage and the number of companies involved does not allow to make any generalizations, these evidence-based insights can be a solid base for designing a more comprehensive study.

The findings of this study suggest managers to look at employee well-being in a multifaceted way: they should take care of the workplace, physical, psychological, life, and social components of employee well-being by implementing specific practices devoted to sustaining each of them. Moreover, managers should pay specific attention to addressing the risks for employee well-being introduced by remote working: professional and social isolation, as well as blurring boundaries between work-life and private life when working from home.

While it explores Italian companies' approach to employee well-being, this study offers insights regarding the initiatives and practices that organizations are implementing to mitigate the negative effects of remote working on employee well-being in the post-pandemic era, when hybrid work models are becoming permanently adopted.

Key words: *employee well-being; employee health; remote working; hybrid work models; well-being practices; sustainable workplaces.*

Framing of the research. *Employee well-being is a multifaceted concept that has been studied from several perspectives. From an organizational perspective, Zheng et al. (2015) distinguished three dimensions of employee well-being: workplace well-being, life well-being, and psychological well-being. Workplace well-being includes work-related elements, such as compensation and benefits, labor protection, logistics service, management style, and work arrangements. Life well-being and psychological well-being refer to dimensions related to work-life balance, family happiness, emotional health, personal growth, and environment mastery. This means that managers should not only focus on employees' job satisfaction but also show genuine concern for employees' life well-being and psychological well-being when addressing this topic overall.*

Similarly, from a management perspective, Grant et al. (2007) notice that employee well-being cannot simply be viewed as job satisfaction or the overall quality of an employee's experience and functioning in the workplace. In their

¹ IULM University
e-mail: alfonsa.butera@iulm.it

² IULM University
e-mail: alessandra.mazzei@iulm.it

³ IULM University
e-mail: silvia.ravazzani@iulm.it

vision, it encompasses three components: psychological, referring to subjective experience and functioning; physical, referring to bodily health and functioning; social, referring to relational experience and functioning.

In the management stream of studies, differently Danna and Griffin (1999) distinguish well-being and health. Well-being comprises life and non-work satisfaction enjoyed by individuals (i.e. satisfaction with social life, family life, recreation, spirituality) together with work and job-related satisfaction (i.e. satisfaction with pay, promotion opportunities, the job itself, co-workers), while general health refers both to mental or psychological health and physical health within a more medical context (e.g. reported symptomology or diagnosis of illness or disease). Therefore they suggest that the term health should be applied to organizational contexts when specific physiological or psychological indicators are of interest, while well-being should be used as appropriate to include context-free measures of life experience (e.g. life satisfaction) and generalized job-related experiences, such as job satisfaction or job attachment, as well as more facet-specific dimensions, such as satisfaction with pay or co-workers.

In sum, literature proposes different models and constructs of well-being: while the psychological and physical components are typically included, other dimensions vary. Some authors put the accent on elements more related to the organizational context and to life well-being, others underline the role of social well-being experienced in the relational realm of the organization. Finally, some authors propose to differentiate employee well-being from employee health when mental or psychological health and physical health are concerned within a more medical context.

In recent years, the Covid-19 pandemic made organizations and society at large re-discover the importance of well-being and underlined the relevance of mental health and the social component of employee well-being, in a moment when the recourse to remote working suddenly increased in numerous organizations.

With reference to Italy, several studies were conducted to investigate the effects of remote working on employee well-being and productivity during the pandemic (e.g., Biasi et al., 2022; Molino et al., 2020; Spagnoli et al., 2020; Toscano et al., 2020). Biasi et al. (2022) showed that in the first phase of Covid-19 pandemic employees involved in the study reported perceptions of higher productivity while remotely working, even if results show that, for the period under investigation, remote working did not affect productivity. Their study also showed that remote working had consequences on personal well-being that differed among genders, with especially women struggling to reconcile between professional and personal needs. Spagnoli et al. (2020) focused on two counter-effects of remote working experienced by employees during the pandemic, namely: workaholism, the tendency to work excessively hard and to be obsessed with work; and technostress, the stress experienced by end users in organizations as a result of their intensive use of ICTs. Their study underlined the moderating role of leadership on such risks for remote employees. Similarly, Molino et al. (2020) confirmed the negative effects of technostress on employee well-being during the pandemic, and alerted about the “always on” working practice encouraged by remote working, which challenges employees in terms of mental and physical fatigue. Toscano et al. (2020) showed instead the deleterious role of social isolation for employee stress.

Regarding the consolidation of hybrid work contexts after the pandemic, Mazzei et al. (2023a) underlined the risk of a deterioration in the relational realm of the workplace. In a second study specifically focused on newcomers, Mazzei et al. (2023b) alerted that workplace social isolation due to remote working can reduce the efficacy of the onboarding process for new employees.

In other national contexts, with reference to Australian employees, Franken et al. (2021) explored the challenges associated with working remotely and resources for well-being and productivity. Most employees involved in the study expressed their feelings of happiness and satisfaction while working flexibly from home, but a number of them reported feeling overwhelmed and stressed about the heightened and competing demands, as well as isolated, both personally and professionally. Professional isolation caused a diminished sense of trust in co-workers and managers to accomplish their job responsibilities. Other stressors emerged concerning childcare responsibilities and managing the distraction of partners.

Ambivalent results regarding the effects of remote working on employee well-being and productivity emerged also from the meta-analyses conducted by Charalampous et al. (2019) and Ferrara et al. (2022). On the one hand, the study conducted by Charalampous et al. (2019) highlights that, while there is a general positive effect of remote working on employees' emotions, job satisfaction, organizational commitment levels, and autonomy, there is also a risk of social and professional isolation and perceived threats to professional advancement. On the other hand, the study conducted by Ferrara et al. (2022) reported that remote workers show higher positive affective well-being and higher happiness especially when they are highly resilient, but mixed results emerge on the role of teleworking on work-life balance. These results show that the perceived well-being levels when working remotely are influenced by the ability to manage the boundaries between work-life and private life. The authors of both these studies suggest that this heterogeneity can be influenced by the employees' characteristics as well as the organizational context and culture's characteristics.

Considering the increasing diffusion of hybrid work models, Hopkins and Bardoel (2023) proposed five pillars for successful hybrid work following a qualitative study on HR managers in Australia. These five pillars refer to operations, culture, communication, well-being, future skills, and technology. With specific reference to well-being, Hopkins and Bardoel recalled the relevance of dealing with mental health and well-being when remote workers are concerned. First of all, this implies an effort by managers to regularly check the well-being of their team members. Organizations can also implement specific initiatives to sustain psychological, physical, and social well-being: for instance, mental health aid specifically focused on dealing with remote working issues, initiatives to ensure remote employees have ergonomically compliant home office setups, training virtual exercise classes or challenges (e.g., daily step count), virtual team lunches and coffee breaks, online quizzes, book clubs, and movie nights.

Purpose of the paper. Well-being is becoming an increasingly important topic on the agenda of companies worldwide due to the greater sensitivity that people pay to this aspect in relation to their job after the pandemic, when employees especially experienced new or exacerbated mental health issues. Moreover, the hybrid working models that companies today are largely adopting generate new challenges for employee well-being due to remote working. Therefore, the purpose of this study is to explore how Italian companies address the issues related to employee well-being today. First, it investigates what Italian companies mean for employee well-being. Second, it explores the practices they implement to sustain the well-being of their employees. Third, with reference to the spread of hybrid work models, this study also examines if and how Italian companies perceive the challenges that remote working creates for employee well-being and how they possibly face these challenges through specific interventions.

Methodology. This exploratory study (Yin, 1994) was guided by three research questions: 1) How do Italian companies address the issues related to employee well-being? 2) What practices do they implement to sustain it? 3) Do they recognize the challenges that remote working poses to employee well-being and tackle them through specific interventions?

Considering its exploratory nature, researchers opted to conduct the empirical study leveraging the accounts of managers from 10 Italian companies. Qualitative data were collected from 10 interviews carried out between July and October 2023, either face-to-face or online, through a semi-structured interview guide with open-ended questions. Interviews lasted about 2 hours each. The convenience sample of the 10 interviewees, one for each company in the sample, was built leveraging the relationship networks of researchers and included board members and managers responsible for employee well-being, sustainability, HR management, and internal communication. Companies were selected to build a diversified sample in terms of company size and sector. Special attention was given to the fact that companies had adopted a hybrid way of working, with employees working both remotely and at the company's sites.

Within the company sample, 8 companies out of 10 are multinational organizations, and 6 out of 10 have Italian origins. They operate in multiple industries, with 4 manufacturing companies and 6 service companies. Regarding company size, 6 are large organizations with more than 5,000 employees, 3 are medium-sized organizations with up to 3,000 employees, and 1 is a small organization with about 200 employees. To answer the research questions, researchers conducted a thematic analysis of the data without the support of any software: emergent data were parsed to find recurrent themes, concepts, and dimensions.

Results. Considering the first research question, which is the meaning that Italian companies attribute to employee well-being, most interviewees include two dimensions in their definition of employee well-being. The first dimension is related to nutrition, physical movement, and sport: this recalls the physical dimension of well-being (Grant et al., 2007) and health (Danna & Griffin, 1999). The second dimension recalled is the psychological one (Grant et al., 2007; Zheng et al., 2015). Moreover, all companies involved in the study recognize the role of management style, which can be intended as part of workplace well-being (Zheng et al., 2015) and as the most impacting factor on the overall level of employee well-being. According to all interviewees, management style comes before any specific initiative or practice implemented to improve employee well-being: in the words of one interviewee, "We must be aware that people's well-being is not just the prerogative of those who have the organizational label for this topic. Company leaders must first and foremost transmit this culture".

One interviewee broadens the definition of employee well-being also to other components that are related to the workplace context, specifically linking the state of well-being to the simplification of work processes, methodologies, and tools. The question of well-being then becomes related to the facilitation of work within the organization and to what produces value in everyday life for people: "If I have a salesman who spends 70% of his time on administrative activities that are not his responsibility, I can also give him a meal voucher a day, but he is at risk of leaving the company because he will look for his professional life elsewhere, where he can express himself best".

With specific reference to the psychological dimension of well-being (Grant et al., 2007; Zheng et al., 2015), some interviewees emphasize the relevance of self-expression: well-being is generated by a set of material (e.g., a process) and immaterial (e.g., organizational culture) elements that allow people to flourish in a eudemonic way. In this sense, employees cannot experience a state of authentic well-being if they do not live in an environment that allows them to express their potential: as one interviewee states, organizations should foster "everything that allows people to flourish, the possibility for people to find in their work a means to express the best of themselves".

Some interviewees understand the provision of employee well-being in general terms as the result of the relationship between people and the organization. For instance, an interviewee recalls: "It's the way our people experience their relationship with the company, this is our common thread. We are committed to promoting and maintaining the physical, mental, professional, and socioeconomic well-being of our people. We do it through the correct circulation of information, trust, flexibility, collaboration, and motivation, which for us are fundamental elements so that people feel part of the company and share its values".

Lastly, some interviewees underline the flexibility of the concept: no one well-being model fits all employees. People's needs are very different, so well-being management implies actively listening to needs and having a portfolio of options to meet people's diverse needs, while respecting the company's objectives.

Considering the second research question of this study, that is what practices Italian companies implement to sustain the well-being of their employees, the data collected allows to depict a composite and heterogeneous framework of initiatives.

With reference to the workplace dimension of employee well-being, some companies recall the transparent communication of organizational decisions and processes such as evaluation and career development, as well as profit sharing with employees. In one case, a dimension of justice in terms of compensation is also highlighted as an example of organizational intervention with a strong impact on commitment and well-being.

In many cases, companies implement initiatives that seem to overlap the area of welfare and are addressed at the life dimension of employee well-being (Zheng et al., 2015) as well as at employees' physical well-being (Grant et al., 2007) and health (Danna & Griffin, 1999): for instance, supplementary pensions and integrative health care insurances. This highlights that for the companies in the sample the boundaries between welfare and well-being are blurred. This is not surprising: welfare services can support people's well-being in its physical and psychological dimensions. From a conceptual point of view, therefore, the well-being concept seems to include welfare, which in general refers to services that benefit people in moments of their lives other than working time.

Among the most appreciated and cited welfare services, there are those oriented towards healthcare prevention and care. It seems that companies end up making up for the critical issues of the public healthcare system: as one interviewee explains, "Among the most important welfare services, started in the 1960s, we have an internal clinic with 15 specialists who visit employees every day and with waiting times of 2/3 weeks. It was and still is among the most popular services offered to our employees. The area of health-related services in general is now back in vogue, it is among the most appreciated also due to the public health crisis".

Among the practices recalled in terms of welfare services, scholastic orientation is also mentioned. This kind of service seems to address the psychological well-being of employees in terms of personal growth (Grant et al., 2007; Zheng et al., 2015).

With specific reference to the psychological dimension of employee well-being, some companies mention remote counseling services, in the case of multinational companies provided through platforms that offer the same service on a global scale but in local languages. In certain circumstances, to address individual cases of psychological discomfort, personalized interventions are performed, aimed at supporting the single person even if the specific need requires a derogation or exception to organizational policies: this approach is represented as an expression of the "culture of personal care".

Focusing on the physical dimension of well-being (Grant et al., 2007), some companies recall the pandemic experience, which necessarily proposed a virtual version of experiences previously carried out in person and opened the way to various types of online services, for instance those dedicated to fitness. In this sense, today companies give employees the possibility of joining virtual gyms through platforms that offer various types of exercises and forms of training, and in their most recent versions integrate also a social dimension proposing games and challenges between employees. Other practices aimed at taking care of the physical dimension of employee well-being include physiotherapy services offered by the company, with a package of free sessions and others accessible at a discounted price, and initiatives aimed at ensuring greater food quality in company canteens.

Interviewees also mentioned various initiatives that could be linked to the general dimension of life well-being, sustaining the general work-life balance and family happiness (Zheng et al., 2015): gifts for births and birthdays, shopping lockers at the office, laundry services, electric charging stations, groups for solidarity purchases.

Some initiatives are focused on two precious resources for employees: time and space. Initiatives linked to better use of time include services for medical visit booking, programs dedicated to parents that offer more time for maternity and paternity in addition to what is already guaranteed by law, more time for people receiving life-saving therapies, and the possibility of exchanging vacation hours between colleagues to help those in need. Regarding space, particular attention is paid to the physical place where the work is typically carried out: the offices. Care for the strictly aesthetic dimension of offices is accompanied by attention to lighting, the choice of colors and the quality of paints, air exchange, and the choice and positioning of plants. Offices should be beautiful to make people come there willingly: to the extent that people can choose where to work due to hybrid work models, the office enters into direct competition with people's homes as a place of work and life. The care due to office spaces is important also because they become the setting for numerous occasions for informal meetings, socialization, and entertainment for employees and management; moreover, bottom-up initiatives are stimulated by setting up informal and welcoming spaces, such as areas for parties and the meetings of employee communities. This seems to address the dimension of social well-being (Grant et al., 2007).

Considering the third research question of this study, that is if and how Italian companies perceive the challenges that remote working creates for employee well-being and how they possibly face these challenges through specific interventions, interviewees appear to be only partially active in addressing them.

Hybrid working is now considered a fact: although each company has adopted different rules or guidelines, remote working is not considered something exceptional but a permanent condition of current work models. For this reason, remote working impacts companies' efforts for the planning and implementation of well-being initiatives in terms of guaranteeing equal access to these initiatives for employees both when working from home and from the office.

Actions explicitly oriented towards the well-being of those who work from home are mainly related to home workstations: coherently with data collected by Hopkins and Bardoel in their qualitative study on Australian managers (2023), also in Italy there is an effort to guarantee that remote workers are well-equipped with monitors, ergonomic chairs and desks, well-functioning Internet connections.

Considering the risk of professional and personal isolation in case of prolonged remote working (Charalampous et al., 2019; Franken et al., 2021; Mazzei et al., 2023a), Italian companies included in this study show to be partially aware of it. Interviewees recognize that well-being is also a product of the interaction with co-workers, so the excessive recourse

to remote working could have a negative impact. To avoid the risk of isolation for individuals and favor organizational integration, companies organize regular meetings in the office for all employees: for example in one company, “We organize a town hall meeting every two months to let them experience the company, trying to tell them things that may be of interest. We create institutional moments of socialization to maintain an open dialogue”. Anyway, other specific practices aimed at reducing the risk of professional and personal isolation of remote workers have not been mentioned, for instance mental health aid or coaching initiatives specifically dealing with remote working issues.

It must be added that a specific concern related to the risk of professional and personal isolation due to remote working has been raised by interviewees regarding newcomers (Mazzei et al., 2023b): interviewees recognize that the intensive use of remote working makes the onboarding process more difficult especially if newcomers are young, because the transmission of corporate values and culture in general can be undermined if the social contact with managers and co-workers is reduced. Therefore in the onboarding period, remote working should be used with caution.

Similarly, considering the risks of workaholism and of not being able to manage the boundaries between work-life and private life when at home (Biasi et al., 2022; Ferrara et al., 2022; Molino et al., 2020; Spagnoli et al., 2020), some companies recall that they are trying to define some shared rules that allow people to create, and help each other respect, a borderline between work time and personal time: for instance, through the rule “You don’t write to or reply to anyone on the weekend”. No other specific initiative aimed at increasing people’s ability to sustain their work-life balance when at home has been recalled, for instance coaching initiatives proposed to employees with such objectives.

All that said, companies feel anyway the need to assess in a focused way the state of well-being of employees when remote working is in place. Again, consistent with the study conducted by Hopkins and Bardoel (2023), this study confirms that some companies adopt specific tools to monitor employee well-being that help people managers to regularly collect data related to their team members working remotely. Starting from the share of information related to the projects in which employees are involved, these tools allow managers not only to have visibility on the progress of the activities but also to get to know how their employees feel and “how they are doing”. Based on these reports, people managers regulate the dialogue with team members to assess the state of their well-being.

Research limitations. The presented study is at its preliminary stage. The number of companies involved does not allow to make any generalizations regarding the results. Anyway, the data collected through this first exploration can be a base for designing a more comprehensive quantitative study, to investigate more thoroughly and extensively the well-being initiatives and practices implemented by Italian companies, and to obtain a clearer view of how they are dealing with the possible counter-effects of remote working for the well-being of their employees in an era when hybrid work models are becoming permanently adopted.

Managerial implications. The findings of this study underline the importance for managers to look at employee well-being in a multifaceted way. Employee well-being must not be simply reduced to job satisfaction. Of course, it comprises a workplace dimension related to work-related elements such as compensation and benefits or management style: results of this study showed in particular that management style is, according to interviewed managers, the most relevant factor to foster employee well-being among all dedicated managerial initiatives. Other dimensions of employee well-being should then be considered to approach it holistically: in fact, managers should take care of the physical, psychological, life, and social components of employee well-being, implementing practices devoted to sustaining them specifically. The experience of Italian companies included in this study shows a very broad variety of initiatives and practices to deal with these various well-being dimensions. Sometimes these practices overlap with the area of company welfare, especially when services related to employee health and physical well-being are concerned. Finally, this study alerts managers regarding the need to address the challenges that remote working creates for employee well-being. While companies included in this study are rightly concerned about the accessibility of well-being initiatives for employees working from home and/or from the office, specific initiatives for remote workers cannot be limited to sustaining their physical and workplace well-being when working remotely, for instance making them well-equipped in terms of workstation, tools and connections. As literature suggests (Ferrara et al., 2022; Hopkins & Bardoel, 2023; Mazzei, 2023b), companies should pay specific attention to addressing the risks of professional and social isolation, which affect the dimension of social well-being, and the possible difficulties faced by employees to manage the boundaries between work-life and private life when at home. This sensitiveness implies also an increase in the expectations addressed to managers themselves, who in turn are employees and therefore feel needs for their own well-being: an issue that organizations should be aware of.

Originality of the paper. This study explores how Italian managers understand the multifaceted concept of employee well-being and offers insights regarding the initiatives and practices implemented today in Italy to sustain it in its multiple dimensions. Moreover, it explores how Italian companies are dealing today with the challenges that remote working creates for employees. While numerous studies investigated the effects of remote working on employee well-being and productivity during the pandemic, this study contributes to filling the gap of knowledge related to what organizations are implementing to mitigate the negative effects of remote working on employee well-being in the post-pandemic era, when hybrid work models are becoming permanently adopted.

References

- BIASI P., CHECCHI D., DE PAOLA M. (2022), “Remote working during COVID-19 outbreak: workers’ well-being and productivity”, *Politica Economica*, n. 1, pp. 3-40.

- CHARALAMPOUS M., GRANT C.A., TRAMONTANO C., MICHAELIDIS E. (2019), "Systematically reviewing remote e-workers' well-being at work: a multidimensional approach, *European Journal of Work and Organizational Psychology*, vol. 28, n. 1, pp. 51-73.
- DANNA K., GRIFFIN R.W. (1999), "Health and well-being in the workplace: A review and synthesis of the literature", *Journal of Management*, vol. 25, n. 3, pp. 357-384.
- FERRARA B., PANSINI M., DE VINCENZI C., BUONOMO I., BENEVEVE P. (2022), "Investigating the role of remote working on employees' performance and well-being: An evidence-based systematic review", *International Journal of Environmental Research and Public Health*, vol. 19, n. 12373.
- FRANKEN E., BENTLEY T., SHAFAEI A., FARR-WHARTON B., ONNIS L.A., OMARI M. (2021), "Forced flexibility and remote working: Opportunities and challenges in the new normal", *Journal of Management & Organization*, vol. 27, pp. 1131-1149.
- GRANT A.M., CHRISTIANSON M.K., PRICE R.H. (2007), "Happiness, health, or relationships? Managerial practices and employee well-being tradeoffs", *Academy of Management Perspectives*, vol. 21, n. 3, pp. 51-63.
- HOPKINS J., BARDOEL A. (2023), "The future is hybrid: How organisations are designing and supporting sustainable hybrid work models in post-pandemic Australia", *Sustainability*, vol. 15, n. 3086.
- MAZZEI A., QUARATINO L., BUTERA A., CONTI S. (2023a), "Rethinking the way of working: in search of sustainable engagement", in McCown N., Men L.R., Jiang H., Shen H. (Eds.), *Internal Communications and Employee Engagement: A Case Study Approach*, Routledge, London, UK.
- MAZZEI A., RAVAZZANI S., BUTERA A., CONTI C., FISICHELLA C. (2023b), "Affective commitment of newcomers in hybrid work contexts: A study on enhancing and inhibiting factors and the mediating role of newcomer adjustment", *Frontiers in Psychology*.
- MOLINO M., INGUSCI E., SIGNORE F., MANUTI A., GIANCASPRO M.L., RUSSO V., ZITO M., CORTESE C.G. (2020), "Wellbeing costs of technology use during Covid-19 remote working: An investigation using the Italian translation of the technostress creators scale", *Sustainability*, vol. 12, n. 5911.
- SPAGNOLI P., MOLINO M., GIANCASPRO M.L., MANUTI A., GHISLIERI C. (2020), "Workaholism and technostress during the COVID-19 emergency: The crucial role of the leaders on remote working", *Frontiers of Psychology*, vol. 11, n. 620310.
- TOSCANO F., ZAPPALÀ S. (2020), "Social isolation and stress as predictors of productivity perception and remote work satisfaction during the Covid-19 pandemic: The role of concern about the virus in a moderated double mediation", *Sustainability*, vol. 12, n. 9804.
- YIN K.R. (1994), *Case Study Research: Design and Methods*, Sage, Thousand Oaks, CA.
- ZHENG X., ZHU W., ZHAO H., ZHANG C. (2015), "Employee well-being in organizations: Theoretical model, scale development, and cross-cultural validation", *Journal of Organizational Behavior*, vol. 36, n. 5, pp. 621-644.

Navigating Transformative Service Research for individual and social well-being: A comprehensive review

MUHAMMAD JUNAID SHAHID HASNI¹ MARIA DELLA LUCIA² ERICA SANTINI³

Abstract

This systematic literature review (SLR) explores Transformative Service Research (TSR) in the Business, Management, and Accounting domains. The primary objective is to discern pivotal factors associated with the conception, design, and execution of transformative services (TSs) to improve individual and social well-being. This research endeavour holds the promise of contributing substantially to enhancing service design principles and practices promoting well-being at different levels and in different domains. Based on a search query string with rigorous inclusion and exclusion criteria, the SLR identified a sample of 188 studies indexed in both Web of Science and Scopus databases. Through descriptive, bibliometric and (manual) content analyses, we depicted the current intellectual structure of the transformative service knowledge domain and the pivotal factor of TSR mainly resulting from healthcare service provision. The manual content analysis confirmed the current literature has addressed significant components and well-being outcomes identified in the TS founding framework, mainly across health services and financial services in urban environments. Tourism and hospitality are emerging and promising TSR fields and heritage, culture and creativity are poorly investigated. Preliminary results indicate that TSR is yet to be fully developed in specific domains and ecosystems, and more research is warranted to shed light on the dynamic realm of transformative services and their contribution outside the traditional domain where TSR developed.

Key words: Transformative services, social value creation, well-being, sustainability, pivotal factors, gaps

Framing of the research. In the ever-evolving landscape of business and technology, services dominate the value creation processes of our economy and how the needs of our society are satisfied. In this realm, Transformative Service Research (TSR) represents a branch of study within the broader discipline of service research focusing on well-being outcomes related to service (Davis & Pechmann, 2013). TSR has been defined as “the integration of consumer and service research that centres on creating uplifting changes and improvements in the well-being of consumer entities: individuals (consumers and employees), communities and the ecosystem” (Anderson et al., 2011, p. 3). In this literature, well-being encompasses eudaimonic and hedonic dimensions. The former underscores the actualization of one's potential, a concept in line with Sen's notion of quality of life as the advancement of human capabilities and freedoms (Sen, 1999). Hedonic well-being revolves around the notion of pleasure and happiness, as posited by Diener and Lucas (1999).

Going beyond the centrality of services in the economic exchange, TSR emphasises the “social dimension of value creation” (Blocker & Barrios, 2015, p. 265) within a service ecosystem that interconnects actors at macro, meso and micro levels (Alexander et al., 2018; Rosenbaum et al., 2011). The founding framework proposed by Anderson et al. (2015) conceptualises collective value creation in TSR as a multilevel and multi-stakeholder process identifying the interactions between the service entities (i.e., service employees, service processes, offerings, organisations, and sectors) and the consumer entities - from individuals to collectives and ecosystems - shaping the well-being outcomes for both parties, individually and socially. Compared to aspects and metrics commonly used in service research, the framework emphasises mutual well-being outcomes particularly relevant or innovative in the context of TSR. It focuses on different aspects of eudaimonic well-being including improved dignity and respect, literacy, empowerment, autonomous decision-making, individual and collective health, reduced access, health and well-being disparities, consumer engagement, harmony, and social networks. The framework also relies on subjective components of hedonic well-being encompassing individuals' and people's positive everyday affective state, emotional health and self-esteem such as happiness, satisfaction, and joy (Diener & Lucas, 1999), or their absence such as tension, fear, strain, and stress.

Social value creation by TSR and the multifaceted dimensions of eudaimonic and hedonic well-being associated with TSs intersect significantly with sustainability and the Sustainable Development Goals (SDGs), presenting a comprehensive agenda for fostering a more prosperous, equitable, and resilient future for all, ensuring inclusivity in the journey towards sustainable societies globally and the advancement of human well-being. Consequently, policies and

¹ University of Trento
e-mail: muhammad.hasni@unitn.it

² University of Trento
e-mail: maria.dellalucia@unitn.it

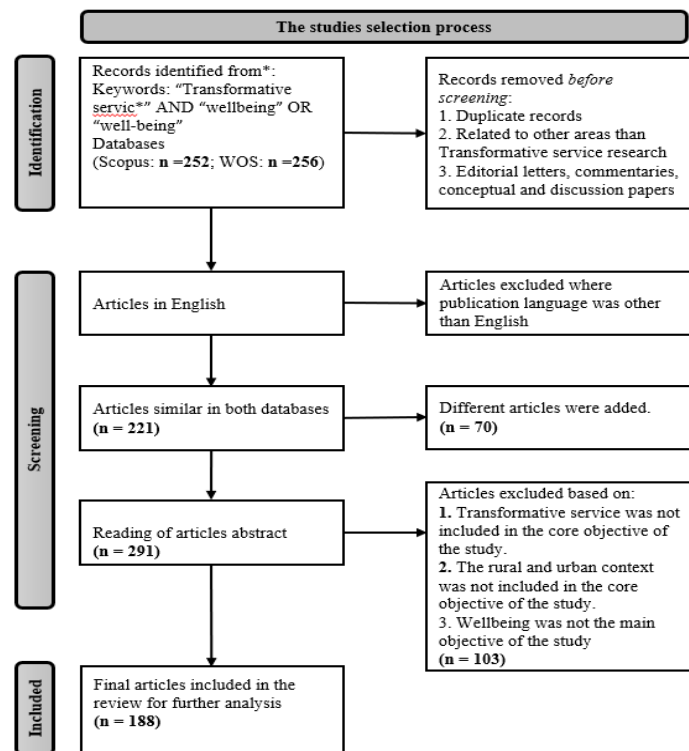
³ University of Trento
e-mail: erica.santini@unitn.it

strategies focused on well-being increasingly play a pivotal role in facilitating sustainable transitions and stand to gain from dissecting the impacts of TSs across various levels, sectors, and ecosystems. Although the comprehensive scope of the TS framework, spans micro, meso, and macro levels of service provision and consumption, transformative services have primarily undergone examination at the micro-level, particularly within specific sectors like finance, healthcare, and social services (Galeone & Sebastiani, 2021). This concentration underscores untapped potential that warrants exploration and exploitation.

Purpose of the paper. This research aims to investigate the evolution of TSR and conducts an in-depth investigation into TSR seeking to elucidate pivotal factors pertinent to the conception, design and implementation of transformative services improving individual and social well-being. The principal argument posits that an intricate comprehension of TSs holds the potential to substantially contribute to refining service design principles and practices and extend them to domains and ecosystems that could benefit from TSs' pivotal factors, catalysing holistic transformation and healing.

Methodology. The complexity of TSs potentially spanning disparate streams of research literature requires a detailed and nuanced comprehension of antecedent research endeavours about TSR. Similar to prior scholars (such as Caputo et al., 2018; Goyal & Kumar, 2020; Landry & Furrer, 2023) our exploratory research design adopted a Systematic Literature Review based on Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Moher et al., 2009) to provide a thorough, unbiased, and replicable synthesis of relevant studies (Donthu et al., 2021; Diaz et al., 2022) ensuring a fine-grained and nuanced understanding of the prior TSR. SLR has been widely employed in service research to systematically identify, evaluate, and critically analyse extant literature (Tranfield et al., 2003; Mariani et al., 2018) on specific and emerging topics such as green purchase behaviour (Sharma et al., 2023) and metaverse (Ritterbusch & Teichmann, 2023), following well-established steps to ensure transparency and rigour in such SLR studies (Madanaguli et al., 2022) (Figure 1).

Figure 1: PRISMA Chart



Source: Authors' elaboration

Aiming to elucidate pivotal factors pertinent to the conception, design, and implementation of transformative services and emphasising their potential intersection with specific domains and ecosystems, the research papers were selected using Scopus and Web of Science (WoS) databases. According to Mongeon and Paul-Hus (2016), the consistent deployment of these databases in prior SLR studies attests to their established reliability and comprehensive coverage. In our investigation, the Boolean operator "AND" has been employed to establish a logical conjunction between the terms transformative, service and well-being, ensuring that only publications containing all three terms are retrieved within the domain of "title, abstract, and keywords" of the publications in the Business, Management, and Accounting domains. The asterisk (*) serves the purpose of accommodating variations in the keywords. Accordingly, the search string was "Transformative servic*" AND "Wellbeing*" OR "Well-being".

The evaluation of selected studies adhered to predefined criteria, encompassing (a) inclusion of research papers published in peer-reviewed journals addressing TSs, (b) accessibility of research papers through Scopus and Web of Science (WoS) up to November 2023, and (c) inclusion of research papers published exclusively in the English language. A total of 256 studies about TSs and well-being within diverse sectors were initially identified through WoS. Similarly,

252 studies were discovered on Scopus. Merging articles from both databases, Removing duplicates, and including distinct articles through snowball, the initial review phase included 291 studies. By refining the dataset further and reviewing the titles and abstracts, we excluded 103 entries on the grounds of incongruity with the defined scope of research and disparities in research type, encompassing editorial notes, commentary, conference papers, and book chapters.

Descriptive, bibliometric and content analyses through the Bibliometric R package (Aria & Cuccurullo, 2017) and manual content analysis were performed on the final sample, comprising 188 articles. The descriptive analysis explored publication trends, prominent journals, author contributions, and citation statistics. The bibliometric keyword co-occurrence analysis conducted using VOSviewer considered a threshold of at least five occurrences (Beliaeva et al., 2022; Pereira et al., 2022). The content examination through the word cloud showed how often words appeared in the sample (Poyoi et al., 2023) helping to highlight specific areas within research topics or domains based on centrality and density (Scarano et al., 2023). Based on Anderson et al. (2015)' founding framework, the manual content analysis yielded initial insights into the service and consumer entities that impact well-being, as discussed in the existing literature, and identified associated gaps.

Results.

Descriptive analysis. The publication trend over the last 14 years (from 2010 to 2023) years indicates that studies on TSR were first published in 2010 (Ostrom et al., 2010). Over time, the number of publications has notably increased since 2019, with 27 articles in each of the past five years (2019 to 2023). Furthermore, TSR studies have been disseminated across various journals. The Journal of Services Marketing has emerged as the leading outlet, with 70 research articles, followed by the Journal of Service Management (25 articles), the Journal of Service Research (24 articles), and the Service Industries Journal (21 articles). Most studies were published by authors (Corresponding authors) from the USA (75 publications), Australia (40), New Zealand (17), United Kingdom (15), and Malaysia (12). American and European countries have gained the top spots in the list of most cited countries. The United States of America stands at the top of the list with 4,441 times cited, and Australia is in the 2nd spot with 1418 times cited. Similarly, Finland (675 times), New Zealand (474 times), and the Netherlands (260 times) have secured the 3rd, 4th, and 5th rank in the list.

Co-occurrence analysis. Six distinct clusters (Figure 2), comprising 116 keywords (out of a total of 1,299) and encompassing 2,492 links reflecting a density of 16.77%, show a relatively dispersed network - the average number of links per keyword (centrality) stood at 21.48. Notably, certain keywords exhibit a higher number of links, particularly transformative service research (114 links), well-being (109), value co-creation (84), dominant logic (81), quality of life (65), service research (63), innovation (59), social support (58), health services (52), and service ecosystem (42). The remaining 12,364 links (comprising 71.26% of the network's total links) demonstrated a link strength lower than 10, with nearly 50% falling below 0.9. The most robust linkages were observed between transformative service research and well-being (65 links), followed by transformative service research and health (22 links), dominant logic and well-being (20 links), value co-creation and well-being (16 links), transformative service research and well-being (15 links), and transformative service research and quality (12 links). These associations are reflected in the keyword clusters: each cluster is identified by a colour and comprises one anchor keyword and associated main keywords, emphasising a specific discourse around TSs (Table 1).

Cluster 1 (Red)'s main theme revolves around the multifaceted aspects of service experience satisfaction affecting people's well-being (Mulcahy, et al., 2021). The cluster recommends analysing customer satisfaction as a crucial factor for evaluating the quality of service experiences, as the latter is crucial to affecting people's general health and quality of life. In addition, it involves exploring the wider effects of service contacts to understand how satisfaction levels and experiences contribute to the overall impact on people's lives. Cluster 2 (Green) focuses on the Health TS Ecosystem, a prominent TS domain. The keyword "dominant logic" clearly suggests a marketing perspective discourse emphasising the centrality of services in the economic exchange process (Danaher et al., 2024). This perspective suggests the interaction between innovation and resource integration to improve the development and sustainability of the health service ecosystem.

Cluster 3 (Navy Blue) is prominent in terms of occurring keywords and linkages and revolves around transformative service research and holistic well-being in people's and communities' lives (Zhang et al., 2023). Within this collective effort, TSR investigates cutting-edge factors for providing TSs. Engagement is a crucial factor focusing on how customer service design may actively include consumers and promote a sense of connection and participation. Happiness emerges as a crucial factor when gauging the emotional and well-being impacts of engaging people in transformative services. Knowledge acquisition is another prominent factor, emphasising how transformative service research helps to produce learning and insights to advance both individual and societal progress

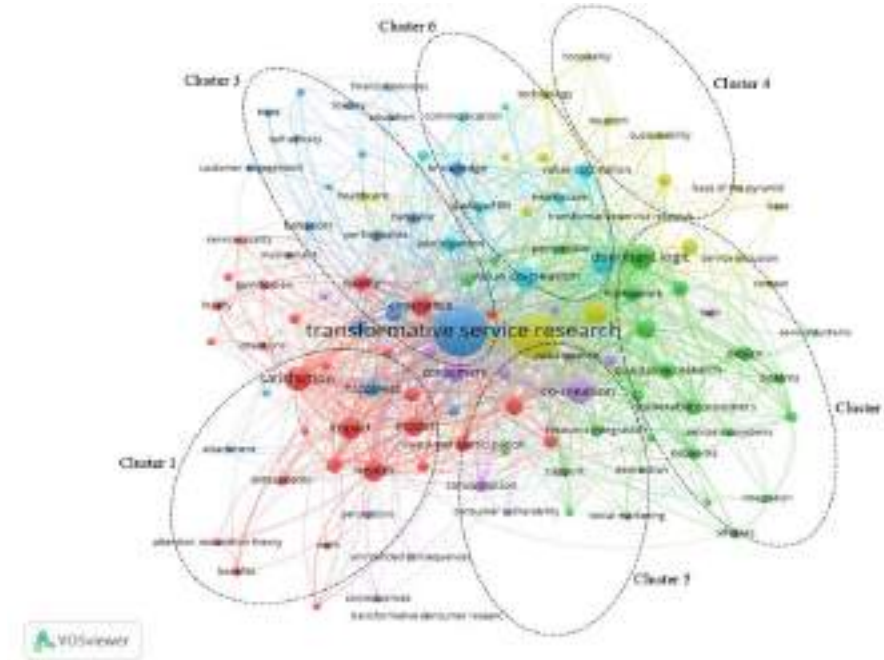
Cluster 4 (Yellow) echoes an emerging discourse in TRS revolving around the service design agenda in tourism for improving societal well-being (Kabadayi et al., 2023). Within a general discussion of how deliberate and careful service design agenda and principles enhance people's and society's well-being, the tourism lens emphasises the potential effects of travel and leisure activities on the well-being of individuals and communities when properly designed.

Cluster 5 (Purple) emphasises the co-creation of transformative services for vulnerable consumers, thus echoing diversity and inclusion issues in different environments. Collaborative processes involving consumers with special needs

are key to co-creating experiences with transformative value and encompass the improvements in empowerment and well-being arising from collaborative interactions (Rejikumar et al., 2022).

Finally, Cluster 6 (Light Blue) blends Clusters 2 and 5 discourses, focusing on value co-creation in the healthcare ecosystem (Shukla et al., 2023). It emphasises how healthcare services are interactive. Accordingly, key factors in providing highly valued healthcare services entail effective communication and active engagement of patients and healthcare professionals in cooperative processes.

Figure 2. Clusters of co-occurrence keywords



Source: Authors' own work

Table 1: Thematic clusters features

Cluster	Cluster's theme	Representative anchor and main keywords	Occurrence	Links	Total link strength (tls)
Cluster 1 (Red)	Service Experience satisfaction and Quality of life	Satisfaction (Anchor word), Experience, Impact, Quality of life, Service quality	37 25 31 20 19	81 82 80 65 66	251 196 186 152 147
Cluster 2 (Green)	TS Health Ecosystem	Dominant logic (Anchor word), Innovation, Resource integration, Health services, Service ecosystem	37 17 11 12 10	81 59 54 52 42	305 119 106 95 87
Cluster 3 (Navy Blue)	Transformative Service Research and holistic well-being	Transformative service research (Anchor word), Engagement, Service research, Happiness, Knowledge	131 17 19 19 17	114 58 63 59 60	794 139 109 120 100
Cluster 4 (Yellow)	Transformative service design agenda and Tourism	Well-being (Anchor word), Research priorities, Agenda, Service design, Tourism	102 33 18 12 08	109 81 56 46 28	683 229 94 82 47
Cluster 5 (Purple)	Co-creation of transformative services for vulnerable consumers	Co-creation (Anchor word), Consumers, Consumption, Transformative value, Vulnerability	36 26 13 10 11	90 80 47 55 39	291 182 84 86 66
Cluster 6 (Light blue)	Value co-creation in the healthcare ecosystem.	Value co-creation (Anchor word), Health-care, Participation, Coproduction, Communication	32 31 16 10 09	84 83 61 42 38	252 238 132 71 57

Content analysis. The word cloud has shown to be consistent with the thematic clusters of co-occurring keywords. The fifteen keywords that make up 60% of total word frequencies include anchor words such as TSR ($n = 52$, 6%), satisfaction ($n = 44$, 5%), dominant logic ($n = 39$, 4%), impact ($n = 39$, 4%), research priorities ($n = 36$, 4%), and health care ($n = 35$, 4%). The high centrality and density of these themes indicate that they are well-developed and prominent in shaping the transformative service research domain.

The manual content analysis confirmed the current literature has addressed significant components and well-being outcomes identified in the TS founding framework. The main investigated sectors are health services, with the greatest number of papers, financial services, and social services. In relation to the micro, meso, and macro levels, consumer entities are examined at the ecosystem level in retail and food, at the collective level focusing on groups like families, friends, and coworkers, and individual level (Previte & Robertson, 2019). Value co-creation is the process interconnecting both entities investigated the most (Gardiazabal & Bianchi, 2021). Well-being encompasses social outcomes (Rosenbaum et al., 2021) such as preparedness and social cohesion (Cheung et al., 2017) and individual outcomes such as consumer micro-transformations (Gopaldas et al., 2022).

Tourism and hospitality (Gallan et al., 2021; Feng et al., 2023; Galeone & Sebastiani, 2021) are emerging and promising fields in which TSR has been connected to sustainability and sustainable tourism. Gallan et al. (2021) have proposed a novel concept of Transformative Hospitality Services (THS) and viewed hospitality as a potential for holistic well-being transformation. Galeone & Sebastiani (2021) looked at how sustainable hospitality firms enhance well-being in the tourism sector at collective and individual levels. Feng et al. (2023) investigated the impact of employee-customer interaction within hospitality. Heritage (Steriopoulos & Ooi, 2023), culture (Kabadayi et al., 2019), and creativity (Batat, 2021), which are the baseline of the cultural and creative industries and strongly interface with tourism, have been given little attention yet. Steriopoulos and Ooi (2023) focused on the “Melbourne Cup”, discussing how heritage events contribute to transformative experience through consumer transformation, heritage identity, heritage character, and heritage components. Kabadayi et al. (2019) focused on foundational values at the core of the service process, such as organisational culture, to maximise social innovation in service efforts and explained that culture and technology factors challenge the implementation of social innovation in service organisations. Batat (2021) found that creativity and innovativeness during crises are engines of motivation for employees to confront themselves and design a creative and specialised service experience.

Due to the sectors investigated by TSR, most studies are explicitly or implicitly framed in urban ecosystems where usually health, financial and social services cluster. Rural areas are environments missing in the current strand of literature that could benefit from TSR as customers in rural areas have been shown to be more vulnerable than those in urban areas (Ho & Shirahada, 2021). Rural customers engage with service providers more emotionally due to the firm’s relationship marketing and its impact on consumer emotional well-being, and compared to urban customers, they are less knowledgeable about services, offerings, procedures, and employees’ work habits (Huang & Lin, 2020).

Research limitations. The most frequent keywords appearing in the sample (such as value co-creation, dominant logic, and health care) suggest that the SLR could be refined by considering combinations of these keywords. In addition, the search could be extended beyond the Business, Management, and Accounting domains and to additional databases like EBSCOhost and Google Scholar. Data mining and topic modelling could also be used to compare and complement bibliometric and manual content analysis. This comprehensive approach would provide a large dataset beneficial for leveraging the latest data analysis software, which can help reduce human bias in interpreting literature insights.

Managerial implications. The TSR’s pivotal factors and research gaps resulting from the SLR ground and direct forthcoming research undertakings towards domains and ecosystems that deserve and need additional scrutiny, thus contributing to the continued evolution of this dynamic realm. Due to their interactive nature, heritage, culture, creativity, and tourism and hospitality are specific forms of soft services that have been widely recognised to have a positive impact on individual and social well-being through personal development, business innovation and place-making and regeneration. In addition, their spatial agglomeration both in urban and rural areas offers the opportunity to leverage the potential of TS design to improve the quality of life in these ecosystems and address socio-economic and environmental issues through place regeneration initiatives aimed at improving individual and social well-being.

Originality of the paper. TSR offers an innovative perspective to look at service as the fundamental basis of socio-economic interactions and value creation that contribute to well-being and sustainability. Although the concept of value creation in TSR has been recognized for over a decade as a multilevel and multi-stakeholder process, scholarly attention has predominantly been directed towards micro-level analyses. Moreover, this attention has been largely confined to specific sectors where the topic has seen significant development. This study not only identified the research gap and potential of TSR, such as emerging fields where TSR naturally encompasses multiple dimensions, particularly tourism and cultural and creative industries. It also validated the seminal TSR framework’s key components and examined the strategic factors used to design and execute TSs that can be extended and adapted across domains and ecosystems where there is a paucity of TS studies. A deeper understanding of the complexities of designing and executing TSs may also help to address cultural diversity, such as the organisational culture, and technological landscape, such as digital transformation.

References

- ALEXANDER M.J., JAAKKOLA E., HOLLEBEEK L.D. (2018), "Zooming out: actor engagement beyond the dyadic", *Journal of Service Management*, vol. 29, n. 3, pp. 333-351.
- ANDERSON L., OSTROM A.L., BITNER M.J. (2011), *Surrounded by services: A new lens for examining the influence of services as social structures on well-being*, Working paper.: W. P. Carey School of Business, Arizona State University.
- ANDERSON L., OSTRO A.L. (2015), "Transformative service research: advancing our knowledge about service and well-being", *Journal of Service Research*, vol. 18, n. 3, pp. 243-249.
- ARIA M., CUCCURULLO C. (2017), "Bibliometrix: An R-tool for comprehensive science mapping analysis", *Journal of Informetrics*, vol. 11, n. 4, pp. 959-975.
- BATAT W. (2021), "How Michelin-starred chefs are being transformed into social bricoleurs? An online qualitative study of luxury foodservice during the pandemic crisis", *Journal of Service Management*, vol. 32, n. 1, pp. 87-99.
- BELIAEVA T., FERASSO M., KRAUS S., MAHTO R.V. (2022), "Marketing and family firms: Theoretical roots, research trajectories, and themes", *Journal of Business Research*, vol. 144, pp. 66-79.
- BLOCKER C.P., BARRIOS A. (2015), "The transformative value of a service experience", *Journal of Service Research*, vol. 18, n. 3, pp. 265-283.
- CAPUTO A., MARZI G., PELLEGRINI M.M., RIALTI R. (2018), "Conflict management in family businesses: A bibliometric analysis and systematic literature review", *International Journal of Conflict Management*, vol. 29, n. 4, pp. 519-542.
- DANAHER T.S., DANAHER P.J., SWEENEY J.C., MCCOLL-KENNEDY J.R. (2024), "Dynamic customer value cocreation in healthcare", *Journal of Service Research*, vol. 27, n. 2, pp. 177-193.
- DAVIS B., PECHAMANN C. (2013). Introduction to the Special Issue on transformative consumer research: Developing theory to mobilize efforts that improve consumer and societal well-being. *Journal of Business Research*, vol. 66, n. 8, pp. 1168-1170.
- DIAZ E., ESTEBAN Á., CARRANZA VALLEJO R., MARTIN-CONSUEGRA NAVARRO D. (2022), "Digital tools and smart technologies in marketing: a thematic evolution", *International Marketing Review*, vol. 39, n. 5, pp. 1122-1150.
- DIENER E., LUCAS R.E. (1999). Personality and subjective well-being. In D. Kahneman, E. Diener, & N. Schwartz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 213-229). New York: Russell Sage Foundation.
- DONTHU N., KUMAR S., MUKHERJEE D., PANDEY N., LIM W.M. (2021), "How to conduct a bibliometric analysis: An overview and guidelines", *Journal of Business Research*, vol. 133, pp. 285-296.
- FENG K., ALTINAY L., ALRAWADIEH Z. (2023), "Social connectedness and well-being of elderly customers: Do employee-to-customer interactions matter?", *Journal of Hospitality Marketing & Management*, vol. 32, n. 2, pp. 174-195.
- GALEONE A., SEBASTIANI R. (2021), "Transformative service research in hospitality", *Tourism Management*, vol. 87, 104366.
- GALLAN A.S., KABADAYI S., ALI, F., HELKKULA A., WU L., ZHANG Y. (2021), "Transformative hospitality services: A conceptualization and development of organizational dimensions", *Journal of Business Research*, vol. 134, pp. 171-183.
- GARDIAZABAL P., BIANCHI C. (2021), "Value co-creation activities in retail ecosystems: well-being consequences", *Journal of Services Marketing*, vol. 35, n. 8, pp. 1028-1044.
- GOPALDAS A., SIEBERT A., ERTIMUR B. (2022), "Designing servicescapes for transformative service conversations: lessons from mental health services", *Journal of Consumer Marketing*, vol. 39, n. 6, pp. 649-659.
- GOYAL K., KUMAR S. (2021), "Financial literacy: A systematic review and bibliometric analysis", *International Journal of Consumer Studies*, vol. 45, n. 1, pp. 80-105.
- HO B.Q., SHIRAHADA K. (2021), "Actor transformation in service: a process model for vulnerable consumers", *Journal of Service Theory and Practice*, vol. 31, n. 4, pp. 534-562.
- HUANG C.H., LIN Y.C. (2020), "Relationships among employee acting, customer-perceived service quality, emotional well-being and value co-creation: an investigation of the financial services industry", *Asia Pacific Journal of Marketing and Logistics*, vol. 33, n. 1, pp. 29-52.
- KABADAYI S., ALKIRE L., BROAD G.M., LIVNE-TARANDACH R., WASIELESKI D., PUENTE A.M. (2019), "Humanistic management of social innovation in service (SIS): An interdisciplinary framework", *Humanistic Management Journal*, vol. 4, pp. 159-185.
- KABADAYI S., LIVNE-TARANDACH R., PIRSON M. (2023), "A dignity-vulnerability approach framework to maximize well-being outcomes by transformative service initiatives (TSIs)", *Journal of Services Marketing*, vol. 37, n. 9, pp. 1151-1166.
- LANDRY M., FURRER O. (2023), "Well-being co-creation in service ecosystems: a systematic literature review", *Journal of Services Marketing*, vol. 37, n. 7, pp. 862-882.
- MADANAGULI A., KAUR P., MAZZOLENI A., DHIR A. (2022), "The innovation ecosystem in rural tourism and hospitality—a systematic review of innovation in rural tourism", *Journal of Knowledge Management*, vol. 26, n. 7, pp. 1732-1762.
- MARIANI M., BAGGIO R., FUCHS M., HÖEPKEN W. (2018), "Business intelligence and big data in hospitality and tourism: a systematic literature review", *International Journal of Contemporary Hospitality Management*, vol. 30, n. 12, pp. 3514-3554.
- MULCAHY R.F., ZAINUDDIN N., RUSSELL-BENNETT R. (2021), "Transformative value and the role of involvement in gamification and serious games for well-being", *Journal of Service Management*, vol. 32, n. 2, pp. 218-245.
- PEREIRA V., BAMEL U., PAUL H., VARMA A. (2022), "Personality and safety behavior: An analysis of worldwide research on road and traffic safety leading to organizational and policy implications", *Journal of Business Research*, vol. 151, pp. 185-196.
- POYOI P., GASSIOT-MELIAN A., COROMINA L. (2023), "Local food experiences before and after COVID-19: a sentiment analysis of EWOM", *Tourism and hospitality management*, vol. 29, n. 4, pp. 477-493.
- REJIKUMAR G., ASWATHY A.A., JOSE A., SONIA M. (2022), "A collaborative application of design thinking and Taguchi approach in restaurant service design for food wellbeing", *Journal of Service Theory and Practice*, vol. 32, n. 2, pp. 199-231.
- RITTERBUSCH G.D., TEICHMANN M.R. (2023), "Defining the metaverse: A systematic literature review", *Ieee Access*, vol. 11, pp. 12368-12377.
- ROSENBAUM M., CORUS C., OSTROM A., ANDERSON L., FISK R., GALLAN A., WILLIAMS J. (2011), "Conceptualisation and aspirations of transformative service research", *Journal of Research for Consumers*, n. 19, pp. 1-9.
- ROSENBAUM M.S., KIM K., RAMIREZ G.C., OREJUELA A.R., PARK J. (2021), "Improving well-being via adaptive reuse: transformative repurposed service organizations", *The Service Industries Journal*, vol. 41, n. 3-4, pp. 223-247.

- SCARANO A., ARIA M., MAURIELLO F., RICCARDI M.R., MONTELLA A. (2023), “Systematic literature review of 10 years of cyclist safety research”, *Accident Analysis & Prevention*, vol. 184, 106996.
- SEN A. (1999). *Development as freedom*. Oxford: Oxford University Press.
- SHARMA K., ASWAL C., PAUL J. (2023), “Factors affecting green purchase behavior: A systematic literature review”, *Business Strategy and the Environment*, vol. 32, n. 4, pp. 2078-2092.
- SHUKLA Y., SINGH R., DWIVEDI P., CHATTERJEE R. (2023), “Wellbeing implications of BoP marketing: a service ecosystem approach”, *Journal of Services Marketing*, vol. 37, n. 7, pp. 883-894.
- STERIOPOULOS E., OOI C.S. (2023), “Transformative service research approaches for visitor experiences in major sporting events”, *International Journal of Event and Festival Management*, vol. 14, n. 2, 189-204.
- TRANFIELD D., DENYER D., SMART P. (2003), “Towards a methodology for developing evidence-informed management knowledge using systematic review”, *British Journal of Management*, vol. 14, n. 3, pp. 207-222.
- ZHANG L., WEI W., YU H., SHARMA A., OLSON E.D. (2023), “Transformation of consumer expectations for well-being in hospitality: A systems framework”, *Journal of Hospitality & Tourism Research*, vol. 47, n. 4, pp. NP4-NP17.

Le App di food sharing tra benefici individuali e ambientali: ascolto delle conversazioni online degli utenti su Too Good To Go.

SILVIA BELLINI¹ CRISTINA ZERBINI² DONATA TANIA VERGURA³ BEATRICE CECCOLI⁴

Abstract

La perdita e lo spreco di cibo lungo la catena di approvvigionamento sono un problema mondiale, che comporta non solo perdite economiche significative ma anche ripercussioni negative sull'ambiente. La costante crescita del consumo di cibo e la conseguente produzione di rifiuti rendono necessario attuare azioni correttive ad ogni stadio della filiera al fine di frenare lo spreco alimentare. Tra queste, le tecnologie digitali, come le mobile app, possono rappresentare un valido strumento per sostenere le iniziative volte alla riduzione dei rifiuti.

Lo studio analizza il percepito dei consumatori rispetto alle app di food sharing come strumento per ridurre la quota di prodotti invenduti destinati allo smaltimento. Attraverso la metodologia del web listening, sono state analizzate le conversazioni online degli utenti con riferimento all'applicazione Too Good To Go con l'obiettivo di identificare i fattori di utilizzo della stessa e gli elementi di fiducia. I risultati emersi sui fattori edonistici e funzionali relativi alle motivazioni di utilizzo dell'applicazione offrono spunti utili alle imprese che intendono farsi parte attiva nella promozione di comportamenti sostenibili, sviluppando iniziative proprie oppure attivando collaborazioni con app consolidate come quella analizzata.

Key words: Too Good To Go; web listening; spreco alimentare; sostenibilità; applicazioni mobile.

Framing della ricerca. Con l'aumento della popolazione mondiale, la gestione dei rifiuti alimentari è emersa come una delle sfide principali del XXI secolo, a causa della prevista crescita del consumo di cibo e la conseguente produzione di rifiuti. Non solo, negli ultimi decenni, il tasso di crescita della produzione alimentare ha superato quello della popolazione globale (Holt-Giménez et al., 2012) con un ovvio risultato: la perdita e lo spreco di cibo lungo la catena di approvvigionamento. A livello mondiale, dal momento del post-raccolto all'arrivo nei punti di vendita, questa perdita è pari 14% del cibo prodotto, per un valore pari a 400 miliardi all'anno (FAO, 2019). A questo si aggiunge un ulteriore 17% che viene sprecato nelle fasi finali della filiera: punti vendita al dettaglio e consumatori finali (UNEP, Food Waste Index 2021). Nei Paesi dell'Unione Europea, la quantità di cibo sprecato ogni anno ammonta a quasi 59 milioni di tonnellate, pari a 131 kg di rifiuti per persona (Consilium Europa, 2023).

L'UE definisce gli sprechi alimentari come "food and inedible parts of food removed from the food supply chain to be recovered or disposed of (including -composted, crops ploughed in/not harvested, anaerobic digestion, bioenergy production, co-generation, incineration, disposal to sewer, landfill or discarded to sea)" (UE FUSIONS 2016).

Per frenare lo spreco alimentare è necessario attuare delle azioni correttive a ogni stadio della filiera, dalla produzione alla vendita dei prodotti finiti, passando per la trasformazione, lo stoccaggio, la manipolazione e il trasporto. Le Nazioni Unite mirano a dimezzare lo spreco alimentare nei punti vendita al dettaglio e presso i consumatori finali entro il 2030 (ONU, 2015), in linea con gli Obiettivi di Sviluppo Sostenibile (SDG 12.3). Anche nell'UE, sempre più orientata verso un'economia circolare, la riduzione degli sprechi alimentari è un obiettivo prioritario (CE, 2015). I Paesi dell'UE si sono impegnati a ridurre del 50% i rifiuti alimentari pro-capite, sia a livello di vendita al dettaglio che di consumo, entro il 2030, nonché a diminuire le perdite alimentari lungo l'intera filiera (CE, 2018). L'impatto di questo spreco ha anche ripercussioni a livello ambientale, oltre che economico, contribuendo alle emissioni di gas serra e alla riduzione dell'instabilità climatica (FAO, 2022).

L'economia circolare (EC) è un modello di produzione e consumo che permette di separare la crescita economica dalla pressione ambientale (Hofmann, 2019), promuovendo una prospettiva riduzionista legata al miglioramento delle

¹ Università di Parma
e-mail: silvia.bellini@unipr.it

² Università di Parma
e-mail: cristina.zerbini@unipr.it

³ Università di Parma
e-mail: donatatania.vergura@unipr.it

⁴ Università di Parma
e-mail: beatrice.ceccoli@unipr.it

pratiche di gestione dei rifiuti, sostenendo modelli di riciclo, recupero e riutilizzo dei beni (Ghisellini et al., 2016). Si tratta, quindi, di un modello la cui applicazione può contribuire alla riduzione degli sprechi alimentari, andando ad agire sulle abitudini e i comportamenti di consumatori e retailers (Morone et al., 2018). Numerose sono le iniziative proposte in tal senso, come le guide per la preparazione dei cibi (Kim et al., 2020) e sulle modalità di riciclo dei rifiuti (Lang et al., 2020) e le raccomandazioni sulle abitudini di stoccaggio domestico (van Holsteijn e Kemna, 2018). Le tecnologie digitali, come le mobile app, possono rappresentare un valido strumento per sostenere le iniziative volte alla riduzione dei rifiuti alimentari (Schanes et al., 2018; Vo-Thanh et al., 2021), spingendo i consumatori verso uno stile di vita più sostenibile. Tra queste, sono state sviluppate piattaforme per mettere in contatto i consumatori o le imprese locali per condividere le rimanenze di cibo (Zurek, 2016), applicazioni che propongono quotidianamente ricette per cucinare gli avanzi alimentari (Schanes et al., 2018), oppure per mettere in contatto consumatori con supermercati, bar, ristoranti, panetterie, pasticcerie per l'acquisto a prezzi ridotti di cibo avanzato a fine giornata (Apostolidis et al., 2021). Too Good To Go (TGTG) è una mobile app che rientra in quest'ultima fattispecie, una "anti-food waste mobile app" che "consente di salvare il cibo invenduto da un triste destino" (toogoodtogo.com). L'obiettivo di TGTG è quello di connettere i consumatori con piccole e grandi attività o aziende che altrimenti avrebbero prodotti invenduti destinati allo smaltimento. Un'applicazione di food sharing come questa, dove ciascun esercente può caricare i propri prodotti invenduti e ciascun consumatore può accedere alle offerte proposte, è una soluzione win-win-win perché costituisce un vantaggio sia per i consumatori, sia per gli esercenti sia per l'ambiente.

Vo-Thanh et al. (2021) hanno studiato, attraverso interviste semi-strutturate, la capacità dell'app TGTG di fungere da catalizzatore di un'iniziativa con finalità sociali e di sostenibilità. Gli autori hanno dimostrato i valori sociali, funzionali ed emotivi rappresentano i principali fattori di successo dell'app, grazie ai quali è possibile ridurre gli sprechi alimentari e i connessi danni sull'ambiente. A ciò si aggiunge il fine sociale di consentire a chiunque di accedere a cibo di qualità a prezzi accessibili. Anche Lewandowski (2023) ha dimostrato la capacità di TGTG di contribuire efficacemente alla riduzione degli sprechi alimentari. La caratteristica interessante di questa app è la sua prospettiva win-win-win poiché le ricadute sono positive per il consumatore, che riesce ad acquistare cibi di qualità a prezzo scontato, per i rivenditori, che vendono prodotti che altrimenti verrebbero buttati, per l'ambiente, grazie alla riduzione degli sprechi. Nonostante il rilevante successo di TGTG e la sua provata efficacia nel contribuire fattivamente alla sostenibilità ambientale e sociale, le ragioni che spingono i consumatori ad utilizzare l'applicazione e gli elementi di soddisfazione e insoddisfazione in seguito al suo utilizzo, non sono ancora state studiate. Individuare i fattori critici di successo di TGTG potrebbe fornire utili suggerimenti alle imprese che intendono contrastare lo spreco alimentare attraverso strumenti digitali, ma anche tradizionali, nella prospettiva di ampliare il target raggiungibile aumentando di conseguenza la portata dei benefici ottenibili in termini di sostenibilità.

Obiettivo. Il presente lavoro intende analizzare, attraverso la metodologia del web listening, il vissuto da parte degli utenti dell'app TGTG. In particolare, lo studio si è posto l'obiettivo di identificare i fattori che spingono all'utilizzo (o non utilizzo) dell'applicazione e gli elementi di fiducia/sfiducia verso la stessa. L'interesse verso TGTG si riconduce alla sua diffusa presenza nel mercato e al suo ruolo di app di riferimento per la riduzione del cibo invenduto. Si tratta della più grande piattaforma B2C contro lo spreco alimentare, che si colloca al settimo posto tra le applicazioni per il cibo e le bevande più scaricate al mondo. Lanciata nel 2016 e attiva in 17 Paesi tra 2 continenti (Europa e America), TGTG vanta una community composta da oltre 8 milioni di utenti registrati e più di 142.000 partner commerciali. Ad agosto 2023, l'azienda ha dichiarato di aver contribuito a salvare più di 250 milioni di pasti dal rischio di andare sprecati, l'equivalente di 625.000 tonnellate di CO2 evitate (Too Good To Go, 2023).

Metodologia. Il disegno di ricerca ha utilizzato un approccio metodologico mixed-methods che ha combinato l'analisi testuale quantitativa con quella qualitativa (Andreotta et al., 2019). L'analisi è stata effettuata tramite la Blogmeter Suite, una piattaforma di web e social intelligence che consente di raccogliere e analizzare il conversato degli utenti su social media e altre piattaforme del web (Facebook, Twitter, Instagram, YouTube, Tik Tok, Twitch, forum, blog, notizie e siti di recensioni di app), attingendo a un database di oltre 2 miliardi di documenti, raccolti sia dalle interfacce di programmazione delle applicazioni (API) ufficiali dei social network, sia dai crawler proprietari di Blogmeter. Sono stati analizzati tutti i testi tracciabili e leggibili che contenevano almeno una parola chiave tra quelle selezionate per l'analisi: "toogoodtogo", "2good2go", "too good to go", "tu good tu go", "two good two go", "too good tu go", #toogoodtogo. Il sottoinsieme complessivo dei dati estratti con queste query è stato ripulito manualmente per prendere in considerazione solo le occorrenze delle parole chiave che riguardavano i temi e l'app oggetto di analisi. Le metriche prese in considerazione per l'analisi quantitativa sono state: total messages, mentions, engagement e positive/negative sentiment. Il corpus è stato organizzato e suddiviso in lotti di keywords. Sono stati identificati i topic rilevanti per la ricerca – l'app TGTG e i topic sostenibilità/ambiente, fiducia/fedeltà, spreco alimentare, risparmio/costo – in base ai quali sono stati estratti sottoinsiemi di dati per un'analisi qualitativa più accurata.

Risultati. Una prima riflessione emerge osservando il cloud dei termini e degli hashtag impiegati dagli utenti per discutere dell'app (Figura 1).

Figura 1 – Cloud dei termini e degli hashtag relativi alla app



Fonte: nostra elaborazione

TGTG ha evidentemente una solida identità di marca e un posizionamento ben definito e identificabile senza difficoltà dagli utenti stessi: i termini associati con maggior frequenza e gli hashtag riconducono infatti al concetto di “spreco alimentare” in senso lato (spreco, sprechi, alimentare, lotta, ridurre, combattere) richiamando in maniera fedele la mission dell’azienda. Nel quadro complessivo di questo primo output, emerge un secondo tema che richiama il concetto di “risparmio” (prezzo, prezzi, risparmiare, euro) e che apre una riflessione, centrale ad avviso degli autori, in merito alla convivenza tra benefici collettivi (impatto positivo sull’ambiente e sulla società) e individuali (risparmio economico personale) nelle motivazioni all’utilizzo della app.

La reputazione positiva della app e la duplice natura dei driver di impiego risultano confermate dalla mappa dei sentimenti e dell'analisi delle opinioni. In primo luogo, TGTG ha un sentiment index molto elevato: il valore è pari a 61,27 e indica la percentuale di opinioni positive meno quella di opinioni negative (il numero è compreso in un intervallo tra 100, se tutti positivi e -100, se tutti negativi). In secondo luogo, se osserviamo la suddivisione tra positività, negatività e domande (Figura 2) emerge come TGTG abbia una reputazione positiva per l'80% delle conversazioni.

Figura 2 – Mappa delle opinioni



Fonte: nostra elaborazione

I punti di forza riconosciuti dagli utenti sono il risparmio sugli acquisti alimentari, la facilità d'uso, l'impatto positivo sullo spreco alimentare e la possibilità di scoprire nuovi prodotti e negozi. Da questi elementi si conferma quindi la convivenza di benefici individuali (risparmio) e collettivi (spreco), così come di elementi funzionali (facilità d'uso) ed esperienziali (scoperta). A supporto di questa riflessione, si riporta l'analisi delle caratteristiche sottolineate dagli influencer più "engaging" del periodo:

- L'influencer A menziona TGTG parlando del risparmio che riesce a ottenere tramite l'app, soprattutto in contesti dove il cibo è molto costoso, che a sua volta si collega al tema dello spreco alimentare.
- L'influencer B utilizza TGTG come pretesto per una rubrica di recensioni del cibo a Roma, sottolineando l'opportunità di scoprire e provare locali nuovi a poco prezzo.
- L'influencer C propone video in "stile unboxing" in cui apre le box TGTG di fronte ai follower mostrando tutto il cibo che ha salvato.
- L'influencer D mostra un impiego "anomalo" della app poiché acquista una box da un fioraio che le propone fiori freschi e piantine. L'influencer sottolinea la dimensione del divertimento e del "salvataggio" di un prodotto.

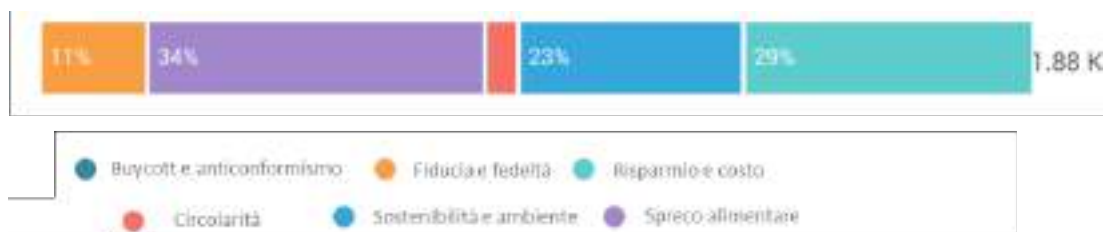
Quest'ultimo post, in particolare, è interessante poiché suggerisce la possibilità di estendere il campo di azione dell'app ad altri contesti, sempre nella doppia ottica del risparmio, da un lato, e della sostenibilità, dall'altro.

Pochi e di scarsa rilevanza sono i punti di debolezza riscontrati: impossibilità di leggere le recensioni dei negozi e di filtrare preferenze o necessità alimentari (vegano/vegetariano, intolleranze e allergie), casi specifici di box non soddisfacenti (prodotti non consumabili o in scarsa quantità). Si tratta evidentemente di elementi di natura funzionale,

per i quali si può facilmente trovare una soluzione e che non mettono certamente in discussione l'identità dell'app e la sua mission.

Il successo di TGTG lo si deve alla sua capacità di soddisfare le aspettative che gli utenti hanno nei confronti delle app sostenibili. Il beneficio collettivo è senz'altro importante, ma si affianca al beneficio individuale ricercato attraverso il risparmio e la gratificazione per aver concluso "un affare". Analizzando, infatti, i topic più rilevanti associati alle app sostenibili (Figura 3), il tema, generale, dello spreco alimentare è il più menzionato (34%). Esso viene associato in maniera inequivocabile all'app TGTG, ritenuta efficace nel convincere della sua promessa di lotta allo spreco alimentare. Emerge, poi, l'importanza del risparmio/costo (29%), che si conferma, dunque, un essenziale driver di utilizzo delle app di food sharing, che vengono percepite come non più funzionali quando l'affare viene meno.

Figura 3 – Topic associati all'app TGTG



Fonte: nostra elaborazione

La sostenibilità è una tematica importante (23%), ma secondaria rispetto al fattore economico. Sebbene gli italiani riconoscano nelle app il merito di rendere possibili comportamenti più sostenibili, la centralità della sostenibilità passa attraverso il benefit del prodotto e vantaggi immediatamente tangibili: possibilità di risparmiare su acquisti abituali, facilità e sicurezza d'utilizzo.

Il tema che segue è quello della fiducia/fedeltà (11%), menzionato sia con riferimento alla facilità e sicurezza d'utilizzo sia alla fiducia nella promessa di sostenibilità. Questo trova riscontro nell'analisi molto positiva del sentiment dei contenuti riferiti al tema della fiducia nei confronti dell'applicazione, a riprova della credibilità che quest'ultima è riuscita a conquistare (Figura 4).

In sintesi, le app di food sharing – e, in particolare, Too Good To Go – sono considerate un buon strumento per contribuire al rispetto dell'ambiente, ma solo a condizione che siano anche sostenibili dal punto di vista economico: la promessa di sostenibilità deve essere accompagnata da effettivi vantaggi in termini di costo e da un'esperienza di fruizione semplice, piacevole e divertente.

Figura 4 – Sentiment degli utenti nei confronti del tema fiducia verso la app



Fonte: Nostra elaborazione

Discussioni e implicazioni manageriali. La ricerca fornisce utili spunti alle imprese che intendono farsi parte attiva nella promozione di comportamenti sostenibili, sviluppando iniziative proprie oppure attivando collaborazioni con app consolidate come quella analizzata. L'insight a nostro avviso più interessante emerso dai risultati della ricerca riguarda la multidimensionalità delle motivazioni di utilizzo dell'applicazione: da un lato, la dimensione individuale (risparmio economico) convive con quella collettiva (beneficio per ambiente e società); dall'altro lato, i benefici funzionali (facilità d'uso) si uniscono a quelli edonistici (scoperta e divertimento).

L'eterogeneità dei benefici ricercati trova spiegazione nella natura stessa delle scelte sostenibili, che sono di per sé "intertemporali", ovvero richiedono un sacrificio oggi per un beneficio futuro, che non è necessariamente garantito né individuale (Bellini, 2023). La presenza di benefici non immediati e disallineati può costituire un disincentivo ad assumere comportamenti sostenibili, a maggior ragione se questi richiedono sacrificio e se non hanno una contropartita vantaggiosa per l'individuo. Per favorire l'engagement e aiutare l'individuo nel mantenere saldo il comportamento nel lungo periodo, è opportuno trovare il giusto equilibrio tra benefici collettivi e individuali. La leva del prezzo, quindi, rappresenta un buon rinforzo a sostegno delle iniziative che intendono stimolare l'individuo a farsi parte attiva nella sostenibilità ambientale e sociale.

Il successo di TGTG lo si deve alla sua capacità di soddisfare le aspettative degli utenti nei confronti delle app sostenibili in relazione alla presenza di benefici immediatamente tangibili quali la possibilità di risparmiare su acquisti

abituale, la facilità e la sicurezza d'utilizzo. Bisogni individuali e collettivi convergono, così come elementi funzionali ed esperienziali. La dimensione edonistica legata alla scoperta di nuovi prodotti e alla ricerca di nuove esperienze culinarie alimenta l'engagement degli utenti e favorisce quello spirito di aggregazione e appartenenza che rappresenta una delle chiavi di successo delle iniziative nel campo della sostenibilità.

La reputazione e la credibilità di TGTG nel campo della sostenibilità deve essere tenuta in considerazione da parte delle aziende che intendono farsi parte attiva in questo ambito stringendo collaborazioni e partnership esterne. È il caso, per esempio, delle numerose aziende della grande distribuzione alimentare che si stanno impegnando sul fronte dello spreco alimentare attraverso iniziative proprietarie ma anche accordi con TGTG. Contare su un partner riconosciuto e affidabile accresce la reputazione anche dell'insegna e può rappresentare un elemento di scelta del punto vendita.

La sostenibilità è un terreno molto complesso che deve essere affrontata in maniera sinergica da tutti gli operatori della filiera nella consapevolezza che la promozione dei benefici collettivi passa anche attraverso una dimensione individuale e utilitaristica di cui occorre tenere conto.

Limiti della ricerca. La presente ricerca costituisce il primo step di analisi all'interno di un più ampio progetto di studio volto a individuare i driver di utilizzo delle app sostenibili, nonché le conseguenze percepite che ne derivano. Proprio per questa ragione, si possono individuare alcune limitazioni che si intendono colmare attraverso la prosecuzione della ricerca. Innanzitutto, il focus è stato posto su una specifica app - TGTG - ma dovrebbe essere esteso ad altre applicazioni, anche in contesti diversi da quello alimentare, al fine di far emergere gli elementi di successo. In secondo luogo, per consolidare i risultati ottenuti da questa prima ricerca, sarebbe necessario svolgere un'indagine quantitativa che permetta di misurare gli elementi emersi e il loro impatto sul comportamento del consumatore.

Originalità. Nonostante l'ampio successo riscosso negli ultimi anni da TGTG, oggi considerata l'app di riferimento per la riduzione del cibo invenduto, nessuno studio in letteratura ha indagato i driver che spingono i consumatori ad utilizzare l'applicazione e, soprattutto, gli elementi di soddisfazione e insoddisfazione che ne derivano dal suo utilizzo. Il presente lavoro colma tale gap e lo fa utilizzando la metodologia di raccolta dati del web listening: l'analisi del conversato in rete e, quindi, del vissuto raccontato dagli utenti, ha permesso di individuare i fattori critici di successo, nonché gli elementi di fiducia verso l'applicazione.

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References

- ANDREOTTA M., NUGROHO R., HURLSTONE M.J., BOSCHETTI F., FARRELL S., WALKER I., PARIS C. (2019), "Analyzing social media data: A mixed-methods framework combining computational and qualitative text analysis", *Behavior research methods*, vol. 51, pp. 1766-1781.
- APOSTOLIDIS C., BROWN D., WIJETUNGA D., KATHRIARACHCHI E. (2021), "Sustainable value co-creation at the bottom of the pyramid: using mobile applications to reduce food waste and improve food security", *Journal of Marketing Management*, vol. 37, n. 9-10, pp. 856-886.
- BELLINI S. (2023), *(Sweet) Marketing for Conscious Shopping*, EGEA, Milano.
- EC E. (2015), *Closing the loop-An EU action plan for the Circular Economy*. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Brussels, Belgium.
- FAO E. (2019), "Moving forward on food loss and waste reduction", *The State of Food and Agriculture 2019*.
- GHISELLINI P., CIALANI C., ULGIATI S. (2016), "A review on circular economy: the expected transition to a balanced interplay of environmental and economic systems. *Journal of Cleaner production*, vol. 114, pp. 11-32.
- HOFMANN F. (2019) Circular business models: Business approach as driver or obstructer of sustainability transitions?", *Journal of Cleaner Production*, vol. 224, pp. 361-374.
- HOLT-GIMÉNEZ E., SHATTUCK A., ALTIERI M., HERREN H., GLIESSMAN S. (2012), "We already grow enough food for 10 billion people... and still can't end hunger", *Journal of Sustainable Agriculture*, vol. 36, n. 6, pp. 595-598.
- KIM J., RUNDLE-THIELE S., KNOX K., BURKE K., BOGOMOLOVA S. (2020), "Consumer perspectives on household food waste reduction campaigns", *Journal of Cleaner Production*, vol. 243, 118608.
- LANG L., WANG Y., CHEN X., ZHANG Z., YANG N., XUE B., HAN W. (2020), "Awareness of food waste recycling in restaurants: evidence from China", *Resources, Conservation and Recycling*, vol. 161, 104949.
- LEWANDOWSKI M. (2023), "The strive to social innovation that thrives on the mobile application. A Case Study of Too Good To Go", *Procedia Computer Science*, vol. 225, pp. 902-911. ISO 690
- MORONE P., FALCONE P.M., IMBERT E., MORONE A. (2018), "Does food sharing lead to food waste reduction? An experimental analysis to assess challenges and opportunities of a new consumption model", *Journal of cleaner production*, vol. 185, pp. 749-760.
- PARLIAMENT E.U. (2018), "Directive (EU) 2018/844 of the European Parliament and of the Council of 30 May 2018 amending Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27", *EU on energy efficiency*.
- SCHANES K., DOBERNIG K., GÖZET B. (2018), "Food waste matters-A systematic review of household food waste practices and their policy implications", *Journal of cleaner production*, vol. 182, pp. 978-991.
- UNITED NATIONS. (2015), *Resolution adopted by the General Assembly on 25 September 2015*. New York, NY, USA: United Nations.

- VAN HOLSTEIJN F., KEMNA R. (2018), "Minimizing food waste by improving storage conditions in household refrigeration", *Resources, Conservation and Recycling*, vol. 128, pp. 25-31
- VO-THANH T., ZAMAN M., HASAN R., RATHER R.A., LOMBARDI R., SECUNDO G. (2021), "How a mobile app can become a catalyst for sustainable social business: The case of Too Good To Go", *Technological Forecasting and Social Change*, vol. 171, 120962.
- ZUREK K. (2016), "Food sharing in Europe: between regulating risks and the risks of regulating", *European Journal of Risk Regulation*, vol. 7, n. 4, pp. 675-687.

Websites

- CONSILIUM EUROPA (2023), *Ridurre le perdite e gli sprechi alimentari* <https://www.consilium.europa.eu/it/policies/food-losses-waste/>
- FAO (2022), *Tackling food loss and waste: A triple win opportunity* <https://www.fao.org/newsroom/detail/FAO-UNEP-agriculture-environment-food-loss-waste-day-2022/en>
- TOO GOOD TO GOO, *Web Site* <https://www.toogoodtogo.com/it>
- TOO GOOD TO GOO (2023), *Una community che ha evitato che 250 milioni di pasti andassero sprecati: Too good to go annuncia un nuovo traguardo globale* <https://www.toogoodtogo.com/it/press/250-milioni-pasti-salvati>
- UNEP (2021), *Food Waste Index* <https://www.unep.org/resources/report/unep-food-waste-index-report-2021>

Well-being as a key for sustainable and long-term oriented management

DARIO NATALE PALMUCCI¹ GABRIELE SANTORO²

Abstract

While digitalization and hybrid work models have undoubtedly brought positive impacts to organizations and individuals' performance, they have also posed challenges to psychological safety. In fact many employees, particularly knowledge workers, struggle to navigate the intrusive digital professional reality, leading to increased work-related stress. Although the attention on the consequences of this new form of work-related stress has increased, prior research has primarily concentrated on examining these facets through the perspectives of stakeholders taken singularly (such as psychologists solely, HR practitioners only or employees alone). In contrast, this work delves into a range of viewpoints from various stakeholders together, providing a more comprehensive understanding. As such, the insights garnered from this study were derived from a blend of literature review and interviews conducted by the researchers with various stakeholders together (HR practitioners, employees and psychologists). From a theoretical point of view, the study adds to the literature shedding light on consequences of uncontrolled hybrid work models and technology advancements (in particular negative effects on employees' psychological wellbeing). In addition, this work also offers practical examples, insights and actionable tips derived from practitioner experience, emphasizing the importance of leaders' awareness in managing performance and ensuring psychological safety. For all these reasons this piece of work can function as a roadmap for creating and putting into effect institutional regulations, organizational policies, and procedures that promote telework practices beneficial to the health and wellness of workers.

Key words: Management; organizational wellbeing; teleworking; digitalization; work-related stress; digital wellbeing

Framing of the research. This work is focused on organizational wellbeing practices in the actual post-covid-digitalized era and it is anchored to the general stream of wellbeing, which conceptualization varies in meaning between and within disciplines (Ronen and Kerret, 2020). In particular, regardless its definition, wellbeing (and wellbeing at work) is considered always more relevant and both the scientific community and institutional bodies are looking at wellbeing as a key for sustainable development (Frey, 2018). In other words, occupational health means to ensure safe conditions for people's well-being in the workplace (Battaglia et al, 2020) and the necessity of an in-depth analysis on this topic springs from the transformative shift we have witnessed during the pandemic when organizations resorted to technology and telecommuting to sustain their operations (Mariani et al., 2023; Andrulli and Gerards, 2023). Remarkably, these novel work modes not only persisted beyond the crisis but have become central to contemporary work dynamics in the post-Covid landscape (Kokshagina and Schneider, 2023). However, despite the positive impact of digitalization and hybrid work models on organizational and individual performance, concerns are mounting regarding employee and people well-being (Shukla et al., 2024) which must remain the ultimate goal of sustainable development (Helne and Hirvilammi, 2015). In fact, if from one hand relevant contributions indicate that employees who dedicate part of their time to remote work often receive more positive performance evaluations from their supervisors (Choudhury et al., 2022), conversely there is compelling evidence indicating a notable decline in workers' health, particularly in their mental well-being (Marino and Capone, 2021), along with the increasing challenge of maintaining clear boundaries between home and work environments. This blurring of boundaries has significantly hindered employees' ability to disconnect (Campbell and Gavett, 2021). Here the framing of this research comes into play: if according with previous studies organizational wellbeing is defined as "the whole of cultural, processes and organizational practices that light up co-working life, promoting, maintaining and improving the physical, psychological and social wellbeing of work communities" (Sancassiani et al., 2015), then wellbeing is in danger and recent literature sustains that after pandemic more and more workers struggle with stress stemming from information overload and constant notifications (Parra et al., 2022; Mariani et al., 2023). Considering what said, attention on this area has grown, with researchers and professionals always more focused at exploring all sides of the hybrid work models: both opportunities and risks. However, there is still a gap and in particular it refers to the fact that despite the increased attention on the consequences of this new form of work-related stress, actual studies are unable to provide a comprehensive perspective as they are primarily focused on examining these aspects from the standpoint of individual stakeholders, such as psychologists only, or HR practitioners

¹ Università di Torino
e-mail: darionatale.palmucci@unito.it

² Università di Torino
e-mail: gabriele.santoro@unito.it

solely, or employees exclusively. In contrast, this exploratory work explores a range of perspectives from various stakeholders together (including HR professionals, employees and psychologists), leading to a more comprehensive understanding.

Purpose of the paper. This work in progress is a part of a wider project that aims to shed light on the matter of organizational wellbeing in light of the revolutionary changes on remote work modalities brought from the global Covid-19 crisis. In fact, following the public health emergency, organizations have increasingly embraced novel technologies and alternative work arrangements such remote working (Capo et al., 2022). This transition has impacted employee performance and organizational objectives from one side, from the other side these significant shifts have also resulted in heightened work-related stress for employees who struggle to manage the pervasive digital work environment effectively. For this research endeavors to thoroughly investigate organizational well-being in the post-COVID era by gathering perspectives from various stakeholders. The objective is to present tangible examples and actionable solutions that emerging leaders can utilize, thereby fostering a comprehensive grasp of the topic. To summarize, if as previously mentioned organizational wellbeing is defined in terms of practices promoting, maintaining and improving physical, psychological and social wellbeing (Sancassiani et al., 2015), then these three relevant aspects must be carefully investigated and thus represent the main objective of the study. This research also aims to provide managerial implications that actual leaders should consider, contributing to a better understanding of the topic.

Methodology. For this study, a qualitative methodology involving interviews with diverse stakeholders is employed. This approach is chosen based on prior research affirming the effectiveness of qualitative methods in exploring wellbeing (Dawes et al., 2021). In addition to delve deeper into these phenomena and in order to offer a more holistic understanding of the factors affecting employees' wellbeing, our study adopts a diverse sample to explores diverse viewpoints from both internal and external stakeholders. Internal stakeholders refer to two categories of organizational actors daily dealing with the constraints of remote working modalities (thus first HR professionals allowing/defining rules of these teleworking modalities in their organizational contexts, second employees who direct experience the effects of the hybrid working solutions). External stakeholders instead refer to those professionals not directly integrated in the organizations but that assist knowledge workers and support them externally in the actual digital overstressed reality (thus psychologists). This approach, drawing from similar methodologies used in previous studies (Todisco et al., 2023), aims to maximize exploratory impact (Gustafsson, 2017) of the work. In other words, the findings have been identified by mixing literature findings with qualitative data obtained by the researcher conducting interviews with different stakeholders mentioned above. With regard to the methodology then it is also important to remark that the paper is based on a theory synthesis perspective (Jaakkola, 2020) supported by qualitative evidence following Saunders and Townsend (2016) and Palmucci (2023). In particular, 16 participants from different organizational contexts have been interviewed as previously done in other exploratory studies (Bresciani et al., 2016). Thus the sample represent different industries and services and the interviews comprised two distinct parts. In the initial part, participants were asked to share in general their personal experiences with telecommuting methods and the adoption of technology within their specific settings. More in the details, according with organizational wellbeing definition of Sancassiani et al., (2015), that clearly refers to three aspects of wellbeing (i.e. physical, psychological and social), they were encouraged to express their concerns on their daily practices and if they are experiencing work-related stress. Subsequently, in the second part, participants were asked to propose potential remedies to avoid negative consequences. Concluded the data gathering, the information obtained were later arrayed following the Gioia's technique (Gioia et al., 2013) which builds upon the grounded theory and ensures methodological accuracy when using qualitative approach. By using this method, data are analyzed in first-order concepts, then grouped into second-order themes considering similarities, and then finally refined into aggregate theoretical dimensions.

Results. As mentioned, this study is a work in progress and part of a wider project. This means that the ones obtained are ongoing findings and other interviews will be conducted in the coming period. However, throughout the interviews carried out till now, participants underscored several benefits linked to remote working and technology but, as expected, the majority of the participants are facing significant challenges and expressed concerns about their psychological safety. The main results of the analysis performed with Gioia method and considering definition of wellbeing (Sancassiani et al., 2015) are summarized in the 3 aggregate dimensions discussed below:

- **Physical wellbeing=** On a physical level, participants reports several negative effects as eyes problems (because of the increased time spent in front of screen), sleep disorders (one participant said: "I read e-mails till the very last minutes before going to sleep and consequently during the night I am not able to stop thinking on tasks"), obesity and sedentary lifestyle (because of the decrease in movement even just moving from one's desk to that of a colleague for a meeting) joint pain at neck and back (because of un-appropriate work station used at home);
- **Psychological wellbeing=** On a psychological level, participants reported several psychosomatic symptoms caused by continuous workloads. In particular, interviews with psychologists reveal a significant increase in psychological issues within their patients (e.g., anxiety, addictions, loneliness, burnout cases, etc.). Furthermore, one psychologist interviewed noted a doubling in burnout cases since the pandemic began affirming that workers find difficult disconnecting from work, they are becoming addicted to constant digital communication.
- **Social wellbeing=** at a social level, participants are reporting the "blurring of personal and professional boundaries". In particular, working from home blurs the lines between personal and work life. In fact, while going to the office can provide a break from family and emotional issues, remote work alongside family members can lead to constant overlap between these spheres. This ambiguity makes it difficult to differentiate between work and family time. As a result and paradoxically then, despite the initial intention in introducing remote working practices was to increase work-life

balance for employees (Kokshagina and Schneider, 2023), we are now assisting to a decline in work-life Balance among employees remote workers because working in shared spaces with family members (like kitchens or relaxation areas) is disrupting the necessary boundary between work and personal life and is increasing stress experience instead. In addition, many many remote workers feel pressured to be constantly available online, leading to extended working hours beyond the designated schedule. Fear of not being seen as active online can exacerbate this tendency, as expressed by one participant who felt “guilty for disconnecting during lunch breaks”.

Research limitations. This study is not without limitations. First the limits refer to the approach adopted. It is to say that to prevent further segregation of managerial knowledge and to increase the validity of the results obtained, it remains essential to gather more data and perhaps by adopting diverse additional modalities of data gathering (e.g. quantitative data, etc.). Considering what said, researchers ought to integrate these findings should utilize different methodologies to advance knowledge in this topic. Also as already mentioned, this study is a work in progress and part of a big and wider project, therefore more data gathering would help in the next phase to better understand the phenomena both at theoretical and a managerial level. Furthermore, it's essential to address discrepancies between internal (HR professional and employees) and external (psychologists) stakeholders' perceptions of organizational efforts towards stress alleviation. Internal stakeholders may feel unsupported in comparison to external perceptions. On this regard, more categories can be added to the sample (as internal organizational counsellors or external consultants and coach) in order to have a clearer picture of the subject investigated and consequently increase the generalizability of the findings.

Managerial implications. In essence, the research contributes to both theory and practice by analyzing the risks for employees associated with the abuse of technology and new working modalities. The information gathered from various stakeholders as HR professionals, employees and psychologists, provide a comprehensive view of real-world scenarios. From a managerial point of view, given the imperative digital transition that decision makers must lead, alongside the shift from in-person work models to remote modalities (Fayard et al., 2021), seems to be clear that future leaders should demonstrate fully openness and adaptability to welcome these necessary epochal changes. A crucial aspect, therefore, concerns in spreading awareness within organizational contexts and departments regarding how much important is not to ignore the dynamics described. This implies promoting training programs focused on digital well-being courses able to encourage the implementation of work routines and best practices for preserving the psychological safety of workers. Considering what said, remedies and solutions proposed are the following:

- **Re-defining Policy and Rules** = First of all, as expressed from some of the interviewees, “it is not possible looking at the future with the “lenses of the past”. In other words, it is primary important to be aware of the epochal change and wear new lenses when disorientation dominates (Baccarani and Golinelli, 2011). Therefore, policy makers should solicit for example a “right to disconnect” in order to preserve the essential boundaries between personal and professional life. As we are assisting, employees felt they have no freedom to disconnect from work responsibilities, then organizational leaders need to intervene and establish clear working rhythms. Another good example of tentative to look at the future with new lenses is to completely rethink the annual and sick leave policies. In fact, traditional leave policies no longer suffice in the current digitalized era. Remote work complicates the process of requesting sick or annual leave (one participant said: “often, if people are sick, they do not ask for sick leave but they keep working from home”, leading to imbalances and increased stress. Reevaluating these policies is crucial to adapt to the post-Covid digital landscape. Another important aspect which must be re-defined is relative to the shaping of organizational cultures and communities which is jeopardized from remote working modalities. On this regard, HR departments should invest in organizing more retreats and outdoor activities to foster team building, collaboration and workers' alignment with organizational goals. This is particularly important for the onboarding of new hires who are finding difficult interacting with colleagues and build relationships effectively with remote working;
- **Learning and development training programs**= considering the constrained highlighted and in order to proactively deal with these issues, organizations (and in particular HR departments) should work in implementing revised safety training programs. This new digital well-being training could be essential for employees and could help them in integrating mental health measures into daily routines, such as managing notifications and also promoting a digital detox Culture (encouraging for example periods of disconnection from digital devices). Also, learning and development training programs should focus on the development of new leadership models. This is important for both top management (whose sponsor is fundamental to support these initiatives) and first line supervisors to actively lead the digital transition. In other words, leadership awareness is crucial for taking a proactive approach, monitoring employees' well-being and use effective communication skills for managing remote teams. This last aspect is also fundamental: providing training to supervisors (and thus enhancing their leadership soft and communication skills) is essential to help in maintaining motivation and productivity among remote workers. This means embracing a new concept of leader who needs to adopt an innovative and people-oriented approach, prioritize the well-being of employees while driving digital transitions. Proactive leadership involves anticipating/addressing challenges and ensuring a supportive work environment for all team members.

Originality of the paper. This research holds relevance not just for supervisors contending with these challenges in their daily work, but also for the scientific community aiming to enhance their understanding of the matter of wellbeing. In fact, while the focus on the ramifications of this emerging type of work-induced stress has grown, previous research has largely focused on analysing these aspects from isolated stakeholder's points of view and perspectives (e.g. solely psychologists, or employees only, etc.) whereas this study explores diverse viewpoints from different organizational actors

offering a more holistic understanding. Thus, aligning with the exploratory essence of the study and in order to have a more comprehensive perspective, the insights obtained with this study were gleaned through a combination of literature review and interviews conducted by the researcher on a diverse sample composed of HR managers, senior managers, subordinates, organizational counselors, psychologists, consultants, and coaches. In addition, as also done in previous studies (Bresciani et al., 2016), the diverse sample of participants interviewed represents different work environments across different sectors (increasing the generalizability of the findings) in diverse domains. As said, the insights derived from this study result from a combination of literature review and interviews conducted as also done in previous studies (Ravazzani et al., 2021) that focused on qualitative data and documentary analysis for analyzing practice developments. To conclude, like significant evolutionary processes in history, 2020 will be etched in memory as a pivotal juncture in the evolution of organizational wellbeing and it is primary fundamental to increase the knowledge on these paradigmatical changes and the risks associated.

References

- ANDRULLI R., GERARDS R. (2023), "How new ways of working during COVID-19 affect employee well-being via technostress, need for recovery, and work engagement", *Computers in Human Behavior*, vol. 139, 107560
- BACCARANI C., GOLINELLI G.M. (2011), "Fermate il mondo... voglio scendere! Il vantaggio competitivo della riflessione. *Sinergie Italian Journal of Management*, n. 63, pp. 5-9.
- BATTAGLIA M., PASETTI E., BIANCHI L., FREY M. (2020), "Innovation in managing sustainability: a tentative integration of accounting for employee health and safety", *Sinergie Italian Journal of Management*, vol. 38, n. 1, pp. 73-101.
- BRESCIANI S., GIACOSA E., BROCCARDO L., CULASSO F. (2016), "The family variable in the French and Italian wine sector", *EuroMed Journal of Business*, vol. 11, n. 1, pp. 101-118.
- CAMPBELL M., GAVETT G. (2021), "What covid-19 has done to our well-being, in 12 charts", *Harvard Business Review*, vol. 10.
- CAPO F., D'AGOSTINO L.M., TORRISI S. (2022), "Impact of COVID-19 on digital transformation: an empirical analysis of manufacturing companies", *Sinergie Italian Journal of Management*, vol. 40, n. 2, pp. 275-297.
- CHOUDHURY P., KHANNA T., MAKRIDIS C., SCHIRMANN K. (2022), "Is hybrid work the best of both worlds? Evidence from a field experiment", *Harvard Business School Technology & Operations Mgt. Unit Working Paper*, (22-063), pp. 22-063.
- DAWES J., MAY T., MCKINLAY A., FANCOURT D., BURTON A. (2021), "Impact of the COVID-19 pandemic on the mental health and wellbeing of parents with young children: a qualitative interview study", *BMC psychology*, vol. 9, n. 1, pp. 194.
- FAYARD A.L., WEEKS J., KHAN M. (2021), "Designing the hybrid office", *Harvard Business Review*, vol. 99, n. 2, pp. 114-123.
- GIOIA D.A., CORLEY K.G., HAMILTON A.L. (2013), "Seeking qualitative rigor in inductive research: Notes on the Gioia methodology", *Organizational Research Methods*, vol. 16, n. 1, pp. 15-31.
- FREY D.F. (2018), "Economic growth, full employment and decent work: The means and ends in SDG 8", *In the Sustainable Development Goals and Human Rights* (pp. 122-142). Routledge.
- GUSTAFSSON J. (2017), Single case studies vs. multiple case studies: A comparative study.
- HELNE T., HIRVILAMMI T. (2015), "Wellbeing and sustainability: A relational approach", *Sustainable Development*, vol. 23, n. 3, pp. 167-175.
- JAAKKOLA E. (2020), "Designing conceptual articles: four approaches", *AMS Review*, vol. 10, n. 1, pp. 18-26.
- KOKSHAGINA O., SCHNEIDER S. (2023), "The digital workplace: Navigating in a jungle of paradoxical tensions", *California Management Review*, vol. 65, n. 2, pp. 129-155.
- MARIANI M., WAMBA S.F., CASTALDO S., SANTORO G. (2023), "The rise and consolidation of digital platforms and technologies for remote working: Opportunities, challenges, drivers, processes, and consequences", *Journal of Business Research*, 113617.
- MARINO L., CAPONE V. (2021), "Smart working and well-being before and during the COVID-19 pandemic: A scoping review", *European journal of investigation in health, psychology and education*, vol. 11, n. 4, pp. 1516-1536.
- PALMUCCI D.N. (2023). "Decision making in human resources standard practices and change management innovation initiatives: the common destiny of being affected by biases", *EuroMed Journal of Business*.
- PARRA C.M., GUPTA M., CADDEN T. (2022), "Towards an understanding of remote work exhaustion: A study on the effects of individuals' big five personality traits", *Journal of Business Research*, vol. 150, pp. 653-662
- RAVAZZANI S., MAZZEI A., FISICHELLA C., BUTERA A. (2021), "Diversity and inclusion management: an analysis of practice developments in Italy", *Sinergie Italian Journal of Management*, vol. 39, n. 3, pp. 213-229.
- RONEN T., KERRET D. (2020), "Promoting sustainable wellbeing: Integrating positive psychology and environmental sustainability in education", *International journal of environmental research and public health*, vol. 17, n. 19, pp. 6968.
- SANCASSIANI F., CAMPAGNA M., TULIGI F., MACHADO S., CANTONE E., CARTA M.G. (2015), "Organizational wellbeing among workers in mental health services: a pilot study", *Clinical practice and epidemiology in mental health: CP & EMH*, n. 11, p. 4.
- SAUNDERS M.N., TOWNSEND K. (2016), "Reporting and justifying the number of interview participants in organization and workplace research", *British Journal of Management*, vol. 27, n. 4, pp. 836-852.
- SHUKLA M., TYAGI D., PANDEY J. (2024), "Safety "works": the influence of safety coaching on work engagement", *Management Decision*.
- TODISCO L., TOMO A., CANONICO P., MANGIA G. (2023), "The bright and dark side of smart working in the public sector: employees' experiences before and during COVID-19", *Management Decision*, vol. 61, n. 13, pp. 85-102.

The role of the enterprise in the pursuit of the well-being for citizens and society. The contribution of the Italian Schools of Enterprise Economics and Management

SILVIA BRUZZI¹

Abstract

The paper presents an ongoing research project that, starting from the crisis of the globalisation process and the liberist model, aims to revitalize the liberal thought, which has flourished in the field of Enterprise Economics and Management. Through a robust research methodology, based on both a systematic literature review and the involvement of key stakeholders in the Italian economic system, the research aims to enhance the contribution that the different Italian Schools of Enterprise Economics and Management in the second half of the XX century have made to the construction of the capitalist model that gave rise to the Italian economic miracle, also participating in its government. The research proposal suggests that as in the post-World War II period the Academy contributed through thought and action to the construction of the model on which the Italian economic miracle flourished, today we are called on to contribute to the construction of the new European and Italian model of development and growth.

Key words: Enterprise Theory; European Model of Development and Growth; Liberal Thought; Well-being; Society

Framing of the research. *The topic of the SIMA 2024 Conference presents a cultural opportunity of historic significance. Addressing the contribution of enterprises to the well-being of citizens and society places our discipline amidst the major crisis that Western economic systems and the economic models prevailing in recent years have been undergoing. The crisis is evident: disorders, resource shortages, inflation, and humanitarian emergencies have marked Europe and the United States for some years now. Institutions seemed incapable of effectively addressing this crisis, lacking a strategic vision that could offer peaceful solutions and stability. This vacuum is filled by some large multinational corporations, often owned by a few investment funds, which thereby exert their influence in markets and beyond. Medium, small, or less structured enterprises, which grapple with crises daily, are among the victims of this disorder. Consequently, the purchasing power of citizens declines, society experiences increasing levels of poverty, and growth prospects are slow to emerge.*

This crisis is an expression of the globalisation that characterised the end of the 20th century and the early years of the 21st century. With the process of globalisation, markets have transcended State boundaries, and multinational enterprises have been able to exploit the advantage of operating in an unregulated global environment. Through globalisation, liberalism has gradually been supplanted by liberism (Croce and Einaudi, edited by Solari, 1957). According to liberal thought, market actions must be regulated by the State; however, with the erosion of national borders, the market has been able to rapidly expand, exploiting and generating various gaps. Consequently, States have become incapable of regulating economic actions at the international level, resorting to cooperative solutions if not integration (as in Europe) at the regional level.

As the globalisation-liberism binomial declines, new balances are emerging. For example, the cohesion between certain countries, notably the BRICS, has accelerated, with the growth of member countries and the deepening of economic agreements among them.

For Europe it is about reinventing the European development and growth model. This was said in April 2024 in Brussels by Mario Draghi, who has been charged by the European Commission to prepare a Report expected after the European Parliament elections on the future of European competitiveness. Draghi argues that the European development model has dissolved, that the European approach to competitiveness undermines the European social model, and it is therefore necessary to reinvent a different way to grow. He highlights three emerging common threads, which have a lot to do with our discipline and the theme of the conference. The first is enabling scale; the lack of enabling scale penalizes our ability to compete because we fail to bring innovations to the market stage (this is what has been called by the European Commission in 1995 Green Paper on Innovation the European paradox, which is still unresolved). The second thread is providing public goods (just think of infrastructure barriers to development). The third thread is securing the supply of essential resources and inputs. The issue has a lot to do with energy for example, but other commodities also

¹ Università di Genova
e-mail: silvia.bruzzi@unige.it

meet our basic needs. For these reasons Draghi is now preparing a European model of development and growth radical change proposal (Euractive Italia, 2024; Sole 24 Ore, 2024; Draghi, 2024).

Also within the framework of Draghi's speech is Enrico Letta's report, which is the first document released on the specific topic of the European Single Market, considered a pillar of the European model. Letta argues that "several factors call for updating the cardinal points of the Single Market, aligning them with the European Union's new vision for its role in a world that has grown "larger" and undergone significant structural transformation" (Letta, 2024, p. 4).

This certainly involves the enterprise, its role, and its management, which calls the Academy to deep scientific reflection.

Today we are experiencing a situation like that of the post-World War II period. This research seeks to highlight that just as then some scholars in our discipline, acting as civil servants, participated in the construction of the socio-economic development model of the time, creating the economic miracle and the conditions of prosperity that we still partly enjoy, today, reconnecting with our academic tradition, we are called for making a tangible contribution to the designing of a new, original model of development and growth.

Purpose of the paper. The purpose of the research is twofold. Firstly, the research aims to highlight the characteristics of the XX century American, European, and Italian liberal models, emphasizing their strengths compared to the liberist model upon which the process of globalisation, today in crisis, was based.

Secondly, the research seeks to underscore the role played by Italian Schools of Enterprise Economics and Management, operating autonomously yet synergistically, in shaping the Italian economic miracle of the 20th century. The thesis proposed in this research is that the current crisis offers an opportunity for a substantial reflection on the role of the enterprise in society, grounded in the teachings of past Masters.

As several scholars in Enterprise Economics and Management did in the first development cycle, the research aims to provide an answer to the current real problems that European and Italian enterprises are facing, to create the conditions for sustainable competitiveness and the well-being of society.

Reflecting on the evolution of the role of the enterprise in society in the experience of the 20th century it is possible to propose solutions to the decision-makers who are today designing the new European model of development and growth to meet the needs of the 21st century.

The role of the enterprise has been progressively defined within a discipline (Economics) that is a relatively young one and for this reason requires ongoing reflection to effectively guide present and future processes.

The origins of Economics can be traced back to the 18th century, when the economic systems, predominantly agrarian and commercial, underwent profound changes driven by the scientific and technical advancements of the era, that led to the first industrial revolution. This era not only introduced new, complex, and extensive production activities and processes but also marked the advent of spill-over effects between labour and capital, with significant social impacts. Consequently, a pressing need arose for a new discipline to govern the reorganization of resources and activities in accordance with the evolving scenario and respecting human dignity.

The binomial Economics and Values characterised liberal thought in 18th century European countries, standing at the centre of the reflection on the objectives of the emerging economic discipline. Economics, originating from Ethics, offers itself as a means to achieve objectives aligned with the value system of the society. The role of the enterprise is drawn in this contest and continually evolves over time.

The connection between Economics and liberalism is the feature of the Anglo-Saxon thought of the time, represented by Adam Smith, a moral philosophy teacher considered as the founding father of the liberal thought. According to him, the two fundamental actors in economic systems - the enterprise and the State - assume distinct yet complementary roles. The enterprise is tasked with ensuring full employment of productive factors for collective wealth, and the State is entrusted with regulating economic actions to foster private initiative and, consequently, economic, and social development (Smith, 1759, It. ed. 1995; Smith, 1776, It. ed. 2008)².

The advent of the second industrial revolution and mass production in the 20th century leads to a new era with increasingly complex challenges for the economic discipline. The early years of the 20th century are a period of intense ferment in the development of economic thought.

The 1929 crisis highlights the extent of market failures, attributed in part to large economic concentrations exacerbated by laissez-faire policies (liberism), and thus represents an opportunity to renew the Smithian liberal thought.

In the United States, the Rooseveltian model, considered the pioneer of modern neocapitalism, takes shape (Roosevelt, 1933). Roosevelt rethinks the State-market relationship assigning the (federal) State a central role in economic development. He thus launches a programme of investment policies and a new public institution (the federal authority or agency) to revitalise depressed regions, acting under conditions of economic balance and managerial autonomy. One

² In this period, also Italy takes part to the formulation of economic thought thanks to Muratori and Genovesi. The latter was assigned the first European chair in Economics (Chair of Commerce and Mechanics) in Naples in 1754. *Della pubblica felicità*, published by Muratori in 1749 by way of spiritual testament, constitutes a political treaty on good government, addressed to those (then the prince) called to this great responsibility. In Muratori the political aspect is closely connected to the social and thus to the economic one (Muratori, 1749, ed. 2016). According to Muratori government is necessary to deal with imbalances and disorders, anticipating what would later become the confrontation/conflict between liberalism and liberism. In the same direction is Genovesi, who explicitly draws a line of continuity between economics and philosophy. For Genovesi Economics is synonymous with good government of the *res publica* (Genovesi, 1768, ed. 2019).

example for all is the Tennessee Valley Authority (TVA), which, with its focus on good governance, succeeded in the market and revitalised the depressed Tennessee region (Bruzzi, 2011).

In this period Rosenstein-Rodan, Roosevelt's collaborator, proposes the theory of backward areas; he operates also in Europe through the IBRD (International Bank for Reconstruction and Development) to revive Europe's depressed areas after World War II. His is the "big push" theory generated by large-scale planned industrialisation (Rosenstein-Rodan, 1943).

In Europe too, the 1929 crisis creates the conditions for a renewal of liberal thinking.

In Germany in particular, the Social Market Economy begins to emerge. The 1930s are a very important period for the shaping of the German neoliberal thought. A decisive contribution comes from the Freiburg School which in these years, animated in hiding under the Nazi regime, lays the foundations of ordoliberalism (Eucken, 1951; Eucken, 1952; Vanberg, 2011; Felice, 2008). The term *ordo* highlights the need to define a new order, capable of guiding the economy of the time. It is a new economic order, based on a market economy, far from *laissez-faire* logic, in which the State assumes a strong regulatory role.

The ordoliberal constitutional order is guided by the respect for fundamental economic freedoms, e.g., freedom of trade, and freedom of private property, as well as the principles of civil responsibility and monetary and economic stability. Freedom and responsibility thus constitute the pillars of the German neo-liberal economic thinking. The 1940s are the historical period in which German neo-liberal thinking shapes the country's economic model, contributing to what would later be considered the German economic miracle.

It is also important to highlight the role played by the Catholic Church's social doctrine, through the formulation in 1931 of the principle of subsidiarity, particularly in its horizontal meaning. This is a meaning, still little understood today, that enhances the role of private actors, hence also of enterprises, in the socio-economic systems (Caselli, 2012).

After World War II, European neo-liberal thinking consists of a few main experiences; in France, Monnet founded the Commissariat du Plan: the public actor is placed at the centre of the economic and industrial policy. National public enterprise is then adopted as a mean to support the growth of the French national champions. France in these years also animates the birth of the first European industrial policy, with the creation of the ECSC and Euratom (Monnet, 1976). Germany, on the other hand, shapes the Social Market Economy within the federal State, enhancing the role of the State over the original proposal (Bruzzi, 2022).

Italy formulates its own approach to economic-industrial development, expression of a distinct cultural and political standpoint. During this period, some Italian Schools of Enterprise Economics and Management assume a pivotal role in guiding the process.

Methodology. The research methodology is defined according to the two objectives pursued.

The study of 20th-century American, European, and Italian models of development, now underway, is based on a systematic literature review of major contributions on the subject published in both major journals and monographs.

The study of the contribution of different authors and Schools of Enterprise Economics and Management will proceed methodologically in three steps.

The first step, currently in progress, involves a systematic literature review with two primary objectives: firstly, to systematise the Italian Enterprise Economics and Management literature concerning the construction of the enterprise theory at the basis of the Italian economic miracle of the 20th century; secondly, to describe the liberal thought developed at the international level to understand the context in which the Italian experience flourished, highlighting its uniqueness.

To better organize the contributions, the research proposes to categorize the literature around several main topics. These topics are delineated based on the research issues the Schools of Enterprise Economics and Management worked on, shaping, in the second half of the last century, independently but in synergy, the cultural and scientific mosaic of our discipline:

- The enterprise as a pillar of economic development - School of Venice
- The enterprise in major industrial, institutional, and international transformation processes - School of Pavia
- The systemic-vital approach - School of Rome
- The enterprise as an institute - School of Naples
- The enterprise theory - School of Turin
- The value theory - School of Milan Bocconi
- Internationalisation and industrial districts - School of Bologna
- Marketing and competitiveness - School of Pisa
- Corporate Social Responsibility, common good, and labour - School of Genoa
- Enterprise-territory relationship - School of Cagliari

In addition to monographs, the journal *Sinergie*, founded in Verona by Panati, plays a central role in the bibliographic collection. Around this journal, an interdisciplinary scientific community emerged, expressing its own voice, and contributing to the evolution of thought during that period.

The second step involves conducting in-depth interviews with the Masters and their pupils to understand the interrelations between various topics and the theory-practice relationship. The outcome of this phase will be the development of new and original interpretative models of the current Italian scenario.

In the third step, enterprises and institutions, the main stakeholders of the project, will be engaged to share and test the proposed solutions, using qualitative research techniques (e.g., focus groups and in-depth interviews).

Results. With reference to the first objective, the outcome will be the reconstruction of the main features of the American and European socio-economic models emerging from the different national experiences, focusing on enterprises and the role they play in the pursuit of sustainable development and societal well-being.

The analysis will then be able to nourish reflection on the common features of the different experiences that can provide a humus for the European model of development and growth now being defined.

Within the scope of the research, a prominent position will be assigned to the Italian experience (second objective) with the aim to delineate the characteristics of the Italian model from both theoretical and empirical perspectives. This study will be well rooted in the Italian reality of the 20th century, which remain highly relevant today. To this end the research will systematise the contributions from the different Italian Schools of Enterprise Economics and Management.

The result of the two goals will be a proposal for an original conceptual framework that can fertilize the new model of development and growth under construction in Europe today. The aim is not to define a new paradigm/theory but to envision an interpretative framework of reality from an evolutionary standpoint, as economy and enterprises are vital systems in constant transformation (Golinelli, 2000; Barile, 2006). Italian thought not only has the potential to catalyse a new cycle of economic development within Italy, as in the past, but also to contribute, in a subsidiary logic, to the international scientific debate seeking a conceptual framework aligned with the liberal tradition and able to address current needs.

The Italian model begins to take shape in the aftermath of World War II, with significant contributions from prominent figures who serves as civil servants, influencing the design of the economic and industrial framework of the time.

First, Saraceno plays a pivotal role in defining the Italian post-war development model and shaping the public-private relationship within the Italian neo-liberal experience.

The Italian experience stands out as a unique phenomenon in the landscape of the time. Noteworthy issues and business cases exemplify this distinction.

Firstly, public enterprise in Italy has acquired specific connotations since its origin. As Saraceno recalls, the 'IRI formula' is characterised from the outset by the exclusion of the public monopoly regime. IRI is a holding company that maintained stable shareholdings in private enterprises governed by private law (Saraceno, 1975).

This choice aligns with the Italian tradition, which since the 19th century favoured the public holding company managing State shareholdings ('ente di gestione'), as opposed to the prevailing model of the economic public institution (nationalized enterprise). These are two culturally distinct models: through the nationalized enterprise, the State operates in a monopolized sector. In the holding model, the State operates in multiple sectors according to a competitive logic to activate capital accumulation processes that incentivize private actors to enter the sector.

This is an extremely important point in the current process of building the new European model: what role should the public actor play in the European economy? On this front today, the Western model that has progressively reduced the role of the public actor (with some national exceptions such as France) is confronted with the Eastern model, where public enterprise still plays a strong role as an instrument of national industrial policies. The experience of the 20th century can fuel reflection on a point that for socioeconomic development and thus for sustainability remains crucial.

In the Italian capitalist model, born under the auspices of Einaudi's liberalism, State intervention serves as a solution to the weakness of private capital, with the final goal of promoting competition. A Keynesian intervention would have been ineffective given the acute shortage of private capital; public action to expand demand would not have resulted in an expansion of investment. Thus, the public actor has to assume the risk directly, but only at an early stage. The public enterprise thus becomes the instrument of an industrial policy where the general interest intersects with managerial requirements (Saraceno, 1959 and 1975).

IRI becomes an internationally studied model, providing Italy with an opportunity to stand out on the world stage. From this humus, a sensitivity to the development issues of the Mezzogiorno region emerges, with Saraceno playing a central role in initiating the so-called pre-industrialization policies inspired by Roosevelt's experience and brought to Europe by Rosenstein-Rodan. Rosenstein-Rodan decides that IBRD funding should finance industrial projects in Southern Italy through an ad hoc authority, separate from other industrial policy initiatives and inspired by the US authorities: the Cassa per il Mezzogiorno.

The investments made during the initial period (1950-60) are largely directed towards infrastructure to catalyse subsequent industrial development. Through the "big push" theory by Rosenstein-Rodan, private investment is intended to be driven by public investment, thereby transitioning the environment from agricultural to industrial.

In this context, Saraceno addresses the North-South divide, a longstanding Italian issue that remains unresolved. Saraceno views depression in the South and stagnation in the North as two sides of the same industrial problem, emphasizing the need for a comprehensive approach that integrates investment and social policies (Saraceno, 1952). Saraceno in this perspective is a forerunner of the sustainability issues at the core of scientific and institutional debate today.

While Saraceno's objectives for enterprise good government face challenges, failing to overcome serious obstacles, it is undeniable that the policies and instruments implemented after World War II yield significant results and lay the foundation for the Italian economic miracle. For example, Italy excels in various heavy industries, e.g., in petrochemicals and steel production. At the petrochemical level, despite entering the market late and from a disadvantaged position following World War II, Italy affirms itself on the European and international markets.

ENI is established in 1953 under Mattei's leadership as part of a reorganization of all public oil activities. In line with Italian tradition, ENI functions as a holding with four subsidiaries: AGIP for fuel distribution, AGIP Mineraria for mining activities, SNAM for gas distribution, and ANIC for refining and petrochemical production.

ENI's approach also exemplifies Italian specificity. Mattei seeks to challenge the dominance of large integrated oil corporations (International Oil Companies) by entering into agreements that empowered the owner countries of oil reserves. The "Mattei formula" involves these countries in extraction activities through joint ventures, with costs and profits shared among partners. ENI assumes the risks of the venture and pays no royalties, but, if successful, joint ventures are established, with the country sharing the costs already incurred by ENI. The first agreement Mattei negotiates with this formula is with Egypt, resulting in a joint venture with ENI holding 20 percent. In 1961, Mattei signs an agreement with the USSR for oil supply in exchange for the export of synthetic rubber, initiating economic relations amid the Cold War that would be further strengthened in subsequent years (Frusciante, 2012).

Mattei's approach marks a discontinuity from the internationally dominant US corporation model based on mere competition, boosting Italy to a prominent position on the world market as Europe's refiner (Mazzaferro, 2021).

Italy's current foreign energy policy towards neighbouring Africa and Middle Eastern countries still reflects Mattei's approach. This demonstrates the long-term strength of a strategic approach to business, diverging from a purely managerial perspective (Bruzzi, 2023).

Of course, the Italian experience is not solely characterised by the public holding company. Private enterprises also exemplify an original model. One cannot fail to mention Olivetti, an enterprise that distinguished itself from US multinationals not only in the competitive arena of the IT sector but also in its ethical approach. Olivetti prioritized the growth and well-being of its employees and their families, emphasizing community building through the enterprise, which transcended mere economic dimensions (Olivetti, 1951 and 1959). Olivetti's legacy remains a lesson to the world on the political and cultural dimensions of the enterprise, deeply rooted in the Italian tradition of the teachings of various Schools of Enterprise Economics and Management. According to this tradition, enterprises are institutions designed to create wealth, economically and socially, with a long-term orientation. They operate within relational contexts that are both humus of economic activity and a product of it. In this perspective, enterprise sustainability (good government) and social well-being are mutually reinforcing (Caselli, 1995 and 1997).

Within this network of relationships, small and medium-sized enterprises, agile and flexible and therefore able of occupying global niches and of coping economic challenges, can succeed. Industrial districts, where such enterprises mutually support each other, represent another Italian specificity that in the past proved to be effective in responding to international competition (Beccattini, 1987; Lorenzoni, 1990 and 1992).

Italian scholars have played a crucial role in highlighting at the international level the uniqueness of Italy's industrial concentrations. Italian districts have become symbols of an internationalisation process that strengthens entire territories, not just individual enterprises (Lorenzoni, 1997; Usai, 2004). This underscores the strategic and value-oriented nature of enterprises (Sciarelli, 2002).

Similarly, the study approach oriented by the European vision highlights that the European integration process is a political alternative to globalisation, regulating competition and thus reducing opportunities for exploitation of unregulated arenas and gaps. Placing the study of enterprise in the context of the process of European integration means recognising, in line with the liberal tradition, the importance of creating institutional frameworks where enterprises can grow and become drivers of development (Usai and Velo, 1995; Velo, 2004). The European context moreover can be humus of innovative entrepreneurial formulas: the European Union in strategic sectors has supported new types of enterprise, such as the European Joint Undertaking, which in different strategic sectors (energy, space, medical research, etc.) has taken, in line with the principle of subsidiarity, different forms to support the different needs pursued: public-private collaboration, industry-research collaboration, economic development, technological innovation (Velo, 2007).

With reference to the research output, given the breadth of the content, it may consist of multiple publications, including both scientific articles focused on specific issues and monographs that can offer the broadest vision and the best coordination between issues. In all cases, the publications will be well anchored in current reality and will have as their main driver to contribute to the construction of the new European model of development in which enterprises and society can prosper.

Research Limitations. The limitations of this research are primarily attributed to the limited resources available. This project encompasses a broad cultural scope, necessitating the involvement of numerous academic souls rooted within the Enterprise Economics and Management scientific community. However, these limitations can be mitigated if the project acquires support from academics across various Schools, thus creating the intellectual critical mass essential for achieving the final objective.

Managerial Implications. The managerial implications of this research hold significant relevance both from the theoretical and from the practical point of view.

The proposal for a new interpretative framework will be useful to the two targets of the research: policy-makers, who today are defining the new European model of development and growth, will be able to find in the research a systematic reflection that can help define solutions consistent with European liberal and neoliberal thinking, mitigating the influence of forces against order, development, and peace.

Enterprises will be able to build strategies and practices around a platform of values, models, and contents, able of empowering each stakeholder to forge its unique entrepreneurial path within a variable geometry logic. Small and

medium enterprises constituting the Italian industrial fabric will benefit from anchoring their choices to a scientific discussion on historical models and forward-looking proposals, enabling to fortify both their sustainability and competitiveness.

Originality of the Paper. *The European economy, lagging far behind as vulnerability factors continue to worsen, urgently needs practical solutions to the many ongoing crises. The situation calls for the Academy to play its part. As in the post-World War II period a part of the Academy contributed through thought and action to the construction of the model on which the Italian economic miracle flourished, today we are called upon to contribute to the governing of the transformation taking place. To this aim this research proposes to construct an original interpretative framework consistent with the Italian tradition of the discipline of Enterprise Economics and Management and the liberal thought.*

References

- BARILE S. (ed.) (2006), *L'impresa come sistema. Contributi sull'approccio sistemico-vitale* (ASV), Giappichelli.
- BECATTINI G. (1987), *Mercato e forze locali. Il distretto industriale*, Il Mulin.
- BRUZZI S. (2011), *Impresa pubblica, sviluppo industriale e Mezzogiorno: l'attualità della lezione di Pasquale Saraceno*, Polo Interregionale di Eccellenza Jean Monnet, Università degli Studi di Pavia.
- BRUZZI S. (2022), "Federalismo ed Economia sociale di mercato: l'esperienza tedesca", *Power and Democracy*, vol. 6, n. 2, pp. 32-56.
- BRUZZI S. (2023), *Economia e strategia del settore energetico. Un nuovo ordine europeo e internazionale*, AUSE, Cacucci Editore.
- CASELLI L. (ed.) (1995), *Una buona società in cui vivere*, Studium.
- CASELLI L. (1997), "Processi di globalizzazione e democrazia economica", *Economia e politica industriale*, n. 94, pp. 39-46.
- CASELLI L. (2012), *La vita buona nell'economia e nella società*, Edizioni Lavoro.
- COMMISSIONE EUROPEA (1995), *Green Paper on Innovation*, 20 December 1995, COM(95) 688 final.
- CROCE B. AND L. EINAUDI (1957), *Liberismo e liberalismo*, ed. by P. Solari, Riccardo Ricciardi Editore.
- DRAGHI M. (2024), Speech Mario Draghi La Hulpe 16 April 2024, https://i2.res.24o.it/pdf2010/Editrice/ILSOLE24ORE/ILSOLE24ORE/Online/_Oggetti_Embedded/Documenti/2024/04/16/20240416%20Speech%20Mario%20Draghi%20La%20Hulpe%2016%20April%202024.pdf
- EUCKEN W. (1951), *I fondamenti dell'Economia politica*, Sansoni, V Edizione (1947).
- EUCKEN W. (1952), *This Unsuccessful Age or the Pains of Economic Progress*, New York, Oxford University Press.
- EURACTIVE ITALIA (2024), *Draghi propone un cambiamento "radicale" dell'intera economia europea*, 16 April, <https://euractiv.it/section/economia-e-sociale/news/draghi-propone-un-cambiamento-radicale-dellintera-economia-europea/>
- FELICE F. (2008), *L'Economia sociale di mercato*, Rubettino.
- FRUSCIANTE A. (2012), *Le vie del gas. L'Italia e le politiche energetiche dell'UE, storia e problemi*, Nuova cultura.
- GENOVESI (1768), *Lezioni di Economia civile*, ed. 2019 Vita e Pensiero.
- GOLINELLI G.M. (2000), *L'approccio sistemico al governo dell'impresa. L'impresa sistema vitale*, Cedam.
- LETTA E. (2024), *Much more than a Market*, April, <https://www.consilium.europa.eu/media/ny3j24sm/much-more-than-a-market-report-by-enrico-letta.pdf>
- LORENZONI G. (1990), *L'architettura di sviluppo delle imprese minori. Costellazioni e piccoli gruppi*, Il Mulin.
- LORENZONI G. (1992), *Accordi, reti e vantaggio competitivo*, Etas Libri.
- LORENZONI G. (1997), *Architetture reticolari e processi di internazionalizzazione*, Il Mulin.
- MAZZAFERRO W. (2021), *Gli anni d'oro della "raffineria d'Europa" (1956-1973)*, Franco Angeli.
- MONNET J. (1976), *Mémoires*, Fayard.
- MURATORI L.A. (1749), *Della pubblica felicità*, ed. 2016 Piccola Biblioteca Donzelli.
- OLIVETTI A. (1951), *L'industria nell'ordine delle Comunità*, ed. in *Le fabbriche del bene*, 2014, Edizioni di Comunità.
- OLIVETTI A. (1959), *Il cammino della Comunità*, ed. 2013, Edizioni di Comunità.
- PANATI G., GOLINELLI G.M. (1991), *Tecnica economica industriale e commerciale*, La Nuova Italia Scientifica.
- ROOSEVELT F.D. (1933), *Looking Forward*, Windmill Press.
- ROSENSTEIN-RODAN P.N. (1943), "Problems of industrialization of Eastern and South-Eastern Europe", *The Economic Journal*, vol. 53, n. 201/211, pp. 202-211.
- SARACENO P. (1952), *Lo sviluppo economico dei paesi sovrappopolati*, Universale Studium, Roma.
- SARACENO P. (1959), *Iniziativa privata e azione pubblica nei piani di sviluppo economico*, Giuffrè.
- SARACENO P. (1975), *Il sistema delle imprese a partecipazione statale nell'esperienza italiana*, Giuffrè Editore.
- SCIARELLI S. (2002), *Economia e gestione dell'impresa*, vol. 1 e 2, Cedam.
- SMITH A. (1759), *Teoria dei sentimenti morali*, ed. it Rizzoli BUR, 1995.
- SMITH A. (1776), *La Ricchezza delle nazioni*, ed. it. *Newton Compton Editori*, 2008.
- SOLE 24 ORE (2024), *Draghi: l'Europa deve reinventarsi per rispondere alle sfide di Usa e Cina*, 16 April, https://www.ilsole24ore.com/art/draghi-propono-cambiamento-radicale-l-ue-AFzPOcYD?refresh_ce
- USAI G. (2004), *Relazioni impresa ambiente e costituzione europea*, CCIAA Cagliari.
- USAI G. e D. VELO (1995), "I sistemi locali nell'Europa comunitaria", *Sinergie*, n. 36-37, pp. 83-94.
- VANBERG V.J. (2011), *The Friburg School: Walter Eucken and Ordoliberalism*, *Friburg Discussion Papers on Constitutional Economics*, n. 4/11, Walter Eucken Institut.
- VELO D. (2004), *L'impresa federale europea. Per una teoria cosmopolitica dell'impresa*, Giuffrè.
- VELO D. (ed.) (2007), *L'Europa dei progetti. Imprese, innovazione, sviluppo*, Centro Studi sul Federalismo, Giuffrè Editore.

The strength of Nutriscore in improving sustainable eating habits and well-being: bad and good news

ORNELLA BONAFEDE¹ CARMELA D'AGOSTINO² ANDREA BAZZANI³ GIUSEPPE TURCHETTI⁴
LEOPOLDO TRIESTE⁵

Abstract

This study represents the initial assessment of Nutriscore's efficacy in shaping perceptions of food healthiness in consumers. Nutritional labels are becoming increasingly common for effectively conveying messages to consumers and are adopted by institutions to develop policy strategies aimed improving collective awareness of healthy dietary habits. The efficacy of a nutrilabel is defined as the capability of Nutriscore to guide judgments and perceptions of food healthiness, overcoming barriers generated by personal characteristics and education.

To assess the evocative strength of Nutriscore versus the associated characteristics of the product, we conducted a laboratory experiment wherein we manipulated visual stimuli by misrepresenting Nutriscore labels on both healthy and unhealthy foods.

Our findings revealed a significant propensity for errors in assessing product healthiness, with half of the sample committing more than four errors out of six tests. Interestingly, these errors did not correlate with the type of food, consumers' education level, or food literacy. However, gender was a significant factor, with males making more errors than females (p-value: 0.021).

Consequently, it appears that consumers are more influenced by Nutriscore than by inherent product characteristics, underscoring the label's strong comprehensibility. However, this influence can have negative implications as Nutriscore's algorithm is built on criteria that generate paradoxical associations between scores and dietary guidelines. For instance, Nutriscore standardizes nutrient quantities based on 100g portions rather than considering consumption frequency. Future food labels should reflect healthiness relative to consumption frequency, employing simple yet effective designs akin to Nutriscore.

Methodologically, this paper proposes a straightforward approach for managing and evaluating the efficacy of both current and prospective food labeling systems.

Keywords: nutrition label; food choice; healthiness perception; public eating habits

Abbreviations

FL: food literacy

HP: Healthiness Perception

MD: Mediterranean Diet

NS: Nutriscore

Framing of the research. *Institutions are addressing the promotion of a healthy lifestyle to mitigate modifiable risk factors associated with non-communicable diseases, which account for 80% of the disease burden in Europe, totaling €1,179 billion in 2021 (Eurostat, n.d.). Encouraging well-being in Europe could potentially lead to a reduction of up to 70%, significantly alleviating social burdens, reallocating funds to other welfare initiatives, and bolstering economic productivity and growth through a healthier workforce (Public Health - European Commission, n.d.).*

Dietary patterns play a crucial role in influencing lifestyle and well-being, prompting institutions to develop policy strategies aimed at enhancing collective awareness among citizens. Although citizens' healthy eating habits are influenced

¹ Sant'Anna School of Advanced Studies, Pisa
e-mail: ornella.bonafede@santannapisa.it

² University of Pisa
e-mail: c.dagostino4@studenti.unipi.it

³ Sant'Anna School of Advanced Studies, Pisa
e-mail: andrea.bazzani@santannapisa.it

⁴ Sant'Anna School of Advanced Studies, Pisa
e-mail: giuseppe.turchetti@santannapisa.it

⁵ Sant'Anna School of Advanced Studies, Pisa
e-mail: leopoldo.trieste@santannapisa.it

by various internal and external factors (Marcelino et al., 2001; Remick, 2009), institutions can enhance public knowledge by adopting policies that convey messages to promote healthy food choices.

Since 2011, the European Commission has mandated the inclusion of nutritional tables on product packaging to display quantitative product characteristics, such as the amount of carbohydrates, protein, fat, saturated fat, and salt. However, subsequent studies have shown that this instrument may not be accessible to everyone, particularly those without expertise in the field (Storcksdieck genannt Bonsmann, 2020). Consequently, front-of-pack nutritional labels have gained importance, with many countries adopting logos on a voluntary basis. In Europe, 63% of member states have implemented various logos, with Nutriscore being commonly adopted by Belgium, France, Germany, Spain, Luxembourg, and the Netherlands (European Commission, 2020).

Front-of-pack nutritional labels are categorized into three classes: "directive," "semi-directive," and "non-directive," each providing consumers with varying levels of interpretation regarding the healthiness of the product (Donini et al., 2023). Nutriscore, belonging to the directive category, utilizes a color-coded system accompanied by alphabetic letters from A (green) to E (red) to indicate the product's nutritional quality. Despite its graphical clarity, the algorithm used to generate Nutriscore scores has sparked controversy, as it may yield paradoxical scores compared to national guidelines based on frequency advice, potentially leading to consumer misinterpretation.

Despite the contentious nature of the scoring algorithm, the Nutriscore logo effectively communicates nutritional information in a clear and straightforward manner, making it accessible across different socio-economic statuses (Talati et al., 2019). This characteristic is crucial for disseminating nutritional information to the entire population.

Since the nutritional label is presented on the front of packaging, a lot of researchers have investigated how changing the position of nutritional label changes the visual attention of consumers (Dan J & Robert W, 2011). The same methodology has been adopted to compare which nutritional label was more effective in catching the consumer attention (Siegrist et al., 2015). Although from the literature we know that internal characteristics can also play a role in shaping dietary habits. For example, being female increases the probability of having higher food literacy and paying more attention to nutritional characteristics than men (Trieste et al., 2020). Also, the personal propensity to be more active at a certain time of the day (chronotype) can change eating habits; indeed, evening types appear more inclined to adopt an unhealthy diet (Teixeira et al., 2022).

Purpose of the Paper. This study aims to investigate the effectiveness of Nutriscore in shaping consumers' perceptions of food healthiness.

The relevance of this investigation stems from two main objectives: firstly, the widespread adoption of Nutriscore may influence the food perceptions of many citizens, especially if it were to be adopted by additional states. Secondly, the controversial algorithm used to calculate Nutriscore often produces scores misaligned with Mediterranean dietary guidelines, which have proven to be a preventive measure against non-communicable diseases (Tsigalou, 2020).

We examine three dimensions to evaluate the efficacy of the Nutriscore logo: (i) visual attention, (ii) influence on perception or judgment of food healthiness, and (iii) independence from personal characteristics such as education level, food literacy, and other consumer traits.

To guide our study, we formulate the following research questions:

1. Can personal characteristics such as age, sex, BMI, chronotype, adherence to the Mediterranean diet, probability of developing eating disorders, and declarative approach to choosing the healthiness of logos influence visual attention?
2. Does visual attention to the logo affect error rates?
3. Are error rates influenced by personal characteristics?
4. Does the Nutriscore logo impact error rates?

To the best of our knowledge, this paper represents the first attempt to assess the efficacy of Nutriscore in influencing perceptions of food healthiness.

Methodology. In our study the effectiveness of a nutritional label has been measured using three different criteria:

1. Visual attention.
2. The ability to influence judgment or perception of the healthiness of the associated food.
3. Independence of 1-2 from educational level, food literacy and, in general, the personal characteristics of the consumer. Indeed, beyond the confines of nutrients tables, the added value of a nutritional label lies in its ability to be understood by both educated and non-skilled consumers.

To assess visual attention, we employed eye-tracking technology, a neuroscientific tool used to measure how often and for how long participants' gazes were drawn to the Nutriscore logo. The adoption of this neuroscientific tool was crucial to assess if the consumers were attracted differently based on their profiling characteristics and also to ensure they saw the Nutriscore logo on the product packaging we showed them. This methodology has been previously utilized to investigate the logo's impact on consumer attention (Gastón Ares, 2013; Laura Bix, 2015).

The eye tracker Tobii tracks the gaze of the eye on a visual stimulus. The tool is non-invasive, and the participant does not even notice it since the black bar of eye tracker is positioned at the bottom margin of the computer screen and it blends with the color of the computer.

The derived variables were the total number of fixations on the label and product, and the total duration of fixations on the Nutriscore and product. Since the fixation area is significantly smaller for the logo than for the product, we considered the average per-fixation duration of the logo and the product when comparing attention to the logo and the product, respectively.

Since one the potential strength of a nutritional label is its ability to influence the perception of product healthiness, we detected whether the principal driver of perception was the label or the characteristics of the product by modifying the nutritional labels to induce incorrect judgments. The strength of Nutriscore is represented by the overall percentage of mistakes.

We selected 8 food packaging items, considering 4 healthy and 4 non-healthy products (defined as “healthy” those foods with a recommended daily frequency and “unhealthy” those with a recommended frequency of 1-2 times per week, according to the Guidelines of the Mediterranean Diet (MD), see Willett, 1995). Once we obtained the correct Nutriscore scores (ranking from A to E) using the related algorithm, we modified them, shifting each score by two positions: from B to D, in the case of healthy products, and from D to B in the case of non-healthy foods. We did not select products that were originally scored as A, E, and C.

The third criterion for evaluating the strength of Nutriscore involves correlating the percentage of errors obtained with personal characteristics. A lower correlation indicates a stronger performance of the nutrition label.

Experimental design

The study comprises two parts.

In the first session, we profiled consumers who consented to participate in the study through an online survey. The survey lasted for 13 minutes and requested anthropometric variables and validated questionnaire essential for understanding if personal characteristics could be linked to attitude towards packaging (visual attention) and personal characteristics. The survey was articulated into:

A) a series of validated questionnaires aiming to assess:

- declarative or substantial food literacy (SFLQ), (Corinna Gréa Krause et al., 2018)
- risk of developing eating disorder (SCOFF), (Francesca Solmi et al., 2015), adopted to screen for eating disorders, as niche literature has investigated the link between eating disorders and the differing attitudes towards food labels (K. E. Giel et al., 2011).
- Short Morning Evening Questionnaire (RMEQ) (Vincenzo et al., 2006), since literature suggests that evening-chronotypes are more likely to prefer unhealthy dietary pattern (Teixeira et al., 2022).
- adherence to the Mediterranean Diet (MEDAS) (Schröder H et al., 2011)

B) a set of additional items: height and weight (used to calculate BMI), sex, age, education (), and weekly frequency of food shopping, knowledge of NS.

In the second session, we examined visual attention and quantified the influence of Nutriscore on food perception.

To study visual attention, we conducted an eye-tracking experiment displaying eight Nutriscore-labeled food items on a computer screen. These items comprised three healthy products scored as B and three unhealthy products scored as D. Recognizing that the definition of “healthy food” varies depends on dietary patterns (Plasek Brigitta et al., 2020), we categorized the items based on the frequency of Mediterranean diet definition. We manipulated the scores by changing B scores to D and D scores to B. To minimize the likelihood of subjects detecting the programmed errors, two images with the correct labels were provided.

After each presentation, participants rated the healthiness of the foods shown on a 1-5 Likert scale. At the end of the experiment, each participant provided feedback on whether the product or the label guided their evaluation better. The discrepancy between the healthiness assessed by participants and the real value attributed by the Mediterranean diet represented the error in perception. Manipulating the logo was essential to verify the logo’s strength in shaping food perception. A higher percentage of error indicated greater trust that consumers had in the Nutriscore logo.

Results. Data analysis was conducted using R, version 4.2.2.

The independency of gaze metrics and the percentage of errors from personal profiling was assessed by comparing the the medians of the total number of fixations and total fixation duration associated with Nutriscore and the product across different groups stratified by the profiling variables that defined the study population.

Independency of error percentage in the different groups was determined through a χ^2 test.

A p.value >0.05 for the Kruskal-Wallis tests and the χ^2 test, respectively, indicates that gaze metrics and the percentage of errors do not depend on consumer’s skills and education.

We collected a sample of 57 subjects with a mean age of 26.08 (SD= +7.65) with a balanced representation of 54% female and 46% male.

From the first session of the study, we had the opportunity to profile our sample, as summarized in Tabel 1 and Table 2.

Tab. 1: discrete variable of personal profiling

	Number (%)
Sex	
• Woman	31 (54%)
• Man	26 (46%)
Education	
• High school	22 (38,6%)
• Degree	30 (52,6%)
• Post-degree	5 (8,8%)
Driver:	
• Personal knowledge	30 (52,6%)
• Nutriscore logo	27 (47,4%)
Prior knowledge of the Nutri-Score	
• Yes	18 (31,6%)
• Not	39 (68,4%)

Tab. 2: continue variable of personal profiling

	Mean ($\pm$ SD)	Max.	Min.	Median
Age	26.2 ($\pm$ 7.8)	62	19	24
MEDAS	7.5($\pm$ 2.05)	12	4	7
SCOFF	2.1 ($\pm$ 1.4)	5	0	2
BMI	22.3($\pm$ 3.16)	33.6	17.36	22.1
rMEQ	14.5($\pm$ 2.97)	20	7	15
SFLQ	34.7($\pm$ 6.43)	47.4	17.6	34

MEDAS: asses the adherence to mediterranean diet. From 0 (lower score of adherences) to 14 (higher score of adherences)

SCOF: measure the probability of being more likely to develop eating disorders. From 0 to 5.

BMI: set the range of normal weight and non-norm weight. From 18.5 to 24.9 is normal weight, under 18.5 is underweight, over 25 is overweight, over 30 is obesity.

rMEQ: set the range of chronotype: 4–10 evening-type; 11–18 intermediate-type; 19–25 morning-type

We investigated the relationship between individual differences and sample characteristics.

Interestingly, women were more likely to adhere to the Mediterranean diet (p -value=0.02). On one hand, this result should be interpreted as females being more conscientious about their diet, thus adhering more closely to Mediterranean concepts. On the other hand, it suggests that this conscientiousness can sometimes manifest as excessive concern, potentially laying the groundwork for eating disorders; indeed, women also exhibited a higher probability of developing eating disorders (p -value=0.0025), as extensively documented in the literature (Hsu, 1989).

Additionally, individuals with high adherence to the Mediterranean diet (highest level of MEDAS) reported judging products based on their own knowledge (p =0.005) and being familiar with the Nutriscore logo (p =0.034).

To address the research questions, we divided the results into three sections: firstly, the relationship between personal characteristics and visual attention; secondly, the relationship between personal characteristics and the rate of errors committed in evaluating the healthiness of products; and finally, the rate of errors and visual attention.

Overall, the product received a higher number of fixations and longer duration of fixation, as shown in Table 3.

Tab. 3, Description of the number/duration of fixation for product and for logo:

Gaze metrics	Logo	Product
Average number of total fixations	44.88 ($\pm$ 21.95)	159.9 ($\pm$ 35.34)
Average of total fixation duration (ms)	296.7 ($\pm$ 175.11)	1785 ($\pm$ 2365.24)
Average number of fixations on 8 stimuli	5.61 ($\pm$ 2.74)	159.8772 ($\pm$ 35.34527)
Average fixation duration on 8 stimuli	1657.064 ($\pm$ 1086.077)	6106.154 ($\pm$ 1915.872)

Attention and personal characteristics

We also assessed if personal characteristics (e.g., age, sex, education, Body Mass Index, etc.) could influence the duration of gaze spent on the Nutriscore logo or on the food product image, both displayed on the front of the packaging.

We found a statistically significant relationship between individuals who reported judging the product based on their own knowledge and those who did not. Specifically, individuals who judged the product based on their own knowledge looked at the product image several times more frequently (p -value: 0.04) and for longer durations (p -value: 0.009). Additionally, the data indicates that individuals with higher levels of education (undergraduate and postgraduate) spent more time (p -value= 0.02) looking at the logo compared to those with lower levels of education (high school).

Errors and attention

Comparing attention and errors, subjects who made numerous errors, as expected, had a lower total fixation count (p -value: 0.005) and shorter duration of fixation (p -value: 0.0278) on the food stimuli images than subjects who made fewer errors.

Attributed to incorrect labels, the frequency of judgment errors regarding the healthiness of products was significantly higher in males than in females (p -value of the Kruskal-Wallis test = 0.021). Subjects adhering to a Mediterranean diet (i.e., with a high MEDAS score) made fewer errors (p -value of t -test = 0.06). Individuals who claimed to make choices based on their own knowledge made fewer errors (p -value of Kruskal test = 0.000).

BMI (p -value = 0.994), propensity for developing eating disorders (p -value = 0.513), chronotype (p -value = 0.759), education (p -value = 0.540), and the level of acquired food literacy (p -value = 0.467) did not correlate with the number of errors. These data highlight the effectiveness of Nutriscore in influencing judgments about product healthiness, regardless of certain personal characteristics relevant in traditional nutritional labeling, such as food literacy and education. If the goal of Nutriscore is to mitigate personal differences and educational barriers, it has indeed achieved its objective.

Research limitations. The study's findings are indicative of a digital environment, such as online shopping. Our future objectives include exploring outcomes in a physical setting to compare consumer reactions. Regarding the sample demographics, the mean age of 26.2 suggests that the results are representative of a specific demographic within the population. We aim to enhance the sample to obtain results that encompass a broader population. The research is work-in-progress.

Managerial implications. Nutriscore appears to be highly intuitive and effectively conveys the perceived healthiness or unhealthiness of food. However, despite its apparent simplicity, the algorithm underlying Nutriscore can inadvertently create paradoxes that consumers may not readily discern. These misunderstandings have the potential to lead to unhealthy dietary choices, undermining the label's intended purpose and leaving the challenge of promoting nutritional awareness unresolved.

Based on the findings of the study, it is imperative to address the gaps inherent in the algorithm, considering various aspects. For instance, the algorithm should consider the food category to which a product belongs, aligning with dietary principles such as the Mediterranean diet. Otherwise, foods from vastly different categories may receive the same score, leading to confusion. For example, a vegetable pizza, zero-calorie Coca-Cola, and chips might all receive a B grade, despite their disparate nutritional profiles and consumption frequencies.

The present study also highlights the urgency to revise the algorithm behind the logo and lays the foundation for investigating how to implement the algorithm to create an updated version that avoids the production of paradoxical scores. The innovation of the algorithm should take in account that the final score of the product should align with the Mediterranean diet, as it is currently, the most studied dietary pattern and has been revealed to be the most successful in combating Non-Communicable Diseases. If the new algorithm of Nutriscore aligns with these indications, it would be a very effective logo.

Originality of the paper. To the best of our knowledge, this paper represents the first investigation into the strength of NutriScore, offering a general prospective by testing the effectiveness of nutriscore on stratified target groups.

References

- GIEL K.E., FRIEDERICH H.C., TEUFEL M., HAUZINGER M., ENCK P., ZIPFEL S. (2011), "Attentional Processing of Food Pictures in Individuals with Anorexia Nervosa-An Eye-Tracking Study," *Biological Psychiatry*.
- GRAHAM D.J., JEFFERY R.W. (2011), "Location, location, location: eye-tracking evidence that consumers preferentially view prominently positioned nutrition information," *Journal of American Dietetics Association*.
- KRAUSE C.G., BEER-BORST S., SOMMERHALDER K., HAYOZ S., ABEL T. (2018), "A short food literacy questionnaire (SFLQ) for adults: Findings from a Swiss validation study," *Appetite*.
- NATALE V., ESPOSITO M.J., MARTONI M., FABBRI M. (2006), *Validity of the reduced version of the Morningness–Eveningness Questionnaire*.
- PLASEK B., ZOLTÁN L., ÁGOSTON T. (2020), "Factors that Influence the Perceived Healthiness of Food—Review," *Nutrients*.
- SCHRÖDER H., FITÓ M., ESTRUCH R., MARTÍNEZ-GONZÁLEZ M.A., CORELLA D., SALAS-SALVADÓ J., LAMUELA-RAVENTÓS R., ROS E., SALAVERRÍA I., FIOL M., LAPETRA J., VINYOLÉS E., GÓMEZ-GRACIA E., LAHOZ C., SERRA-MAJEM L., PINTÓ X., RUIZ-GUTIERREZ V., COVAS M.I. (2011), "A short screener is valid for assessing Mediterranean diet adherence among older Spanish men and women," *The Journal of Nutrition*.
- SIEGRIST M., LEINS-HESS R., KELLER C. (2015), "Which front-of-pack nutrition label is the most efficient one? The results of an eye-tracker study," *Food Quality and Preference*, vol. 39, pp. 183–190.
- SOLMI F., HATCH S.L., HOTOPF M., TREASURE J., MICALI N. (2015), "Validation of the SCOFF Questionnaire for Eating Disorders in a Multiethnic General Population Sample," *International Journal of Eating Disorders*.
- TEIXEIRA G., GUIMARÃES K.C., SOARES A.G.N.S., MARQUEZE E.C.M., CLÁUDIA R.C., MOTA M.C., CRISPIM C.A. (2022), "Role of chronotype in dietary intake, meal timing, and obesity: a systematic review," *Nutrition Review*.
- TRIESTE L., BAZZANI A., AMATO A., FARAGUNA U., TURCHETTI G. (2020), "Food literacy and food choice – a survey-based psychometric profiling of consumer behaviour," *British Food Journal*.
- WILLETT WC, S. F. T. A. D. G. F.-L. A. H. E. T. D. (1995), "Mediterranean diet pyramid: a cultural model for healthy eating," *The American Journal of Clinical Nutrition*.

Does organic food consumption impact subjective well-being? A mediation-moderation approach

CELSO AUGUSTO DE MATOS¹ MARLON DALMORO² MARCIA DUTRA DE BARCELLOS³

Abstract

Does eating organic food make people feel good? If so, under what circumstances? Previous research has suggested an association between happiness/pleasure and the consumption of organic food. Health concerns have been demonstrated as a moderator. However, there is still a need to understand better the boundary conditions for the effects of organic food consumption (OFC) and subjective well-being (SWB). More specifically, what variables can influence this process? For instance, which mediators and moderators can improve our understanding of the OFC-SWB relationship? This research aimed to propose and test a model that explains the OFC-SWB relationship, considering the mediation effect of emotional process (self-enhancement) and the potential moderation of food-related lifestyles (FRLS), health concerns, environmental concerns, and locavorism. The model is tested based on data from a survey of 581 organic food customers. Our findings suggested a significant mediating role of self-enhancement between OFC and SWB. Moreover, FRLS and locavorism were significant moderators for the path OFC-self enhancement. On the other hand, health concerns and environmental concerns were not significant moderators. Finally, the study also shows that consumers who prepare their meals have higher scores on the index of organic food consumption. The same occurs for older and more educated consumers. The research finishes with a theoretical discussion and practical implications.

Key words: organic-food; well-being; self-enhancement; locavorism; food-related lifestyles; health concern

Framing of the research. Responsible production/consumption has been one of the sustainable development goals (SDG 12) proposed by the United Nations since its 2015 meeting (UN 2020). Indeed, mass production patterns are becoming unsustainable and creating severe environmental problems, e.g., climate change and global pollution, and hence there is a need to understand better the drivers of more sustainable choices (e.g., Betzler et al. 2022; D'Souza et al. 2022). Food consumption is a key issue in sustainable development goals due to its impact on individual and public health, natural resources, social cohesion, and the economy (Kerr et al. 2023; Schleiffer et al. 2022). Thus, to reduce the environmental impacts of food production and consumption requires developing more sustainable alternatives, such as organic food and the agroecology system (Jürkenbeck et al. 2023; Kerr et al. 2023).

Sustainable food involves mainly healthy and environment-oriented alternatives in substitution of conventional and agrochemical-intensive agri-food options (Kerr et al. 2023). Organic food is one of these alternatives because it is free of pesticides, synthetic fertilizers, or products that can cause damage to health, in addition to using techniques and procedures that respect the environment and preserve the quality of the food (Kerr et al. 2023). Hence, organic food consumption deserves attention as one of the more prominent and global consolidated alternatives toward sustainable food consumption (Rizzo et al. 2020; D'Souza et al. 2022).

In this sense, following previous studies, organic food is considered a healthy and environmental-oriented food production mode (Reganold and Wachter 2016). However, previous studies about organic food consumption present mixed findings regarding how people express their health and environmental concerns in their choices (Apaolaza et al. 2018; Tandon et al. 2020). Indeed, considering that an individual's purchase and consumption signal his/her lifestyle to people in his reference group (Jung et al. 2020), it is common for consumers to choose products/services that promise greater care for the planet, especially when this choice appears in public (Semila and Panda 2019).

In addition, a few research has shown that organic food consumption is associated with individuals' happiness and well-being. For instance, Apaolaza et al. (2018) supported the influence of organic food consumption on subjective well-being (OFC-SWB link). They argued that such an effect could be influenced by both cognitive processes (e.g. healthy diet beliefs) and emotional mechanisms (e.g. label effect). Moreover, such effects were stronger for consumers who presented a higher health concern. The study suggested that the organic claim acts as a heuristic cue guiding consumers to believe that the product will increase their well-being. Indeed, recent study has called attention to pleasure mechanisms as predictors of organic food consumption (e.g., Cao, Zheng & Li, 2024). In a similar fashion, Nguyen et al. (2024) explored

¹ e-mail: celso.matos@tecnico.ulisboa.pt

² e-mail: marlon.dalmoro@ufrgs.br

³ e-mail: marcia.barcellos@ufrgs.br

the OFC-SWB link by examining the subjective well-being impact on pro-environmental consumption behaviors. However, the authors' conclusion describes the role of moderators (e.g., environmental concerns) in explaining the OFC-SWB relationship. In complement, mediators like consumers' expectations for quality attributes and sustainability can influence the relationship between organic food purchase decisions and the subjectively perceived benefits, as argued by Martini et al. (2024), based on a qualitative study of Italian consumers. In dialogue with these previous studies, we concentrate efforts on exploring the boundary conditions between purchase decisions and subjective perception by exploring the concerns, ideological-related lifestyles, and subjective motivations that operate these boundary conditions.

Purpose of the paper. Based on the previous discussion, the current study aims to (i) advance the investigation on the non-cognitive process that acts as a possible mediator between organic food consumption and the consumer's perceived well-being, and (2) test the moderating role of additional variables not considered in previous studies, namely food-related lifestyle (FRLS), locavorism, environmental and health concerns. A conceptual model was developed based on the literature review. The proposed model is presented in Figure 1.

Methodology. The research was composed of four stages. First, a literature search was carried out to identify studies that had measured the constructs of this research. Following the literature search, we filtered a set of empirical studies that supply consistent scales to measure each construct.

Second, we structured the questionnaire and the scale items for each construct of the proposed model, as described below:

Organic food consumption was measured by four questions that evaluated the individual's behavior regarding the purchase and consumption of organic foods, namely: a) How many times a month do you usually buy organic food? (median = 4); b) On average, how much money do you spend monthly on organic food? (median = US\$ 24); c) How long have you been thinking about organic food as an option? (median = 3.0 years); d) Which of these organic foods do you buy most often? (list with 17 options). A scale was created that first added the answers (min = 1; max = 17; median = 6) and then standardized with a z score.

The reported behavior of organic consumption was preferred, rather than the commonly used behavioral intentions, to minimize the common method bias (MacKenzie and Podsakoff 2012), using the same approach as Bravo et al (2013). Other studies have also adopted a similar approach, i.e., measuring the reported behavior construct (Azzurra et al. 2019; Nam 2020; Pestek et al. 2018; Liang 2014). Each item on this scale was converted to a z score to standardize the scale (Malhotra and Birks 2007).

Well-being was measured at the beginning of the questionnaire with 7 questions, on a scale varying from 1 = no part of the time, to 7 = all the time. The anchor was "In the last 30 days, to what extent did you feel..." and the items were Happy, In a good mood, Extremely happy, Calm, Pacific, Satisfied. The seventh item was, "In general, how do you rate your satisfaction with your life? (Terrible 1 2 3 4 5 6 7 8 9 10 Excellent). This scale was adapted from Howell et.al. (2013).

Self-enhancement was measured by 4 items adapted from Gong (2018), on a Likert scale (1 = completely disagree; 7 = completely agree), with the following statements: I feel excited when I buy organic products, My self-esteem improves when I buy organic food, I have more respect for myself when I buy organic products, Buying organic food makes me feel good in front of other people.

Food-related lifestyle (FRLS) was measured by 4 items adapted from the scale of Wycherley (2008). We focused on the dimension of "ways of shopping" because it provides content for the cognitive evaluations/beliefs regarding food consumption. A seven-point Likert scale was used with 1 = completely disagree and 7 = completely agree. The following items were used: a) For me, information about food is very important. I need to know what the food contains; b) I usually read and compare the labels of different brands before deciding on a purchase; c) Shopping for food is fun for me (reverse); d) I usually make a shopping list before going to buy food.

Locavorism was measured by 3 items adapted from Reich, Beck, and Price (2018), with the following statements: a) Food produced locally (e.g. your city) is more nutritious than those that arrive from other regions or outside the country; b) I don't trust foods that were produced by large companies (e.g. multinationals); c) I like to support local farmers whenever possible. Responses were given on a seven-point Likert scale.

Health concern was measured by 3 questions, using a seven-point Likert scale, based on Guilabert and Wood (2012) with the items: a) I worry about health risks and try to take steps to avoid them; b) I try to avoid health problems before I experience any symptoms; c) I care about the nutritional value of the food.

Finally, environmental concern was measured by 3 questions, based on a seven-point Likert scale, from Chen (2007), with the items: It is important to me that the food I eat daily has been ... a) prepared in a way that does not harm the environment; b) ... produced in a way that did not upset the balance of nature; c) ... packaged in an environmentally friendly manner.

The final section of the questionnaire included demographic data such as age, gender, income, and education level.

We pre-test the questionnaire with ten organic food consumers before starting the data collection. Finally, it was applied to a sample of food buyers at an organic farmers market in Porto Alegre, the capital city of the southern state of Rio Grande do Sul in Brazil. The south of Brazil is a relevant context to study organic food consumption because this region has a higher level of organic food consumption than other Brazilian areas (Organis, 2022). This market is a premier marketplace for organic food, where both farmers and consumers are connected with agroecological principles involving environmental concerns (Dalmoro et al. 2020). Data were collected from a non-probabilistic sample of consumers who agreed to answer the questionnaire while visiting the farmer's market. In collecting data in a real scenario of organic food shopping, we could access real organic consumers, fostering external validity. The questionnaire was

available on tablets, and participants self-completed the questionnaires after instructions from the researchers. The survey obtained a sample of 581 participants.

In the third stage, data preparation was carried out. After checking for missing and outliers, 2 cases were discarded. Therefore, a total of 579 participants were analyzed in the following steps. Then the reliability of the scales was analyzed. Overall, all scales achieved Cronbach's alphas greater than 0.60, thus supporting the reliability criteria (Malhotra and Birks 2007). Only in the organic food consumption factor, the Cronbach's alpha was relatively lower (0.63), which is consistent with the argument that formative scales do not follow the logic of inter-item correlations and, hence, Cronbach's alpha is not a requirement (Jarvis et al. 2003).

Finally, in the fourth step, our study presents the descriptive statistics and sample profile, correlation analysis, and the test of the proposed model. Data were analyzed using SPSS and the Partial Least Square (PLS) technique for structural equation modelling.

Results. The sample was represented by 60% female; 38% between 21 and 30 years old, followed by the group between 31 and 40 years old (21%). There was similar participation of single individuals (46%) or in a stable relationship (44%). A total of 54% had completed college or postgraduate education. A total of 42% of the sample has a personal income of up to US\$ 400 per month, and 77% had an income of up to US\$ 1,000 per month.

The dependent variable of this study, the consumption of organic food showed that on average, the participants purchased four times a month. Regarding the monthly expenditure on organic foods, a median of 24 dollars was observed, indicating that half of the sample spends at least 24 dollars per month on organic foods. Overall, the participants have a good experience purchasing organic food, since 50% or more started thinking about organic food at least three years ago. The average for this item was 5.8 years. On average, six items out of the seventeen presented, were purchased more frequently, namely: bananas (71%), tomatoes (62%), lettuce (60%), carrots (54%), eggs (50%), broccoli (46%), and apples (40%).

An analysis of the correlations indicated that the organic-food consumption score presented a significant correlation with all the remaining variables, with stronger values for environmental concern (.36) and health concern (.32), with all correlations significant at the 0.01 level (see Table 1). The same was true for well-being, which presented higher correlations with health concern (.23) and FRLS (.23). Locavorism presented relatively higher correlations with self-enhancement (.52) and environmental concern (.50).

Tab. 1: Correlations

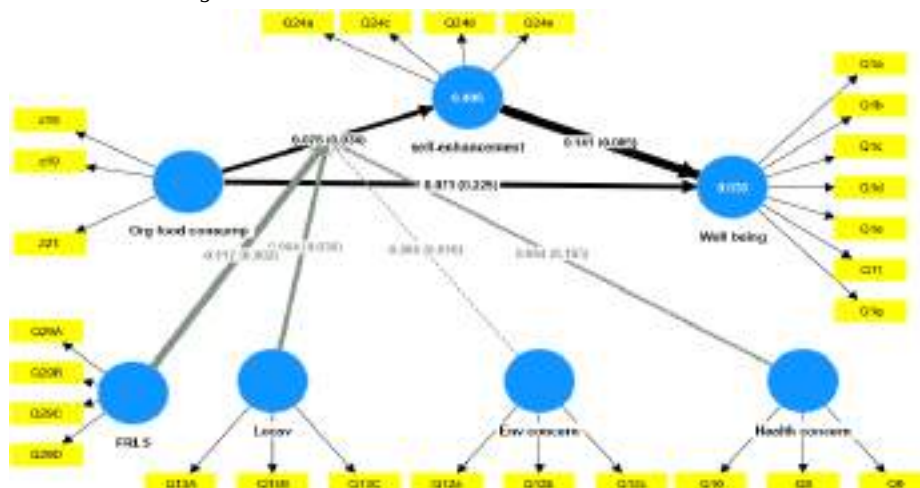
	1	2	3	4	5	6	7
1. Wellbeing	1						
2. Organic food consumption	.12**	1					
3. Self enhancement	.14**	.23**	1				
4. FRLS-ways of shopping	.23**	.14**	.37**	1			
5. Locavorism	.17**	.28**	.52**	.26**	1		
6. Health concern	.23**	.32**	.33**	.29**	.32**	1	
7. Environmental concern	.17**	.36**	.46**	.29**	.50**	.36**	1

Note - ** correlation is significant at the 0.01 level; FRLS = food-related lifestyles

Based on these findings, the following analysis was to test the structural relationships between the variables, as predicted by the proposed model (see Figure 1). From the main findings of the model test, we can highlight four issues.

First, self-enhancement was a significant full mediator between organic food consumption and well-being, especially because the direct effect was not significant.

Fig. 1: Theoretical Framework and Structural Model



Second, FRLS presented a significant moderating effect, with a negative coefficient suggesting an attenuation effect, i.e., that the higher the evaluations in FRLS (meaning greater cognitive aspects, such as product information) the lower the influence of the organic food consumption in the self-enhancement, which is in agreement with expectations. In other words, for those customers of organic food who follow a more cognitive route (give high importance to product information), there will be a smaller influence of organic food consumption on self-enhancement, which is in agreement with the “label effect” proposed by Apaolaza et. al. (2018).

Third, locavorism was also a significant moderator in the link between organic food consumption and self-enhancement. The positive coefficient suggests that locavorism strengthens the influence of organic food consumption on self-enhancement, i.e. the higher the locavorism, the stronger the link between OFC and self-enhancement.

Finally, health concerns and environmental concerns, on the other hand, did not present significant moderating effects.

Research limitations. Finally, the current research also has some limitations. For example, only farmers’ market shoppers were surveyed. Future studies may also include consumers in different purchasing contexts, such as supermarkets. For that, researchers can explore specific mediators like the role of conspicuous consumption, given that organic food is usually positioned as a premium product. In addition, the observational approach (survey) could be complemented with additional studies based on an explanatory strategy (experiment) by manipulating the moderators/mediators of the proposed model, as well as different scenarios for organic food purchases.

Managerial implications. Considering the implications for practice, there are two main aspects here that could be highlighted. First, the promotion of organic food could work to increase the consumer knowledge about the origin of the food, since higher importance given to the food produced locally (locavorism) is associated with higher organic food consumption. Second, the promotion of organic food could also use the peripheral route of advertising (Petty & Cacioppo, 2012), making use of positive emotions, for instance, and calling attention to the fact that organic food is not only healthy but makes you feel better.

Originality of the paper. Previous studies have demonstrated the influence of organic food consumption on consumers’ well-being (OFC-SWB). The current research addresses this issue and advances the discussion in two different ways. First, the model tested in this study examines moderators (i.e. food-related lifestyle and locavorism) that have not been analyzed in previous research about the OFC-SWB relationship. Second, the model also contributes to the extant literature by investigating the non-cognitive process (e.g. label effect) that acts as a mediator between organic food consumption and the consumer’s perceived well-being and thus supports the role of self-enhancement as a mediator in the OFC-SWB link.

As a final remark, our study details the ‘circumstances’ that explain the association between happiness and pleasure (Apaolaza et al. (2018) related to organic food consumption (Nguyen et al. 2024). In particular, the boundary conditions between OFC-SWB are not supported by itself, but improved by a set of mediators and moderators that influence the relationship. In the case of organic food consumption, ideological-related lifestyles (FRLS and locavorism) and subjective motivations (self-enhancement) have a higher impact on this boundary condition than individual concerns.

References

- APAOLAZA V., HARTMANN P., D’SOUZA C., LÓPEZ C.M. (2018), “Eat organic-Feel good? The relationship between organic food consumption, health concern and subjective wellbeing”, *Food Quality and Preference*, vol. 63, pp. 51-62.
- AZZURRA A., MASSIMILIANO A., ANGELA M. (2019), “Measuring sustainable food consumption: A case study on organic food”, *Sustainable Production and Consumption*, vol. 17, pp. 95-107.
- BETZLER S., KEMPEN R., MUELLER K. (2022), “Predicting sustainable consumption behavior: knowledge-based, value-based, emotional and rational influences on mobile phone, food and fashion consumption”, *International Journal of Sustainable Development & World Ecology*, vol. 29, n. 2, pp. 125-138.
- BRAVO C.P., CORDTS A., SCHULZE B., SPILLER A. (2013), “Assessing determinants of organic food consumption using data from the German National Nutrition Survey II”, *Food quality and Preference*, 2B8(1), pp. 60-70.
- CAO D., ZHENG Y., LI G. (2024), “Understanding food pleasure in organic consumption: the moderating effects of trust within the theory of planned behavior”, *British Food Journal*, vol. 126, n. 2, pp. 898-919.
- CHEN M.F. (2007), “Consumer attitudes and purchase intentions in relation to organic foods in Taiwan: Moderating effects of food-related personality traits” *Food Quality and Preference*, vol. 18, n. 7, pp. 1008-1021.
- D’SOUZA C., TAGHIAN M., APAOLAZA V., HARTMANN P., BROUWER A., CHOWDHURY B. (2022), “Consumer self-confidence in green foods: An investigation of the role of ecolabels using the theory of planned behavior and market segmentation”, *Journal of International Food & Agribusiness Marketing*, vol. 34, n. 5, pp. 457-487.
- DALMORO M., MATOS C.A., BARCELLOS M.D. (2020), “Anticonsumption beyond consumers: The role of small organic producers in environmentally oriented anticonsumption”, *Psychology & Marketing*, vol. 37, n. 2, pp. 291-307.
- GONG T. (2018), “Customer brand engagement behavior in online brand communities”, *Journal of Services Marketing*, vol. 32, n. 3, pp. 286-299.
- GUILABERT M., WOOD J.A. (2012), “USDA certification of food as organic: An investigation of consumer beliefs about the health benefits of organic food”, *Journal of Food Products Marketing*, vol. 18, n. 5, pp. 353-368.
- HOWELL A.J., PASSMORE H.A., BURO K. (2013), “Meaning in nature: Meaning in life as a mediator of the relationship between nature connectedness and well-being”, *Journal of Happiness Studies*, vol. 14, pp. 1681-1696.
- JARVIS C.B., MACKENZIE S.B., PODSAKOFF P.M. (2003), “A critical review of construct indicators and measurement model misspecification in marketing and consumer research”, *Journal of Consumer Research*, vol. 30, n. 2, pp. 199-218.

- JUNG H.J., CHOI Y.J., OH K.W. (2020), “Influencing Factors of Chinese Consumers' Purchase Intention to Sustainable Apparel Products: Exploring Consumer Attitude-Behavioral Intention Gap”, *Sustainability*, vol. 12, n. 5, pp. 1770.
- JÜRKENBECK K., HÖLKER S., SPILLER A. (2023), “New label, new target group? The case of the organic label and the Nutri-Score”, *Organic Agriculture*, vol. 13, n. 2, pp. 221-235.
- KERR R.B., POSTIGO J.C., SMITH P., COWIE A., SINGH P.K., RIVERA-FERRE M., NEUFELDT H. (2023), “Agroecology as a transformative approach to tackle climatic, food, and ecosystemic crises”, *Current Opinion in Environmental Sustainability*, vol. 62, 101275.
- LIANG A.R. (2014), “Enthusiastically consuming organic food: An analysis of the online organic food purchasing behaviors of consumers with different food-related lifestyles”, *Internet Research*, vol. 24, n. 5, pp. 587-607.
- MACKENZIE S.B., PODSAKOFF P.M. (2012), “Common method bias in marketing: causes, mechanisms, and procedural remedies”, *Journal of Retailing*, vol. 88, n. 4, pp. 542-555.
- MALHOTRA N., BIRKS D. (2007), *Marketing Research: an applied approach*, 3rd European Edition. Pearson education.
- MARTINI M., FEDI A., MURPHY B., DEAN M., LOERA B. (2024), “More Than Organic: Consumer Expectations of Sustainability and Quality. Evidences from a Qualitative Study in Italy”, *Journal of Food Products Marketing*, vol. 30, n. 1, pp. 1-15.
- NAM S.J. (2020), “Moderating Effects of Consumer Empowerment on the Relationship between Involvement in Eco-friendly Food and Eco-friendly Food Behaviour”, *International Journal of Consumer Studies*, vol. 44, n. 4, pp. 297-305.
- NGUYEN H.V., LE M.T.T., PHAM C.H. and COX S.S. (2024), “Happiness and pro-environmental consumption behaviors”, *Journal of Economics and Development*, vol. 26, n. 1, pp. 36-49.
- ORGANIS (2022), *With 12% growth, the organic market sustains a sharp growth curve* Available from: <https://organism.org.br/imprensa/com-12-de-avanco-mercado-de-organicos-sustenta-curva-acentuada-de-crescimento/> / (accessed May 2023).
- PEŠTEK A., AGIC E., CINJAREVIC M. (2018), “Segmentation of organic food buyers: An emergent market perspective”, *British Food Journal*, vol. 120, n. 2, pp. 269-289.
- PETTY R.E., CACIOPPO J.T. (2012), *Communication and persuasion: Central and peripheral routes to attitude change*. Springer Science & Business Media.
- REGANOLD J.P., WACHTER J.M. (2016), “Organic agriculture in the twenty-first century”, *Nature Plants*, vol. 2, n. 2, 15221.
- REICH B.J., BECK J.T., PRICE J. (2018), “Food as ideology: Measurement and validation of locavorism”, *Journal of Consumer Research*, vol. 45, n. 4, pp. 849-868.
- RIZZO G., BORRELLO M., DARA GUCCIONE G., SCHIFANI G., CEMBALO L. (2020), “Organic Food Consumption: The Relevance of the Health Attribute”, *Sustainability*, vol. 12, n. 2, pp. 595.
- SCHLEIFFER M., LANDERT J., MOSCHITZ H. (2022), “Assessing public organic food procurement: the case of Zurich (CH)”, *Organic Agriculture*, vol. 12, n. 3, pp. 461-474.
- SEMILA F., PANDA R. (2019), “Influence of Social Reference Groups on Consumer Buying Behavior: A Review”, *Journal of Management Research*, vol. 19, n. 2, pp. 131-142.
- TANDON A., DHIR A., KAUR P., KUSHWAH S., SALO J. (2020), “Why do people buy organic food? The moderating role of environmental concerns and trust”, *Journal of Retailing and Consumer Services*, vol. 57, 102247.
- UNITED NATIONS, UN (2020), *Helping governments and stakeholders make the SDGs a reality*. Available at: sustainabledevelopment.un.org.
- WYCHERLEY A., MCCARTHY M., COWAN C. (2008), “Specialty food orientation of food related lifestyle (FRL) segments in Great Britain”, *Food Quality and Preference*, vol. 19, n. 5, pp. 498-510.

An improved framework for social sustainability: a bottom-up approach to boost social innovation and sustain employability

GIUSY SICA¹ ALESSANDRA MICOZZI² MARIA ANTONELLA FERRI³ MARIA PALAZZO⁴

Abstract

This short paper presents a framework to social sustainability that sees bottom-up activities and projects as a necessary starting point to reach social innovation. The contribution is structured in three parts. In the first one, the concept of sustainability is presented, based on its three main pillars, social, economic and environmental facets. The evolution of the relation between these three aspects is also discussed. The second part presents the first theoretical framework based on this definition and then suggests a modification to include the topic of co-creation and participation of the community, which has been until now almost always considered only as the mere recipient of social innovation actions. A practical example is then given, in the third part, to demonstrate that when the community is actively involved in every step of the process, social sustainability actions lead to social innovation. The objectives, methodologies and strategies of this approach are briefly described, as part of a larger funded research project, the WELLTS project (Work Employment Labor Logic Talent Scope), which aims to analyse the main changes that technology is creating in terms of workplace and social sustainability.

Key words: social sustainability; well-being; social innovation; open innovation; bottom-up approach; people-led; participation

Framing of the research. *The concept and definition of the term sustainability has increasingly become a global challenge (Heilman et al., 2021). In September 2015, 193 countries gathered to define and adopt the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development. This led to the construction of European policy guidelines that consider the SDGs and recognize the fundamental role and benefits that innovation and creativity offer for economic and social growth (UNDP, 2015). The 2030 Agenda for Sustainable Development is based on the five P-keywords: People, Planet, Prosperity, Peace, and Partnership (Fourati-Jamoussi et al., 2021).*

Historically, the concept of sustainable development was first defined in the 1987 Brundtland Report as the development that meets the needs of present generations without compromising the ability of future generations to reach their own (Brundtland, 1987). Three are the fundamental pillars of sustainable development: environmental sustainability, economic sustainability, and social sustainability (Purvis et al., 2021; Amaral et al., 2023). Social sustainability, in particular, intersects the dimensions of well-being, social equity, access to social and health services and education, fair income distribution, good working conditions, equality of rights, social cohesion and inclusion, accountability and participation in policy making (Ly et al., 2023).

Over the years, the relative importance attributed to the three pillars of sustainable development has, however, changed (Colantonio, 2009; Yolles, 2018) as shown in Figure 1.

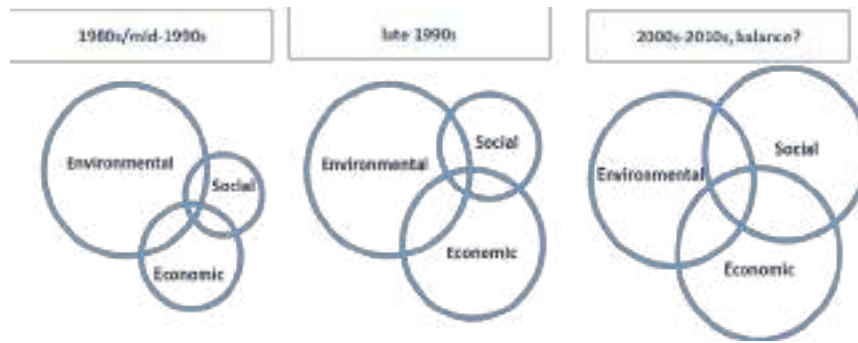
¹ e-mail: giusysica@hotmail.com

² University of Mercatorum
e-mail: alessandra.micozzi@unimercatorum.it

³ University of Mercatorum
e-mail: a.ferri@unimercatorum.it

⁴ University of Mercatorum
e-mail: maria.palazzo@unimercatorum.it

Fig. 1: Time evolution of the three pillars of the social sustainability



Source: Colantonio, 2009.

Before 2010, when a balance was achieved, the importance of the social innovation was always less than of the other two. According to Colantonio (2009), this phenomenon can be explained both by the difficulty of applying and understanding the characteristics of social sustainability, and because it is always marginalized by a society historically rooted in specific forms of environmentalism based on global capitalism models (Colantonio, 2009; Boström, 2012; Bottero et al., 2019).

Besides, there is still a lack of a clear and broadly accepted definition of the concept of “social sustainability”, despite the frequent use of this term in academic literature and political debates (Licht et al., 2021; Corsini et al., 2021). For example, Vallance et al. (2011) argue that the concept of social sustainability is in chaos, and this is seriously undermining its importance and usefulness. In contrast, Boström (2012) argues that the vagueness and flexibility of the interpretation of the concept cannot be completely overcome, but it is precisely this characteristic that has facilitated communication between stakeholders with a common interest, making it the conceptual tool that brings together various actors. Shirazi and Keivani (2019) argue that social sustainability acts as an empty signifier - it performs a task of organization within social discourse, but it lacks a definitive content. Lee and Jung (2019) add that following the evolution of the scope and interests of people and society may be more important to the discussion and actions than determining how to define social sustainability (Eizenberg et al., 2017).

The main challenge is that it is unclear how social sustainability relates to the other two pillars of sustainable development or to other social development issues (Martynov, 2020). The lack of a defined conceptual framework has led to a large increase in academic articles and studies since the late 1990s (Giddings et al., 2002; Litting et al., 2005; Hervani et al., 2017; Baranauskas et al., 2022). Furthermore, many works have highlighted that the division of sustainability into three dimensions (economics, environmental and social) is a limited and insufficient response to global problems. Different scholars have thus focussed on four/five dimensions in this field (Seghezze, 2009; Iordache, 2018; Grindheim et al., 2020; Najjar, 2022). Other papers have suggested a purely social vision, where environments and economies are transformed and considered only on the basis of the needs and desires of the community (Deigh et al., 2026; Alaimo et al., 2020).

Despite the proliferation of both theoretical and empirical works on social sustainability and its connection to the other pillars of sustainable development, it is only in 2016, with the work of Boyer et al. (2016, hereafter B16), that a clear theoretical foundation and a general framework on social sustainability are outlined. The work starts from recognising the ambiguity that surrounds social sustainability, compared to the other pillars of sustainability. Therefore, the main objective of B16 is to contextualise social sustainability within the general framework of sustainable development, and, above all, to start an interdisciplinary conversation on the major global problems of the 21st century (climate change, energy transition, etc.). Actually, the paper criticizes the three-pillars' (economic, environmental, social) model of sustainability, considering it too simplistic and potentially misleading. The authors argue that, even today, this model often relegates social sustainability to a secondary element compared to the economy and the environment, neglecting its complexity and interconnection with the other pillars. B16 recommends instead an “integrated approach” that considers social sustainability as a central concept and intrinsically connected to the other aspects of sustainability, and therefore leads to the development of holistic solutions that simultaneously consider social and economic needs, justice, environment and human capabilities. This approach is based on the idea that in order to respond adequately to the presence of multiple realities, multiple social approaches were needed.

In summary, in order to respond adequately to the presence of multiple realities, multiple social approaches are needed. Starting from this assumption, B16 constructs five different typologies of applications of the social dimension in real contexts, reconsidering the role of social sustainability, its degree of integration and its relation to the environmental and economic pillars. For each typology, the paper outlines the main aspects (such as the objectives which need to be achieved) and the procedural aspects (how to achieve them) of sustainable development.

The five different roles for social sustainability in the broader picture of sustainability in general, presented by B16, are listed below:

1) Social sustainability is seen as an autonomous pillar separate from the dimensions of environmental and economic sustainability;

2) Social sustainability is perceived as a constraint for the economic and environmental pillars: sustainable development in this case is considered a process of reconciliation between the conflicting priorities of social equity, economic development and environmental protection;

3) Social sustainability is considered as the foundation for the other pillars, because it constitutes the stock of social capital necessary for economic and environmental development, allowing to compensate for its criticalities and shortcomings;

4) Social sustainability is seen as a stimulus for economic and environmental progress and as a causal mechanism for environmental and economic change because it is capable of promoting alternative ways of thinking, interacting or governing;

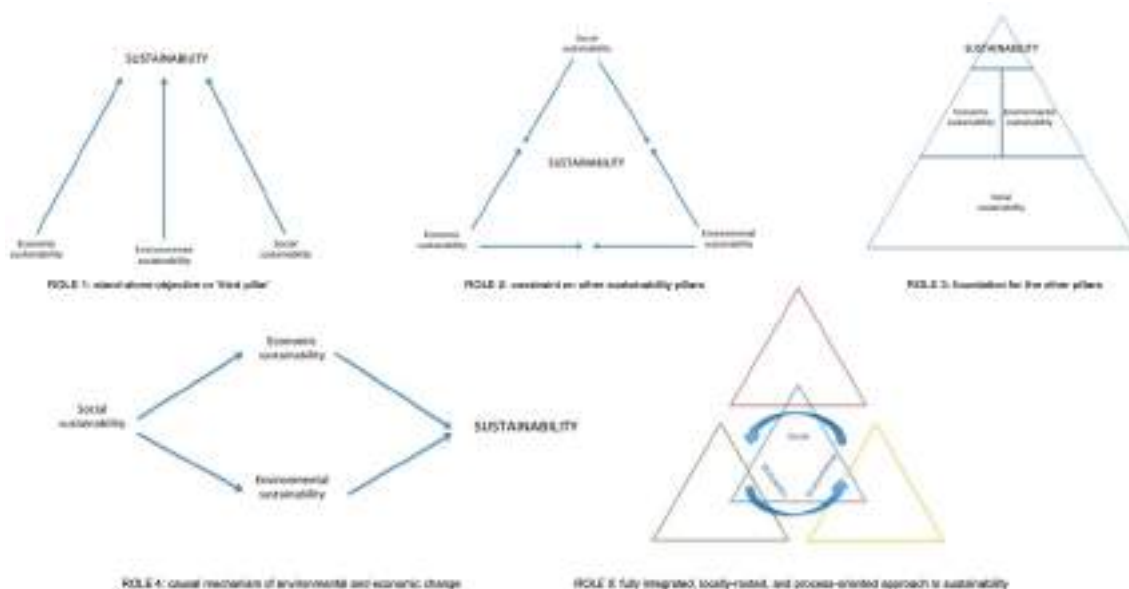
5) Social sustainability is perceived as fully integrated, locally-rooted, and process-oriented approach to sustainability for the development of communities and territories.

The paper states that there is the need to promote these five approaches to social sustainability in order to open a dialogue that can help researchers, professionals, and policymakers to define and apply the concept in a clearer and complete way.

Initiating an inter-disciplinary discussion which could lead to a definition of the social sustainability, is the main aim of this paper which, starting from the analysis in B16, proposes a modified version of its last approach (social sustainability as a process of integrated development of communities and territories) that better reflects on how to achieve social development with bottom-up social innovation practices.

A schematic view of the 5 approaches is shown in Figure 2, which is a summary of the 5 different figures in B16.

Fig. 2: The five different roles that social sustainability can have according to B16



Source: Boyer, Peterson, Arora, Caldwell, 2016.

Purpose of the paper. Although several studies have focussed on social sustainability and innovation (Souto, 2021), the relationship between the innovation and sustainability processes is neither obvious nor simple to be explored. To face the upcoming challenges towards a sustainable future and local development, policymakers and researchers are increasingly attributing a key role to people and their well-being (Kalkanci et al., 2018). However, the community is still too often considered only as the recipient of sustainable interventions and actions. The bottom-up approach to social innovation, i.e. that born directly from the citizens themselves, instead represents a model able to obtain effective results in terms of social and cultural progress, as well as economic and environmental insights (Puerari et al., 2018).

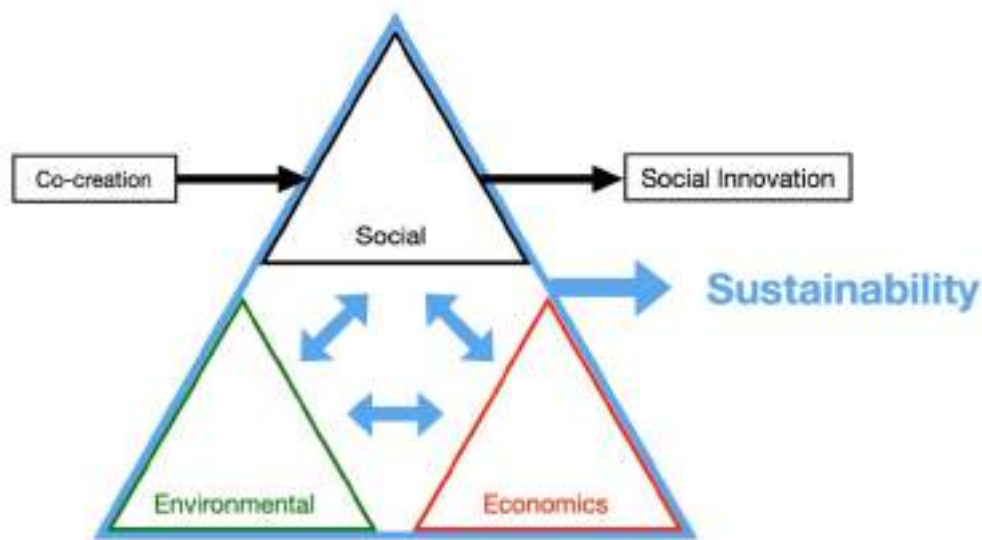
In light of these considerations, this paper proposes a modification of the 5th theoretical framework presented by B16, in which the social sustainability is a fully integrated, locally-rooted, and process-oriented approach to sustainability. The new framework introduced here, adds the fundamental concept of co-creation as the power behind each successful social sustainability action which automatically leads to social innovation (Grosse et al., 2020). The importance of the participation's aspect has been affirmed by the European Commission, according to this concept, the local human capital should take place in every single step of the sustainable development planning process.

In line with B16, the paper highlights that for each of the three pillars there are different agents with unique perspectives that must negotiate with each other. One of these agents is indeed the community, that should participate in all the phases of the planning, creation and realization of social innovation and territorial regeneration projects. Only in

this way, social, economic, and environmental priorities can aim to affect the experience of individuals. The framework is schematically shown in Figure 3.

Within the new framework, this conceptual study intends to investigate, starting from a specific case study's analysis, how fundamental for sustainability and social innovation is that the community plays an active role in the co-creation, planning and implementation of such interventions. This people-led approach is based on the collaboration of different social actors and stakeholders with different priorities and interests, but with the common goal of attaining sustainable development. The primary starting point is that the community activates itself "from below" with actions and practices of social innovation from which it will itself benefit, and which will automatically and naturally lead to social sustainability and sustainable innovation.

Fig. 3: A modification to the 5th framework by B16.



Source: Authors' elaboration based on B16. (The inter-connection of the three different pillars, represented by three triangles (environmental in green, economics in red and social in black) is the most effective way to reach sustainability (big light blue triangle). The black arrows entering and exiting the triangle of social sustainability represent causal mechanism and implication, respectively).

Methodology. The paper shows a conceptual study, setting the basis for an interdisciplinary discussion on the role and definition of social sustainability in the broader context of sustainability and social innovation. While empirical studies focus on collecting primary data from the real world, this research is based on a first intentional integration of previous theoretical results. Hence, a conceptual research design was adopted, in line with the scheme offered by Jaakkola (2020). As suggested before, a conceptual approach allows the creation of a bridge between different theoretical frameworks in an innovative way, thus broadening our understanding of a particular problem and triggering discussion and further research. However, since the "integrated approach" proposed by B16, assumes that the social approach is strictly linked to and dependent on the reality being analysed, in this study the discussion is also contextualized to the case of Officina Keller. This is an urban regeneration project carried out by the homonymous cultural and creative industry that has been operating in Naples since 2011 (Officina Keller Napoli, OKN, 2011). This project represents an important example of how people-led social innovation practices can be an important and concrete starting point to boost economic, social, and environmental development processes with a completely bottom-up approach.

Results. The historic centre of Naples is part of the World Heritage List. The strategy of the Municipality of Naples, with the Great UNESCO Project, has proposed, since 2007, a program of urban regeneration characterized by a strong integration of urban policies with those for social inclusion, social well-being and legality and security. The Great UNESCO project is divided into several blocks: some of them aimed at realising structural interventions and regeneration of the historic centre, other focusing on mitigating social discomfort, security problems, and improving the economic and social conditions of the inhabitants (Great UNESCO Project, 2007). This program, therefore, fits perfectly into the framework described by B16, which sees social sustainability as a process of integrated development of communities and territory. However, although representing a good step forward, the project has not achieved the desired results as the social and economic condition of the area is still problematic. The main reason for the 'partial' failure of this program, apparently excellent, is due to the fact that the regeneration actions were based on a top-down approach, i.e. planned, decided and carried out by the Municipality, without any confrontation with the inhabitants of Naples, that had no direct and only weak involvement in the decision-making and creative process.

OKN, on the other hand, has undertaken an opposite approach, realizing regeneration and innovation actions with a strong bottom-up connotation (Sica, 2022). The Officina Keller project starts from a territorial requalification, set and carried out by members of the local community: that of the recovery of the cloister of Santa Caterina a Formiello and the

area of the former wool mill (Lanificio) at Porta Capuana (Arcidiacono, 2017). Starting from the artistic and cultural vocation, OKN built a creative, artistic, and cultural hub, which is today a real workshop of ideas in which it is possible to share knowledge and promote the training and participation of numerous professional figures active in the sector of culture, training and economy. Specifically, the Officina Keller project has restored 3000 square meters of one of the most important examples of the Neapolitan Renaissance, which used to be wholesale shopping center in the second half of the century and then became a neglected place. At the same time, OKN has contributed to the creation of a high-level training school for craftsmanship and the realization of 11 residences for artists in-loco. In doing so, Officina Keller is currently the only regeneration project that has returned the regenerated space to the community, thus favouring the spread of an 'active' network within the Lanificio area. In addition to involving artisans scattered throughout the territory, also recovering a 'doing' capacity typical of the quality of Made in Italy, OKN, thanks also to the partnership with the social cooperative 'Dedalus' and 'Officine Gomitoli', has proposed, and still proposes, a series of active internships and school-workshops for young people from risky social groups (Sica, 2022). The project is thus able to intercept two increasingly disruptive problems, that of premature training/school dropout and the lack of integration into the world of employment. The idea is that for each job order a craftsman 'adopts' one or more individual to support them and involve them in his/her work. In this way, the objectives of reconversion and urban regeneration pursued by OKN are achieved not only through the revaluation of craftsmanship, but also and above all, through the creation of a new highly specialized workforce.

In conclusion, we believe that the vision of OKN is a multi-level one, both in terms of planning and policy, which determines high potential for sustainable development from social innovation and generating economic, territorial, environmental/digital innovation. The Officina Keller project demonstrates the potential of a bottom-up approach to urban regeneration and social innovation. The project has been successful in bringing together different stakeholders, including local residents, businesses, and government agencies, to work together and create a more sustainable community. The project has also been successful in generating economic, social, and environmental benefits. For example, the project has created jobs, improved the quality of life for local residents, and reduced environmental pollution. The Officina Keller project provides a valuable model for other communities that are seeking to create a sustainable future. The project demonstrates the importance of involving the local community in the planning and implementation of regeneration projects. It also shows the potential of social innovation to address complex social and environmental challenges.

The goals of OKN - urban regeneration, social innovation and social reconversion - make it a virtuous space that not only aligns with the objectives of the Agenda 2030 and more generally with the current and future European political strategies, but even surpasses them by maintaining a bottom-up approach involving all the actors - formal and informal - of its local territory. In the same way, the example of Officina Keller not only reflects the fifth framework introduced by B16, but overcomes it, introducing the concepts of co-creation and participation (Itten, et al., 2021; Anthony, 2023).

Hence, the paper concludes that participation is the most effective way to fully involve the local population and to create an endogenous management of resources that takes into account the needs of the community and a series of shared objectives that are able to simplify the participations' processes, also in line with other recent works (Bindi, 2019). Sustainable and participatory development therefore focuses on the community itself, its needs, potential and resources, and therefore differs from the traditional approach to economic development. This latter, and even more specifically from the place-based approach, in which social sustainability is a process of integrated development of communities and territory, instead, tend to attract resources from outside (Palazzo et al., 2022) In the framework proposed here, with the bottom-up approach, is the community that actively contributes to the development of the territory. The main objective in this new framework is to enable a reference community, with its system of stakeholders, to self-improve its quality of life, and at the same time regenerate its territory in a sustainable way, hence also making economy prosper. For this reason, the 5th theoretical framework of B16 can be modified, considering social innovation as the main driver of sustainable development.

Research limitations and future investigation. Social sustainability is a fundamental objective for the future of our societies. However, research in this field presents several challenges and limitations. As already stressed, the lack of a unique and shared definition of social sustainability represents a significant obstacle: the multiplicity of definitions and interpretations of the concept makes it difficult to compare studies and evaluate impacts. Furthermore, the lack of a clear conceptual framework limits the ability to develop robust theoretical models and identify effective measurement indicators. Social innovation can play a key role in improving this situation provided that adequate research and implementation strategies are developed (Kumar et al, 2022).

This study presents the typical limitations of a conceptual paper, built on a purely deductive basis, starting from the literature available on the subject, which is however in most of the cases contrasting. Moreover, and most importantly, most of the works in the literature have focused on aspects of sustainability that considered the social pillar (people) only as recipients of the other two levers of development (economic and social). Therefore, a future research agenda could:

- 1) Further investigate these issues following the perspective offered here, namely, to consider social innovation and methodologies related to participation and bottom-up approach as starting points and motors for sustainable development;

- 2) Better characterise and deepen the interaction between social sustainability and other aspects of sustainability, such as economic and environmental sustainability;

- 3) Study the impact of new technologies (such as artificial intelligence and blockchain) on social sustainability;
- 4) Since the case of Officina Keller is still in a preliminary phase, it would be advisable to carry out field research that could be able to offer more detailed and specific data to improve the understanding of the phenomenon under analysis;
- 5) Last but not least, future research could focus on a diversified choice of empirical case studies.

Managerial implications. The results presented in this study affirm that inhabitants' participation in the planning, creation and realization of social innovation processes is the engine to social sustainability. This requires a fundamental change to the managerial approach to social sustainability and innovation projects, as the community must be able to manage and get involved in the projects at every single step (Marradi et al., 2022). Indeed, this methodological approach assigns a very important role to all those stakeholders that usually do not take part in the decision-making process, even though they are directly interested by interventions and actions. This is initially done through the activation of workshops, focus groups, and questionnaires that can be used to understand the needs and desires of the local inhabitants in order to plan interventions and co-create projects that allow for better and more concrete project results (Strasser et al., 2020).

Not only the competent administrations, investors, and designers, are involved in the participatory process, but also representatives of civil society, associations, and social groups. The "top-down" managerial approach, that involve decisions taken exclusively by the administrations with pre-defined and well-set aims, is reversed and complicated (Micozzi et al., 2021). The actors, in this bottom-up cases, are multiple, everyone with their own skills, needs and priorities, which might differ from these of others. Compromise and communication therefore become of fundamental importance in the managerial and decision-making process (Palazzo et al., 2017). However, it is not possible to create a dialogue between different actors if they do not speak the same language, if a common background is lacking. Hence, a possible future path for research could be to identify new required skills and investigate on the possible way to training the administrative apparatus to provide adequate support to citizens and, consequently, push them to undertake co-creation actions (Moons et al., 2021).

Therefore, it is important to put a strong emphasis on new types of skills and knowledge in the co-creation and management of collaborative spaces, to strengthen bottom-up and social innovation approaches and foster improvements in the social, cultural, economic and environmental scenario (Palazzo et al., 2020). A concrete example is provided by the WELLTS project (Work Employment Labor Logic Talent Scope), which aims to analyse the main changes that digital technology is creating in terms of workplace and socio-cultural innovation. Indeed, the study carried out in the WELLTS project highlights how the development of employees and professional roles is closely linked to the evolution of technologies and at the same time to the diversification of demand needs in different territories.

Originality of the paper. The study contributes to broadening the debate on the implications of social sustainability by focusing on the fact that sustainable development should start from the bottom and through social innovation carried forward by people. The thesis puts forward in this work states that bottom-up social innovation, i.e. coming from the citizens themselves, probably represents the best way to activate local communities and the participation of citizens in the dynamics of development, with consequent positive results in terms of social and cultural, as well as economic, progress (Sica, 2021). Furthermore, the paper considers innovation as a particularly important factor in promoting sustainable development systems that favour the balance between economic growth, social development, and the protection of "public goods", such as biodiversity and other environmental resources (Qasim et al., 2021). In this way, social sustainable innovation represents an emerging paradigm that aims to address the major challenges of our time through innovative, technological, co-created and lasting solutions. It is a holistic approach that integrates different disciplines and sectors, from technology to economics, from sociology to environmentalism, with the aim of creating positive change in society (Cooper et al., 2018).

This paper proposes a revisitation of the 5th B16 model, reaching a definition of sustainable social innovation. Starting from considering the social sustainability like a development process integrated to community and territory, according to the theory of B16, this paper suggests to modify the framework, adding the engine of co-participation and co-creation of social innovation and territorial regeneration processes, as a *conditio-sine-qua-no* for the social pillar of sustainability, which then integrates with the economic and environmental ones. The co-creation methodology does not only aim to achieve a specific result from the social innovation perspective. It is also a tool that allows us to re-think the very way in which the relations of power between the various subjects involved are managed, and how innovation can practically be applied to concrete situations to achieve social sustainability (Trischler et al., 2023). The participation of the community throughout the entire innovation process, starting from the ideation and design phases, allows one to broaden the perspective of institutions and companies, by listening to a plurality of other instances and needs. This contributes to an integrated and concrete approach to sustainable development and innovation activities. Specifically, the work describes a practical example of a bottom-up project for the redevelopment of a neighbourhood in the historic centre of Naples, and in particular of a historic building of great artistic value, the Lanificio Borbonico. In addition to regenerating the territory, Officina Keller has caused a huge change in the existing community, letting the community itself decide how best to use the space available. With a completely bottom-up approach, the project has achieved concrete results of sustainable and social innovation, succeeding where top-down actions had dramatically failed.

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References

- ALAIMO L.S., MAGGINO F. (2020), "Sustainable Development Goals Indicators at Territorial Level: Conceptual and Methodological Issues-The Italian Perspective", *Social Indicators Research*, vol. 147, pp. 383-419.
- AMARAL M.R., WILLERDING I.V., LAPOLLI É.M. (2023), "ESG and sustainability: the impact of the pillar social", *Concilium*, vol. 23, n. 13.
- ANTHONY, B. (2023), "The Role of Community Engagement in Urban Innovation Towards the Co-Creation of Smart Sustainable Cities", *Journal of the Knowledge Economy*, vol. 14, n. 4.
- BARANAUSKAS G., RAIŠIENĖ A.G. (2022), "Transition to Digital Entrepreneurship with a Quest of Sustainability: Development of a New Conceptual Framework", *Sustainability*, vol. 14, n. 3:1104.
- BOSTRÖM N. (2012), "A missing pillar? Challenges in theorizing and practicing social sustainability: introduction to the special issue", *Sustainability: Science, Practice and Policy*, vol. 8, n. 1, pp. 3-14.
- BOTTERO M., CAPRIOLI C., COTELLA G., SANTANGELO M. (2019), "Sustainable Cities: A Reflection on Potentialities and Limits based on Existing Eco-Districts in Europe", *Sustainability*, vol. 11, n. 20: 5794.
- BOYER RH., PETERSON N.D., ARORA P., CALDWELL K.B. (2016), "Five Approaches to Social Sustainability and an Integrated Way Forward", *Sustainability*, vol. 8, n. 9: 18.
- BRUNDTLAND, G. H. (1987). *Our Common Future - rapporto Brundtland*, Oxford.
- COLANTONIO A. (2009). Social Sustainability: linking research to policy and practice. Oxford Institute for Sustainable Development.
- COLANTONIO A. (2011), "Social Sustainability: Exploring the linkages between research, policy and practice", *European Research on Sustainable Development*, pp. 35-57
- COOPER L., GORMAN D. (2018), "A Holistic Approach to Embedding Social Responsibility and Sustainability in a University—Fostering Collaboration Between Researchers, Students and Operations", Leal Filho W. (eds) *Handbook of Sustainability Science and Research. World Sustainability*, Springer Cham, pp. 177-192
- CORSINI L., MOULTRIE J. (2021), "What Is Design for Social Sustainability? A Systematic Literature Review for Designers of Product-Service Systems", *Sustainability*, vol. 13, n. 11: 5963.
- DEIGH L., FARQUHAR J., PALAZZ M., SIANO A. (2016), "Corporate social responsibility: engaging the community", *Qualitative Market Research: An International Journal*, vol. 19, n. 2, pp. 225-240.
- EIZENBERG E., JABAREEN Y. (2017), "Social Sustainability: A New Conceptual Framework", *Sustainability*, vol. 9, n. 1: 68.
- FOURATI-JAMOUSSI F., DUBOIS M.J.F., AGNES M., LEROUX V., SAUV EE L. (2019), "Sustainable development as a driver for educational innovation in engineering school: the case of UniLaSalle", *European Journal of Engineering Education*, vol. 44, n. 4, pp. 570-588.
- GIDDINGS B., HOPWOOD B., O'BRIENG. (2002), "Environment, economy and society: fitting them together into sustainable development", *Sustainable Development*, vol. 10, pp. 187-196.
- GRINDHEIM L. T., BAKKEN Y., HAUGE K. H., HEGGEN M. P. (2019) "Early Childhood Education for Sustainability Through Contradicting and Overlapping Dimensions", *ECNU Review of Education*, vol. 2, n. 4, pp. 374-395.
- GROSSE E.B., FEMENÍAS P. (2020), "Action Research for sustainability: co-creation overcoming fragmentation in multidisciplinary design teams", *IOP Conference Series: Earth and Environmental Science*, vol. 588, n. 5: 052060.
- HEILMANN A., PUNDT H. (2021), "Methods of transdisciplinary collaboration within sustainable research and development projects", *World Sustainability Series book seriespp*, pp. 81-89.
- HERVANI A., SARKIS J., HELMS M.M. (2017), "Environmental goods valuations for social sustainability: A conceptual framework", *Technological Forecasting and Social Change*, vol. 125, pp. 137-153.
- IORDACHE G.D. (2018), "Institutional Sustainability and Sustainable Development", *Manager Journal, Faculty of Business and Administration*, vol. 27, n. 1, pp. 74-84.
- ITTEN A.V., SHERRY-BRENNAN F., HOPPE T., SUNDARAM A., DEVINE-WRIGHT P. (2021), "Co-creation as a social process for unlocking sustainable heating transitions in Europe", *Energy Research & Social Science*, vol. 74. 102363.
- JAACKOLA E. (2020), "Designing conceptual articles: four approaches", *AMS Review*, vol. 10, n. 1/2, pp. 18-26.
- LEE K., JUNG H. (2019), "Dynamic semantic network analysis for identifying the concept and scope of social sustainability", *J. Clean. Prod.*, vol. 233, pp. 1510-1524.
- LICHT K.D., FOLLAND A. (2019), "Defining "Social Sustainability": Towards a Sustainable Solution to the Conceptual Confusion", *Etikk i Praksis: Nordic Journal of Applied Ethics*, vol. 13, pp. 21-39.
- LITTIG B., GRIESSLER E. (2005), "Social sustainability: a catchword between political pragmatism and social theory", *International Journal of Sustainable Development*, vol. 8, pp. 65-79.
- LY A.M., COPE M.R. (2023), "New Conceptual Model of Social Sustainability: Review from Past Concepts and Ideas", *International Journal of Environmental Research and Public Health*, vol. 20, n. 7:5350.
- MARRADI C., MULDER I. (2022), "Scaling Local Bottom-Up Innovations through Value Co-Creation", *Sustainability* vol. 14, n. 18: 11678.
- MARTYNOV A. (2020), "Sustainable overall social transformation as a way of progress", *Journal of Social Science Research*, vol. 16.
- MICOZZI A., IACOBUCCI D., MARTELLI I., PICCALUGA A. (2021), "Engines need transmission belts: the importance of people in technology transfer offices", *The Journal of Technology Transfer, Springer*, vol. 46, n. 5, pp. 1551-1583, October.
- MOONS I., DAEMS K., VAN DE VELDE LLJ. (2021), "Co-Creation as the Solution to Sustainability Challenges in the Greenhouse Horticultural Industry: The Importance of a Structured Innovation Management Process", *Sustainability*, vol. 13, n. 13: 7149.
- NAJJAR, R. (2022), "Four dimensional spatial sustainability (4DSS): a revolutionary approach toward utopian sustainability", *Discover Sustainability*, vol. 3, n. 21.
- KALKANCI B., RAHMANI M., TOKTAY L.B. (2018), "The Role of Inclusive Innovation in Promoting Social Sustainability", *Production and Operations Management*, vol. 28, pp. 2960 - 2982.
- KUMAR D., GUPTA P. (2022)", Social Innovation for Sustainability and Social Inclusion", *Asia-Pacific Journal of Management Research and Innovation*, vol. 18. n3/4, pp. 169-177.

- PALAZZO M., FOROUDI P., SIANO A., KITCHEN P.J. (2017) "The value and significance of corporate community relations: an Italian SME perspective", *The Bottom Line*, vol. 30, n.4, pp. 330-344.
- PALAZZO M., DEIGH L., FOROUDI P., SIANO A. (2020). "How to boost place branding leveraging on community relations: An exploration of the banking sector in Ghana", *Qualitative Market Research: An International Journal*, vol. 23, n. 4, pp. 933-960.
- PALAZZO M., GIGAURI I., PANAIT M.C., APOSTU S.A., SIANO A. (2022), "Sustainable Tourism Issues in European Countries during the Global Pandemic Crisis", *Sustainability*, vol. 14, n. 7: 3844.
- PUERARI E., DE KONING J.I.J.C., VON WIRTH T., KARRÉ P.M., MULDER I.J., LOORBACH D.A. (2018), "Co-Creation Dynamics in Urban Living Labs", *Sustainability*, vol. 10, n. 6: 1893.
- PURVIS B., MAO Y., ROBINSON D. (2018), "Three pillars of sustainability: in search of conceptual origins", *Sustainability Science*, vol. 14, pp. 681-695.
- QASIM M., GRIMES A. (2021), "Sustainability and wellbeing: the dynamic relationship between subjective wellbeing and sustainability indicators", *Environment and Development Economics*, vol. 27, n. 1, pp. 1-19.
- REZA SHIRAZI M., KEIVANI R. (2019), "The triad of social sustainability: Defining and measuring social sustainability of urban neighbourhoods", *Urban Research & Practice, Taylor & Francis Journals*, vol. 12, n. 4, pp. 448-471.
- SEGHEZZO L. (2009), "The five dimensions of sustainability", *Environmental Politics*, vol. 18, n. 4, pp. 539-556.
- SICA G. (2021), "Rigenerazione ed approccio transdisciplinare - Come creare innovazione sociale e culturale", in *AES | Arts + Economics*, vol. 9, n. 5.
- SICA G. (2022), "Rigenerazione e riconversione sociale: il caso Officina Keller", *Urbanistica Informazioni*, n. 302, pp. 186-188.
- SOUTO J.E. (2021), "Organizational creativity and sustainability-oriented innovation as drivers of sustainable development: overcoming firms' economic, environmental and social sustainability challenges", *Journal of Manufacturing Technology Management*, vol. 33, n. 4, pp. 805-826.
- STRASSER T., DE KRAKER J., KEMP R. (2020), "Three Dimensions of Transformative Impact and Capacity: A Conceptual Framework Applied in Social Innovation Practice", *Sustainability*, vol. 12, n. 11, pp. 4742.
- TRISCHLER J., SVENSSON P.O., WILLIAMS H. WIKSTRÖM F. (2023), "Citizens as an innovation source in sustainability transitions - linking the directionality of innovations with the locus of the problem in transformative innovation policy", *Public Management Review*, vol. 25, n. 11, pp. 2093-2115.
- VALLANCE S., PERKINS H.C., DIXON J.E. (2011), "What is social sustainability? A clarification of concepts", *Geoforum*, vol. 42, n. 3, pp. 342-348.
- YOLLES M. (2018), "Sustainability development: part 2-exploring the dimension of sustainability development", *International Journal Markets and Business System*, vol. 3, pp. 256-275.

Websites

<https://www.undp.org/sustainable-development-goals>

<https://www.coesionenapoli.it/cis-centro-storico-di-napoli/progetti/progetto-centro-storico-unesco/>

<https://www.officinakeller.it/>

Knowledge, self-perception and eco-sustainable behaviours. Inspiring actions in green learning

ADRIANA APUZZO¹ RITA KLAPPER² MARIALUISA SAVIANO³ MARIO TESTA⁴

Abstract

The study aims to examine the level of knowledge of sustainability understood in its triple dimension, economic, environmental and social, as well as investigate the gap between declared values and actual actions in the sustainable behaviour of students. This is addressed through an investigation into the individual perception of environmental responsibility and the actual adoption of sustainable behaviours, in order to evaluate to what extent the students, participating in a series of seminars on sustainability, internalize and translate the principles learned into concrete actions.

In line with thought of Hadjichambi and Paraskeva-Hadjichambis (2020) on the importance of sustainability education, the study focuses on the implementation of a training approach that emphasizes active and contextualized learning. The proposed series of seminars incorporates elements of investigation, planning, action, evaluation and reflection, with the aim of informing and making students more aware.

The survey method involves administering a questionnaire to a sample of students before, during and after the series of seminars on CSR and individual environmental responsibility. In future, it is planned to conduct a survey in Italy and other European countries in order to carry out a cross-cultural comparison.

Key words: education; sustainability; students; knowledge; perception; behaviour

Framing of the research. *In the decade between the 60s and 70s of the last century, the political debate on the environmental issue had as its central issue the relationship between economy and environment in the - increasingly evident - need to preserve the quality of the natural heritage and in the awareness that, as the planet's resources tend to be exhaustible, the models of socio-economic development should be reviewed and balanced (de Magalhães, 2023). In response to this need, the World Commission on Environment and Development introduced the concept of sustainable development in 1987 (Smyth, 2008); in the Brundtland report the concept was defined as "...development that meets the needs of the current generation without compromising the ability of future generations to meet their own needs" (WCED, 1987). This premise highlights that the commitment to promote sustainable development is based on three fundamental pillars: the environmental, the social and the economic which to be realized have gone through various phases, culminating in the significant international initiatives of Agenda 21, the Objectives of Millennium Development (MDG) and the 2030 Agenda with the 17 sustainable development goals (SDGs) (United Nations, 2021). It is a globally shared commitment among all nations aimed at eliminating poverty and other conditions of deprivation. The main goal is to combine strategic actions to improve health and education, reduce disparities and promote economic growth (Kanapathy et al., 2019).*

At the same time, this commitment is aimed at jointly addressing the challenges of climate change and ensuring the protection of oceans, forests and the environment as a whole (United Nations, 2023).

In recent years, awareness regarding sustainability issues has acquired an increasingly predominant position in global attention (Alsaati et al., 2020) as progress towards the set objectives has been slower than expected and, in some cases, the current situation is even worse than to the past: the global average temperature at the land and ocean surface during the period January-December 2023 was recorded with an increase of 1.18°C (2.12°F) compared to the 20th century average, standing at 13, 9°C (57.0°F). This is the highest overall temperature recorded globally in the period January-December 2023: each month, from June to December, recorded higher temperatures than the corresponding month of any previous year (LINDSEY R. & DAHLMAN L, 2024). Additionally, according to NOAA's 2023 Annual Climate Report, combined land and ocean temperatures have averaged an increase of 0.06°C (0.11°F) per decade since

¹ University of Salerno
e-mail: adapuzzo@unisa.it

² e-mail: rita.klapper@idrac

³ University of Salerno
e-mail: msaviano@unisa.it

⁴ University of Salerno
e-mail: mtesta@unisa.it

1850, or about 2°F in total, and the rate of warming since 1982 is more than three times higher: 0.20°C (0.36°F) per decade (NOAA National Centers for Environmental Information, 2024). It is clear from the report that human activities, especially through greenhouse gas emissions, have undeniably contributed to global warming, causing global surface temperatures to exceed 1.1°C above 1850-1900 levels in the period 2011-2020 (NOAA National Centers for Environmental Information, 2024). The future level of global warming will be determined by the amount of carbon dioxide and other greenhouse gases released in the coming decades. Currently, our activities, such as the burning of fossil fuels and, to a lesser extent, deforestation, contribute around 11 billion tonnes of carbon per year (equivalent to just over 40 billion tonnes of carbon dioxide) to the atmosphere. This amount of carbon exceeds the capacity of natural removal processes, leading to a steady increase in the amount of atmospheric carbon dioxide each year (Global Carbon Project, 2023). In addition, August 2, 2023 was Earth Overshoot Day, calculated every year by the Global Footprint Network using data from the National Footprint and Biocapacity Accounts (Global Carbon Project, 2023) which indicates the official exhaustion of the renewable resources that the Planet is able to offer within a year. This means that on August 2, humanity had already “finished” all the resources that nature produces in an entire year, starting to accumulate an ecological debt. With over 8 billion inhabitants, humanity consumes in excess of the planet’s natural regeneration and reabsorption capacities. In 1973, Overshoot Day fell on December 3, exceeding the annual budget by a few days. In 2003, September 12; in 2013, on August 3. The date is constantly brought forward, highlighting an increase in our ecological debt over time. Globally, we are consuming the equivalent of 1.7 Planets per year, a worrying figure that is expected to increase to two Planets by 2030, according to current trends (WWF, 2023). Over the past 5 years, the trend appears to have stabilized, but it is complex to determine whether this is due to the slowing economy or decarbonization efforts. To reach the goal set by the United Nations IPCC of reducing greenhouse gas emissions globally by 43% by 2030 (compared to 2010), it would be necessary to postpone Earth Overshoot Day by 19 days per year for following seven years (WWF, 2023).

It’s clear that no country is progressing adequately towards achieving the Sustainable Development Goals by 2030. We find ourselves in a “value-action gap”, that is, an observed discrepancy between the concerns expressed by people regarding the main environmental, social, economic or ethical and the lifestyle choices or purchasing decisions they actually put into practice (Flynn et al., 2009). In this regard, Barr & Gilg (2006) examined the gap between value and action among citizens who adopt sustainable lifestyles, such as energy saving, waste recycling, water conservation and “green” consumption. Their results highlighted significant differences not only between distinct groups (committed environmentalists, traditional environmentalists, occasional environmentalists and non-environmentalists), but also in their levels of commitment, influenced by deep social values. They also highlight that people’s predisposition to take environmental actions is rooted in and conditioned by their existing domestic lifestyle and daily experiences.

Consequently, it becomes evident that in addressing the apparent challenge of a mismatch between people’s opinions and perspectives on environmental problems and their ability and willingness to act to improve them, there are considerable conceptual and methodological challenges within academic training. Therefore, in order to achieve sustainability goals, it is essential that an individual’s perception and behaviour towards sustainability undergo a transformation, which can be achieved through education (Kanapathy et al., 2019).

The Tbilisi Intergovernmental Conference in 1977, through the Belgrade Charter, establishes the objectives of environmental education, aiming to “develop a world population aware of and interested in the environment and related problems, equipped with knowledge, skills, attitudes, motivations and commitment necessary to work both individually and collectively to resolve current problems and prevent future ones” (UNESCO, 1977).

This approach and the proposed sustainable model have been a source of inspiration for environmental educators, pushing them to constantly improve their teaching strategies and materials. The main objective of such efforts is to promote transformative action, focusing on the effective acquisition of critical knowledge and skills (Frisk E. & Larson K.L., 2011). Frisk E. & Larson K.L. (2011), in the field of environmental knowledge, identifying three distinct areas: declarative, procedural and effective knowledge. Declarative knowledge deals with the dynamics, interactions and impacts within the socio-ecological system; procedural knowledge includes information regarding local action strategies and processes aimed at change; finally, knowledge of effectiveness focuses on personal effectiveness and the consequences of actions taken (Frisk E. & Larson K.L., 2011).

Arguably these elements form the basis on which environmental educators should develop their pedagogical approach, working to refine teaching methodologies to ensure comprehensive learning and a deep awareness of environmental issues.

Environmental sustainability education emerged in the late 1960s, reflecting the environmental problems of the time (McKeown & Hopkins, 2003) and is regarded as an approach to teaching and learning aimed at developing knowledge and skills with a particular focus on behavioural change. At the heart of this approach is participatory and active citizenship, based on joint and co-created solutions, independent and autonomous thinking and learning to face a reality of change and uncertainty. The learning process can be conceived as transformative, mediated by a critical, open, pluralistic and democratic approach. An action competence approach aims to develop students’ ability, motivation and desire to play an active role in finding democratic solutions to the problems and challenges of environmental sustainable development (Brudermann et al., 2019).

The literature on sustainable learning is predominantly composed of studies that evaluate the behaviours reported by students or, in the best case scenario, explore their willingness to engage in pro-environmental actions (Malandrakis, 2022); however, the number of studies that effectively cultivate and promote students’ concrete and real-world action towards sustainability is limited (Bonnett, 2023).

This implies that the objective of Environmental Sustainability Education is not limited to a simple behavioural change in students but, rather, represents a teaching and learning process that enhances students' knowledge, skills and competences in sustainability (Bopardikar et al., 2023), resulting in a transformation in the way we think, feel and act regarding environmental issues and sustainable development (Alam, 2023).

Through sustainability education, we not only increase knowledge on this dimension, but also evaluate the perception of it and actual sustainable behaviours, in order to stimulate behavioural change towards sustainable consumption (Alam, 2022; Uralovich et al., 2023).

Environmental sustainability education could contribute to greater environmental knowledge, understood as the general understanding of facts, concepts or relationships regarding the surrounding environment and its ecosystems (Gericke et al., 2019; Mohiuddin et al., 2018) implying the understanding of fundamental relationships that can influence impacts in the surrounding environment. This could influence the perception of environmental sustainability, i.e. the mental process of individual interaction with the environment mediated through perceptive mechanisms and, in particular, cognitive mechanisms in the process of building environmental value for each individual (Vincenzi et al., 2018). The term "perception" refers to the act, process and result of actions related to understanding and interpreting a fact, phenomenon or reality. In this context, "realizing" a fact implies the ability to select it carefully, deepening its understanding rather than treating it superficially. Environmental perception can be described as a psychosocial phenomenon in which cognitive and emotional functions are involved in the representation of the environment, both at an individual and collective level (Schiano et al., 2020). Perception, therefore, constitutes the starting point in the process of acquiring knowledge, influencing both theoretical aspects and practical applications (Schutte & Bhullar, 2017).

The study of perception offers us multiple angles of approach, examining the processing process triggered by physical, chemical, environmental, social, psychological and emotional stimuli and considering effective, cultural and cognitive aspects (Kang & Bodenhausen, 2015). Similarly, one can analyse perception across various dimensions, ranging from subliminal perception to broader perceptual awareness, or from self-recognition (in one's inner world) to awareness of one's surroundings (in the outer world) (Schäufele & Hamm, 2017). It's important to underline that the connection between reality and perception is far from immediate (Chemero, 2003): the perceptual experience of an object does not represent a faithful copy of reality but, rather, a subjective representation, always limited and partial. According to Bronfenbrenner U. & Morris P. (1996) perception constitutes the set of processes that allow us to recognise, organize and give meaning to sensations coming from environmental stimuli. It's important to underline that these stimuli can originate from both the internal (individual) and external environment. In this context, sensations are processed and combined to form a mental representation of a perceived stimulus. Perception, being part of a cognitive process, does not develop in an isolated way, but is interconnected with other aspects of development such as affective, social and organic ones (Kang & Bodenhausen, 2015). Therefore, perception is closely linked to intelligence, a key element in the formation of concepts and in relation to beliefs, values, preferences and experiences (Gazzola et al., 2020). Furthermore, Gibson proposes a traditional definition of perception, which represents the extent to which environmental objects provide an information structure that ultimately reaches sensory receptors, leading to the internal identification of the object (Rookes P. & Willson J., 2005). His theory of direct perception, known as the ecological model, introduces the concept of affordances and argues that humans do not require superior cognitive processes to evaluate sensory and perceptual experiences. On the contrary, according to Rookes P. & Willson J. (2005) the perceptual process involves the construction of an initial internal representation of the stimulus, integrating sensory information with other sources of knowledge. In this context, learning takes on an important role; perception therefore becomes a dynamic process during which various hypotheses are formulated based on three main factors: sensory data, i.e. information coming from the senses; stored data, information previously acquired and retrieved from memory; constructed data, information inferred when cognitive processes operate at a higher level (Rookes P. & Willson J., 2005; Wagman J.B. & Blau J.J., 2019).

To optimize the effectiveness of perception, the environment must have an impact on the observer, manifesting itself with motivating or repulsive tones and giving this dynamic a level of emotional involvement (Wagman J.B. & Blau J.J., 2019): our mind organizes and represents sensory experiences, arising from perceptions captured through the senses, in a process in which vision stands out as a selective and creative process, intertwined with smell, touch, taste and hearing. No perception presents itself in a neutral manner; it is susceptible to both internal and external influences (Rookes P. & Willson J., 2005). Much of the perceptual process occurs unconsciously, starting from the assimilation of data, passing through representation, object recognition, the influence of the senses and perceptive judgments (Rookes P. & Willson J., 2005).

The perception of sustainability can have a significant impact on people's sustainable behaviours (Gazzola et al., 2020; Schäufele & Hamm, 2017). When people are aware and understand the importance of sustainability, they show a greater propensity to adopt behaviours aimed at reducing environmental impact and promoting sustainable practices (Kang & Bodenhausen, 2015). To fully understand this statement it is useful to analyse the theory of planned behaviour (Ajzen, 1991) which represents one of the most influential theories in predicting rational behaviour, founded on the theory of reasoned action (Fishbein & Ajzen, 1997). The latter maintains that an individual's intention to perform a certain behaviour is influenced both by his attitude towards that behaviour and by a subjective norm, relating to the perception of how others see his action. The resulting behavioural intention determines the actual execution of the behaviour.

Focusing on environmental behaviours, Hines et al. (1987) formulated the REB model, i.e. the model of Responsible Environmental Behaviour which explains how an individual's intention to act responsibly towards the environment depends mainly on a set of cognitive and personal variables, including knowledge of environmental issues, understanding of action strategies combined with implementation skills, attitudes, locus of control and personal responsibility. The intention, therefore, will result in effective environmentally responsible behaviour, unless situational factors prevent the individual from acting in accordance with that behaviour (Hines et al., 1987).

The concept of sustainable behaviour represents a global approach that promotes consumption aimed at preserving, protecting and promoting the well-being of the planet (Fabio & Croce, 2024; B. Wang & Udall, 2023). Sustainable behaviours are actions aimed at reducing the use of natural resources in products, contributing to a lower environmental footprint (White R. L. et al., 2019).

In the field of psych-environmental studies, researchers have examined several sustainable behaviours, including recycling, composting, waste management, water conservation, energy saving practices, reading about environmental topics, and participating in planning and eco-sustainable construction, as well as the conservation of ecosystems, among others (Vesely et al., 2022; Q. Wang et al., 2023). The authors specifically identify three phases of sustainable behaviour faced by consumers: the purchasing phase, the consumption phase, and the disposal phase. At the purchasing stage, consumers can choose eco-friendly products, opt for used items or consider rental options. In the consumption phase, behaviours aimed at reducing the overall consumption of resources (for example, electricity, water, energy) become relevant. In the disposal phase, recycling is the most consolidated behaviour (Vesely et al., 2022; Q. Wang et al., 2023).

Consistent with the analysis of students' knowledge, perception and behaviour towards sustainability, the Science of Sustainability (Sipos et al., 2008) highlights that the Head, Hands and Heart (HHH) approach is configured as a methodological paradigm that can be adopted by educators to evaluate performance of the students.

This multidimensional approach is designed to comprehensively capture the interconnection between the cognitive dimension (the "head"), the psychomotor dimension (the "hands") and the emotional dimension (the "heart") of students in the context of issues related to sustainability. In this regard, Klapper & Fayolle, 2023 speak of "sustainable transformative learning" emphasizing the educational experience aimed at the metamorphosis of the students' personality, directing it towards a mentality and behaviour oriented towards solving the challenges that require social restructuring. The term "sustainable" is introduced because, through this process, students develop the ability to apply new skills in activities that respect the principles of environmental, social and economic sustainability; in other words, they become agents of improvement in the world, acting more effectively and oriented towards the common good, developing a perspective that redefines the way we address problems (Klapper Rita & Zitek A., 2023).

To achieve these objectives, three different types of pedagogical activities can be used, highlighting the operational and emotional dimensions of learning: art-based creative activities to stimulate students' creativity and encourage artistic expression as a vehicle for the learning process; practice-based activities to connect theory to concrete experience, allowing students to apply their knowledge in real situations; contemplative and reflective activities to develop students' emotional awareness and understanding (Klapper, 2022).

Through this approach we intend to provide a complete education that involves students in a meaningful way, stimulating their creative, practical and emotional faculties.

Purpose of the paper. Universities are the main drivers for promoting understanding of sustainability and shaping tomorrow's leaders for a sustainable future for all (Msengi et al., 2019) through research, teaching and practices (Brudermann et al., 2019).

The achievement of sustainable scenarios depends on the individual ability to make changes that favour behaviours that are less harmful to the environment. To effectively promote such changes, it is essential to understand the self- and context-perception of individuals who adopt behaviours related to environmental sustainability. A more in-depth analysis of these self-perceptions and perceptions of the environment adds value, offering foundations for interventions aimed at promoting a sustainable environment.

Therefore, this study aims to examine in detail the level of knowledge of sustainability of university students, exploring the economic, environmental and social dimensions. A key objective is to analyse the gap between the values declared by students and the actions actually taken regarding sustainable behaviour. The research will focus on identifying individual perceptions of environmental responsibility and the actual adoption of sustainable practices. It will be assessed to what extent the students, by participating in a series of seminars on sustainability, integrate and translate the principles learned into concrete actions, contributing to the process of transformation towards a more sustainable lifestyle. It is imperative to integrate aspects of sustainability into academic education, allowing students to fully understand the impact of their daily actions on environmental degradation. This integration also fosters a critical awareness of the intrinsic link between environmental, economic and social issues, pushing students to actively influence their environment as responsible citizens, both locally and globally (Tang, 2018). In this context, universities play a crucial role in helping to solve one of the pre-eminent challenges for a sustainable future (Azhar et al., 2022).

Methodology. In order to explore students' knowledge, perception and behaviours related to environmental sustainability, our study focuses on the implementation of a training approach that highlights active and contextualized learning. The proposed series of seminars integrates elements of investigation, planning, action, evaluation and reflection, with the aim of informing and increasing students' awareness, in line with the Head, Hands and Heart (HHH) methodological approach. For the investigation phase, a questionnaire was administered to a sample of 150 students before, during and after the series of seminars, focusing on CSR issues, in particular on individual environmental responsibility. The designed questionnaire includes a total of 30 closed-ended questions, divided into four sections:

demographic profile, knowledge of sustainability (7 items), perception of environmental sustainability (9 items) and sustainable behaviours (9 items). Each item was rated using a 7-point Likert scale, where 1 = strongly disagree and 7 = strongly agree. The measurement of knowledge on environmental sustainability involved items taken from the Questionnaire on Sustainability Awareness (Gericke et al., 2019) and Sustainability Knowledge regarding eco-friendly vehicles (Mohiuddin et al., 2018). Students' perceptions were assessed using an adapted version of the Environmental Attitude Questionnaire (EAQ) by Tuncer (2008), already validated in the literature. Finally, sustainable behaviours were measured through the scale developed by Gericke et al., (2019) and, subsequently, by Fabio et al. (2024).

It is planned to conduct a study on environmental sustainability involving Italian participants. For data collection, we intend to use Microsoft Forms to create an online questionnaire in Italian. This survey will be disseminated among university students through e-mail transmission, with encouragement to participate and provide their valuable contribution. In the invitation message, an opportunity for direct communication with our research team will be included, with an invitation to students to contact us for any clarification, additional questions or further explanation regarding the questionnaire. Active collaboration with participants will be essential to ensure the quality and completeness of responses, as well as promoting informed and conscious participation in the study.

Results. Sustainability education activities are aligned with the United Nations Sustainable Development Agenda, in particular with Goals 4 and 13, which aim, respectively, to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all and take urgent measures with substantial impact to combat climate change and its consequences.

This research is conducted to evaluate students' knowledge, perception and behaviours towards sustainability. The main attention was paid to reducing the gap between knowledge on sustainability issues, students' perception of sustainability and their actual behaviours in daily life. Through a program of seminars on environmental sustainability education, the research offers a useful starting point for evaluating the positive effect of sustainable initiatives promoted by universities. A solid connection between seminar participation, perception of sustainability and actual sustainable behaviours is highlighted, indicating the importance of understanding sustainability issues and approval of sustainable programmes.

The analysis of the effectiveness of the seminars focuses on how much the students internalize and translate the principles learned into concrete actions, including expected changes in knowledge, attitudes and behaviours after participation in the seminars. This perspective reflects effective sustainability education, characterized by holistic systems, an ability to create connections, interdisciplinarity and lateral rigor guiding students towards more sustainable practices. Indeed, it is expected that students, through effective participation, will be able to connect sustainability issues to current realities and show a positive attitude in implementing sustainable behaviours to improve the present and future conditions of the planet.

Research limitations. This investigation highlights some limitations. First of all, it's crucial to recognize the limited nature of the sample under study, currently limited to students of the University of Salerno. A further aspect to take into consideration is the voluntary nature of the responses and the possible associated bias, since the use of online surveys could mainly attract students already predisposed or sensitive to the topic of sustainability, with the possibility of introducing a potential distortion in the results.

Managerial implications. The managerial context linked to research entails various challenges and opportunities, requiring an integrated and strategic approach. First of all, it's essential to highlight the importance of integrating sustainability into academic training: universities, as centres of knowledge, must take a leading role in the training of aware and sustainability-oriented professionals, implying not only the inclusion of environmental, economic and social aspects in academic programs, but also the active promotion of courses dedicated to these issues. In parallel, encouraging student engagement emerges as a key element. Encouraging the active participation of students in programs and seminars on sustainability is essential, but even more significant is involving them in practical projects, project work, internships, seminars, the creation of clubs or student associations dedicated to sustainability can promote collaboration and offer students a fertile ground for transforming theoretical knowledge into concrete actions in order to align the behaviours of human beings with the sustainability objectives of the 2030 Agenda. To date, sustainable skills must be at the centre of educational programs, preparing students to face challenges current and future and contribute positively to society.

The adoption of sustainable policies and sustainable practices at the institutional level, engaging faculty, staff and students in a common commitment, is essential to transform universities into effective catalysts for sustainable development.

Originality of the paper. The originality of this research lies in the multidimensional approach adopted to examine environmental sustainability, which also embraces economic and social dimensions. Thanks to an in-depth analysis, we aim to obtain a more detailed and nuanced understanding of sustainability. A distinctive element is represented by the investigation into the gap between the values declared by students regarding sustainability and the actions actually carried out. This approach aims to evaluate the actual transformation of declared intentions into concrete behaviours, thus offering a realistic perspective on the actual individual commitment towards sustainability.

A further point of value, in particular for future research, consists in the prospect of conducting the investigation not only in Italy, but also in other European countries, adopting a cross-cultural perspective in order to highlight cultural variations in knowledge, in values and behaviours related to sustainability. This analysis could identify any cultural

variations in perceptions and behaviours related to sustainability and, therefore, provide valuable insights for effectively adapting educational strategies in diversified contexts.

References

- AJZEN I. (1991), "The Theory of Planned Behavior", *Organizational Behavior and Human Decision Processes*, vol. 50, n. 2, pp. 179-211.
- ALAM M. (2022), "Environmental Education and Non-governmental Organizations", In *The Palgrave Encyclopedia of Urban and Regional Futures* (pp. 495-502), Springer International Publishing.
- ALAM M. (2023), "Activists' heterodox beliefs in fostering urban environmental education in Indonesia. *Local Development and Society*, vol. 4, n. 1, pp. 128-145.
- ALSAATI T., EL-NAKLA S., EL-NAKLA D. (2020), "Level of sustainability awareness among university students in the Eastern province of Saudi Arabia", *Sustainability (Switzerland)*, vol. 12, n. 8.
- AZHAR S.N.F.S., AKIB N.A.M., SIBLY S., MOHD S. (2022), "Students' Attitude and Perception towards Sustainability: The Case of Universiti Sains Malaysia", *Sustainability (Switzerland)*, vol. 14, n. 7.
- BARR S., GILG A. (2006), "Sustainable lifestyles: Framing environmental action in and around the home", *Geoforum*, vol. 37, n. 6, pp. 906-920.
- BONNETT M. (2023), "Environmental consciousness, nature, and the philosophy of education: some key themes", *Environmental Education Research*, vol. 29, n. 6, pp. 829-839.
- BOPARDIKAR A., BERNSTEIN D., MCKENNEY S. (2023), "Designer considerations and processes in developing school-based citizen-science curricula for environmental education", *Journal of Biological Education*, vol. 57, n. 3, pp. 592-617.
- BRONFENBRENNER U., MORRIS P. (1996), "*Ecologia do desenvolvimento humano U. Bronfenbrenner PDF created with FinePrint pdfFactory Pro trial version (Vol. 80)*", "Porto Alegre: Artes Médicas. <http://www.fineprint.com>
- BRUDERMANN T., ASCHEMANN R., FÜLLSACK M., POSCH A. (2019), "Education for sustainable development 4. 0: Lessons learned from the University of Graz, Austria", *Sustainability (Switzerland)*, vol. 11, n. 8.
- CHEMERO A. (2003), "An Outline of a Theory of Affordances", In *Ecological Psychology*, vol. 15, n. 2.
- DE MAGALHÃES C.M.R. (2023), "Corporate social responsibility, business ethics, sustainability, and innovation: a theoretical analysis of the importance of these concepts in times of pandemic", In *Innovation and Sustainable Manufacturing* (pp. 151-178), Woodhead Publishing.
- FABIO R. A., CROCE A. (2024), "The Role of Peace Attitudes on Sustainable Behaviors: An Exploratory Study", *Behavioral Sciences*, vol. 14, n. 2, pp. 120.
- FABIO R.A., CROCE A., CALABRESE C. (2024), "Construction and psychometric properties of the sustainable behavior questionnaire among Italian adults", *Sustainable Development*. <https://doi.org/10.1002/sd.2902>
- FISHBEIN M., AJZEN I. (1997), "*Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.
- FLYNN R., BELLABY P., RICCI M. (2009), "The 'value-action gap' in public attitudes towards sustainable energy: The case of hydrogen energy", *Sociological Review*, vol. 57, SUPPL. 2, pp. 159-180.
- FRISK E., LARSON K.L. (2011), "Educating for sustainability: competencies & practices for transformative action", *Journal of Sustainability Education*, pp. 1-20.
- GAZZOLA P., PAVIONE, E., PEZZETTI R., GRECHI D. (2020), "Trends in the fashion industry. The perception of sustainability and circular economy: A gender/generation quantitative approach", *Sustainability (Switzerland)*, vol. 12, n. 7, pp. 1-19.
- GERICKE N., BOEVE-DE PAUW J., BERGLUND T., OLSSON D. (2019), "The Sustainability Consciousness Questionnaire: The theoretical development and empirical validation of an evaluation instrument for stakeholders working with sustainable development", *Sustainable Development*, vol. 27, n. 1, pp. 35-49.
- GLOBAL CARBON PROJEC. (2023), "Fossil CO2 emissions at record high in 2023", Available Online: <https://Globalcarbonbudget.Org/Fossil-Co2-Emissions-at-Record-High-in-2023/>, Accessed January 30,2024.
- HINES J.M., HUNGERFORD H.R., TOMERA A.N. (1987), "Analysis and synthesis of research on responsible environmental behavior: A meta-analysis", *Journal of Environmental Education*, vol. 18, n. 2, pp. 1-8.
- KANAPATHY S., LEE K. E., SIVAPALAN S., MOKHTAR M., SYED ZAKARIA S.Z., MOHD ZAHIDI A. (2019), "Sustainable development concept in the chemistry curriculum: An exploration of foundation students' perspective. *International Journal of Sustainability in Higher Education*, vol. 20, n. 1, pp. 2-22.
- KANG S.K., BODENHAUSEN G.V. (2015), "Multiple identities in social perception and interaction: Challenges and opportunities", *Annual Review of Psychology*, vol. 66, pp. 547-574.
- KLAPPER R.G., FAYOLLE A. (2023), "A transformational learning framework for sustainable entrepreneurship education: The power of Paulo Freire's educational model. *International Journal of Management Education*, vol. 21, n. 1.
- KLAPPER R. (2022), "*Hand, Head and Heart — holistic thinking, doing & feeling in undergraduate enterprises courses at Manchester Metropolitan University*.
- KLAPPER R., ZITEK A. (2023), "Head, Hands and Heart as supporting transformative learning experiences in sustainable entrepreneurship", *Conference Proceedings, ECSB 3E Conference Aarhus, HEAD*.
- LINDSEY R., DAHLMAN L. (2024), "Climate Change: Global Temperature", Available Online: <https://www.Climate.Gov/News-Features/Understanding-Climate/Climate-Change-Global-Temperature#:~:Text=Global%20temperature%20in%202023&text=In%20July%2C%20August%2C%20and%20September,To%20the%201991%2D2020%20average.>
- MALANDRAKIS G. (2022), "The contribution of sustainability education pedagogies to the development of Greek preservice teachers' sustainability consciousness about social issues in urban environments", *Environmental Education Research*, vol. 28, n. 3, pp. 382-404.
- MCKEOWN R., HOPKINS C. (2003), "EE p ESD: Defusing the worry. *Environmental Education Research*, vol. 9, n. 1, pp. 117-128.

- MOHIUDDIN M., AL MAMUN A., SYED F.A., MASUD M.M., SU Z. (2018), “Environmental knowledge, awareness, and business school students’ intentions to purchase green vehicles in emerging countries. *Sustainability (Switzerland)*, vol. 10, n. 5.
- MSENGI I., DOE R., WILSON T., FOWLER D., WIGGINTON C., OLORUNYOMI S., BANKS I., MOREL R. (2019), “Assessment of knowledge and awareness of “sustainability” initiatives among college students”, *Renewable Energy and Environmental Sustainability*, vol. 4, n. 6.
- NOAA National Centers for Environmental Information. (2024), “Annual 2023 Global Climate Report. Available Online: <https://www.noaa.gov/access/monitoring/monthly-report/global/202313>., Accessed January 30, 2024.
- ROOKES P., WILLSON J. (2005), *Perception: Theory, development and organisation*. Routledge.
- SCHÄUFELE I., HAMM U. (2017), “Consumers’ perceptions, preferences and willingness-to-pay for wine with sustainability characteristics: A review”, In *Journal of Cleaner Production* (Vol. 147, pp. 379-394), Elsevier Ltd.
- SCHIANO A.N., HARWOOD W.S., GERARD P.D., DRAKE M.A. (2020), “Consumer perception of the sustainability of dairy products and plant-based dairy alternatives”, *Journal of Dairy Science*, vol. 103, n. 12, pp. 11228-11243.
- SCHUTTE N.S., BHULLAR N. (2017), “Approaching Environmental Sustainability: Perceptions of Self-Efficacy and Changeability”, *Journal of Psychology: Interdisciplinary and Applied*, vol. 151, n. 3, pp. 321-333.
- SIPOS Y., BATTISTI B., GRIMM K. (2008), “Achieving transformative sustainability learning: Engaging head, hands and heart”, *International Journal of Sustainability in Higher Education*, vol. 9, n. 1, pp. 68-86.
- SMYTH J.C. (2008), “Environment and education: a view of a changing scene”, N.A. Reid, & W. Scott (Eds.), *Researching Education and the Environment*, pp. 1-30.
- TANG K.H.D. (2018), “Correlation between sustainability education and engineering students’ attitudes towards sustainability”, *International Journal of Sustainability in Higher Education*, vol. 19, n. 3, pp. 459-472.
- TUNCER G. (2008), “University student’s perception on sustainable development: A case study from Turkey. *International Research in Geographical and Environmental Education*, vol. 17, n. 3, pp. 212-226.
- UNESCO. (1977), “The Tbilisi Declaration. *Intergovernmental Conference on Environmental Education*, 14-26.
- UNITED NATIONS. (2021), “*Transforming Our World: The 2030 Agenda for Sustainable Development*. Available online: <https://sustainabledevelopment.un.org/post2015/transformingourworld/publication>.
- UNITED NATIONS. (2023), “Times of crisis, times of change”, *Global sustainable development report 2023*.
- UralOVICH K.S., TOSHAMATOVICH T.U., KUBAYEVICH K.F., SAPAEV I.B., SAYLAUBAEVNA S.S., BEKNAZAROVA Z.F., KHURRAMOV A. (2023), “A primary factor in sustainable development and environmental sustainability is environmental education”, In *Caspian Journal of Environmental Sciences* (Vol. 21, Issue 4, pp. 965-975), University of Guilan.
- VESELY S., KLÖCKNER C.A., CARRUS, G., CHOKRAI P., FRITSCHKE I., MASSON T., PANNO A., TIBERIO L., UDALL A. M. (2022), “Donations to renewable energy projects: The role of social norms and donor anonymity”, *Ecological Economics*, vol. 193.
- VINCENZI S.L., POSSAN E., ANDRADE D.F. DE, PITUCO M.M., SANTOS T. DE O., JASSE E.P. (2018), “Assessment of environmental sustainability perception through item response theory: A case study in Brazil”, *Journal of Cleaner Production*, vol. 170, pp. 1369-1386.
- WAGMAN J.B., BLAU J.J. (2019), *Perception as information detection: reflections on Gibson’s ecological approach to visual perception*. Routledge.
- WANG B., UDALL A.M. (2023), “Sustainable Consumer Behaviors: The Effects of Identity, Environment Value and Marketing Promotion. *Sustainability*, vol. 15, n. 2, pp. 1129.
- WANG Q., HAO, M., HELMAN D., DING F., JIANG D., XIE X., CHEN S., MA T. (2023), “Quantifying the influence of climate variability on armed conflict in Africa, 2000-2015. *Environment, Development and Sustainability*, vol. 25, n. 9, pp. 9289-9306.
- WCED. (1987), “*Report of the World Commission on Environment and Development: Our Common Future*. <http://www.un-documents.net/wced-ocf.htm>
- WHITE R.L., STRUBBE D., DALLIMER M., DAVIES Z.G., DAVIS A., EDELAAR P., SHWARTZ A. (2019), “Assessing the ecological and societal impacts of alien parrots in Europe using a transparent and inclusive evidence-mapping scheme. *NeoBiota*, vol. 48, pp. 45-69.
- WWF. (2023), “DA OGGI PER TUTTO IL RESTO DEL 2023 SIAMO IN DEBITO CON LA TERRA. Available Online: <https://www.wwf.it/Pandanews/Societa/Mondo/Il-2-Agosto-e-Learth-Overshoot-Day-2023/#:~:Text=Oggi%20%C3%A8%20l'Earth%20Overshoot,Nell'arco%20di%20un%20anno>, Accessed on 3 February 2024.

Websites

<http://www.societamanagement.it>
<http://www.sinergiejournal.it>

Understanding the link among cultural participation, resilience, and well-being.

A systematic literature review.

GIORGIA MASILI¹ DANIELE BINCI²

Abstract

The scientific community is increasingly aware of cultural participation's role in enhancing the well-being of individuals and communities. Our paper aims to provide a more comprehensive understanding of this role through a systematic literature review that follows the PRISMA approach and sets future research and policy development directions.

Keywords: cultural participation; cultural engagement; well-being; subjective well-being; resilience

Aim of the paper. *The prosperity of a community can be characterised as a collective advantage for all its members, indicating the attainment of sufficient economic progress and the consequent favourable perception of individuals regarding their rightful position within society, exemplified by their quality of life (Ivković et al., 2014). The concept of well-being (Ryff et al., 2021) is considered a multifaceted (D'Agostino et al., 2019) and multidisciplinary concept which embraces several disciplines, from philosophy to psychology, economics, healthcare, and education (Burr and Floridi, 2020; Das et al., 2020). It is a complex concept which involves "cognitive and emotional evaluations, driven by objective as well as subjective factors" (Addis and Rurale, 2024, pag. 3). Indeed, the existing body of literature identifies two dimensions of well-being: objective well-being (OECD, 2013) which can be seen as an outcome and a reflection of tangible living conditions, and subjective well-being (Diener, 1984;2018; Kapteyn et al., 2015) generally identified as the perception of individuals on their living conditions (Alatartseva and Barysheva, 2015). Moreover, the psychology literature distinguished between two main approaches to well-being: hedonic and eudaimonic (Ryff et al., 2021; Waterman 1993). The hedonic approach is connected to pleasant and unpleasant experiences in life, and its components are represented by life satisfaction and positive and negative effects. On the other hand, the eudaimonic approach (Ryff & Singer, 2008) includes different dimensions such as self-acceptance, positive relations with others, environmental mastery, autonomy, and personal growth which are related to the "different challenges that individuals encounter as they strive to function positively" (Ryff et al., 2021, pag. 97).*

Today, scholars have increased their interest in the role of art and cultural participation in individuals' well-being as they can be crucial for enhancing it (Fancourt and Finn, 2019; An et al., 2022). Cultural participation can be identified as a comprehensive term which has constantly broadened its scope to incorporate an evolving range of activities, driven by shifts in social and cultural dynamics (Murray, 2006). It can be seen as the act of engaging in various cultural activities (Stevenson et al., 2017) and experiences and it acknowledges the audience as an engaged conversational partner, to be consulted or included in the process of planning and crafting the cultural offerings (OECD, 2022). It can be expressed with active or passive involvement (Passaretti et al., 2023). Through active involvement, individuals directly contribute to creating the cultural experience itself, while the passive form concerns the enjoyment of experiences and content crafted by others (Grossi et al., 2011). However, the lack of a wider and more comprehensive definition obstacles the policymakers in promoting new active forms of cultural participation that can have a significant social and economic impact (Sacco et al. 2018). Several studies underline the positive impact of cultural participation on individuals' overall well-being and subjective well-being in particular (Reyes-Martínez et al., 2021;2023; Blessi et al., 2016). Indeed, although culture might not explicitly dictate life expectancy or physical well-being, its influence on individuals' well-being is significant. It can enhance resilience (Wagnild, 2009) and contribute to developing lively and thriving communities (Grossi et al., 2011). Engaging in cultural activities encompasses the diverse methods and expressions through which individuals can avail themselves of cultural artefacts and encounters (OECD, 2022).

Through a systematic examination of existing literature, our paper strives to offer a more thorough comprehension of cultural participation's impact (especially about active involvement) on individuals' well-being by answering the following research question: What is the role of cultural participation in individuals' well-being?

¹ University of Roma Tre
e-mail: giorgia.masili@uniroma3.it

² University of Rome Tor Vergata
e-mail: daniele.binci@uniroma2.it

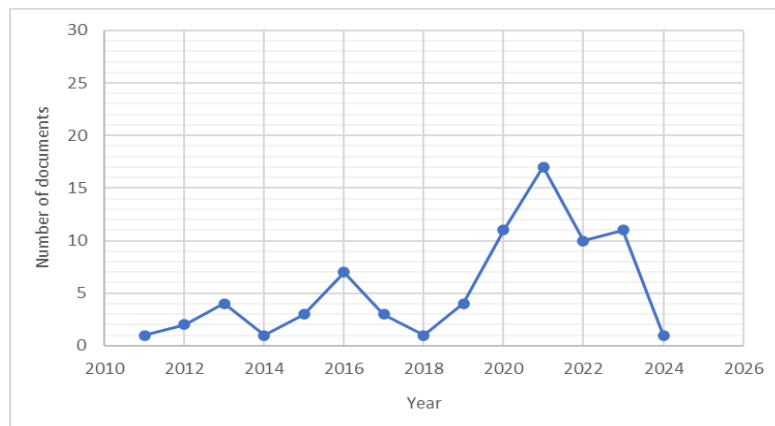
Methodology. According to Moher et al. (2015;2009), we developed a systematic literature analysis by adopting the PRISMA approach, which follows four main steps: identification, screening, eligibility, and inclusion. Such an approach proves beneficial for examining, summarising, and conceptualising pivotal themes and emerging topics, encompassing their implications for future research. First, we developed the research by adopting the Scopus search engine, from which we collected the articles. Two sets of keywords related to “cultural experiences” and “well-being” were selected and combined to conduct the research. The first set of keywords included terms such as “cultural experiences”, “cultural consumption”, “cultural engagement”, and “cultural participation” as they were related to the aspect of cultural experiences consumption. The second set of keywords was based on individuals’ well-being under cultural consumption, and it included terms such as “well-being”, “eudaimonia”, “hedonic”, and “quality of life”, Refining and combining the keywords in the two blocks allowed us to identify 281 studies.

In the second step, according to the screening criteria, we collected articles written in English that had already been published. We considered articles published in social science, business management, and psychology between 2010 and 2024 (Figure 1). The choice of including articles in the psychology field of research is related to the multi-disciplinarity of the research on well-being. Accordingly, we identified and selected 113 documents.

The third step included analysing the abstracts to ensure that only those strictly related to the topic of cultural consumption and well-being were considered. Therefore, 29 articles were excluded as irrelevant, and 84 articles remained for the literature review. Then, each author independently analysed the sample of 84 articles to ensure their eligibility according to the study’s goals. Through the full-text analysis, 8 papers were excluded as irrelevant.

In the fourth and final step, we validate each article according to the study’s goals, identify the leading research categories and trends and formulate recommendations for future studies (Bretas & Alon, 2021).

Figure 1 - Time span of articles distribution



Source: author’s elaboration on Scopus data

Findings. In this section, the authors present the descriptive analysis of the selected papers. A dedicated analysis of the 76 full articles identified was developed to ensure that only the articles related to well-being and cultural participation were included. All of them were pertinent to be examined to synthesise the results identified, presenting the interpretations associated with the paper’s subject matter. More in detail, as clearly visible in Figure 1, the majority of the scrutinised articles were published between 2020 and 2023, underlining a pick in publications in 2021, signifying an increasing interest in the topic of well-being in connection with cultural participation and experiences.

Following the Scopus database classifications, the articles were reconducted to subject areas, as shown in Table 1. The most populated categories are related to studies in social science and psychology. However, due to the multidisciplinary of the topic under study, several articles were conducted under the category “others,” which outlines the fragmentation of the literature and the different perspectives adopted in studying the phenomenon.

Table 1 - Distribution of the paper across areas

Type of Journal	Number of articles	%
Social science	23	30,26%
Psychology	20	26,32%
Arts and Humanities	7	9,21%
Sustainability	6	7,89%
Business, management	5	6,58%
Economics	4	5,26%
Urban Studies	3	3,95%
Others	8	10,53%
Total	76	100,00%

Source: Authors’ elaboration

The articles analysed were categorised based on their typology (theoretical or empirical) and according to the methodological approach adopted, as indicated in Table 2. Most of the articles identified conducted quantitative empirical analyses, followed by qualitative empirical and mixed-methods articles. The lack of literature review studies on the topic makes our contribution coherent and useful.

Table 2 - Distribution of the paper across research methodologies

Type of paper	Method	Number of articles	%
Theoretical	Literature review	2	2,63%
	Conceptual paper	1	1,32%
Empirical	Quantitative	44	57,89%
	Qualitative	18	23,68%
	Mixed Method	11	14,47%
TOTAL		76	100,00%

Source: Authors' elaboration

Thematic analysis. The first general evidence from the thematic analysis conducted on the selected articles confirms that participation and consumption of cultural activities and cultural engagement contribute to human/individuals' well-being in different forms, as underlined in past studies. Indeed, participation in cultural activities and frequenting cultural sites (e.g., museums, galleries, theatres, sports events, etc.) represent important elements for enhancing well-being in terms of mental illness, self-realisation and life satisfaction not only in young generations but also in older adults (Crociata et al., 2014; Tymoszek et al., 2019).

The second important piece of evidence concerns the role of cultural participation and access to art during the pandemic. Indeed, a group of studies highlight how online engagement that was possible due to the adoption of technologies by cultural institutes and the promotion of online activities, events, etc., contributed to the enhancement of the well-being of individuals and continued producing benefits also during the period of transition back to in-person engagement (Mak et al., 2021; Anisimovich et al., 2022). Indeed, adopting technologies to bring cultural contribution to the virtual environment stimulated curiosity and transformed the interaction between arts and cultural institutes and their public underlining. Online cultural engagement in several forms has represented a fundamental tool to contrast the state of anxiety and loneliness and enhance individuals' well-being during the pandemic lowering the fear related to its negative impact (Trupp et al., 2022; Gotthardt et al., 2023). Virtual access to culture and arts stimulated people to engage online and benefit from the positive impact on their mental health and well-being deriving from that experience. The positive effects also lasted after the pandemic, especially for individuals with limited access to onsite events or activities. Indeed, virtual access favoured connectivity with other communities by enriching the in-persons' experience and encouraging a deeper connection in local culture (Caiola et al., 2023) but also demonstrating the crucial role of cultural activities and participation in arts for processing trauma (Anisimovich et al., 2022). These studies underline that if online engagement is well supported by interesting and meaningful content, it "inspires cognitive-emotional states in the viewer" (Trupp et al., 2022). In particular, the strongest predictors of engagement in arts during the pandemic are identified in age, education attainment, social support and emotion-focused or supportive coping styles and show evidence of the fact that engaging in arts activities represented for most individuals a strategy to cope with the negative emotions indicted by the pandemic and to improve self-development and resilience increasing their well-being (Mak et al., 2021; Chapple et al., 2023).

The third important piece of evidence emerging from the analysis of the literature concerns the fact that having access to arts and culture contributes to building social cohesion, identity, a sense of belonging and increasing well-being (Piscitelli, 2020). Accordingly, the importance of developing adequate policies to support subjective well-being by leveraging the promotion of cultural activities is highlighted. Indeed, facilitating access to arts and supporting engagement in art and culture might enhance the subjective well-being of individuals and communities (Anisimovich et al., 2022). Moreover, culture-based public health programs and policies and the adoption of innovative strategies in designing welfare policies are described as potential fundamental tools for enhancing well-being (Crociata et al., 2014; Grossi et al., 2019). Policy development should promote engagement in arts and culture consumption at different stages of individual lives. Indeed, when engagement in art and cultural consumption begins very early in life, it is more likely to continue (Espinosa et al., 2021). However, participating in such activities correlates with increased levels of education, improved socioeconomic status, and a reduced incidence of health issues (Tymoszek et al., 2019). Therefore, investments in cultural education and effective policies to reduce inequalities in accessing cultural activities and art consumption might foster engagement and positively impact individuals' well-being.

Research Limits. The limitations of our paper mainly relate to the criteria adopted in the selection step. Indeed, by circumscribing to specific study areas, focusing only on articles written in English, and excluding sources of evidence such as conference papers, book chapters, etc., we might not have considered other potentially relevant sources of evidence. In addition, at this stage, this paper shows some of the evidence from the analysis of the articles since the process of analysis is still under development. Moreover, this explorative study considers cultural activities in general.

We need to analyse and focus on different cultural activities and how they differently impact subjective well-being and other important outcomes.

Theoretical and practical Implications. Our paper contributes to the analysis of the link between cultural participation, resilience, and well-being. The multidisciplinary nature of the studies on well-being shed light on the necessity of better understanding the contribution derived from various fields of research and the importance of cultural participation. Therefore, the summarisation of the current literature concerning the role played by culture in increasing individuals' well-being can represent a point of departure for scholars to identify future research insights and advance new contributions. Moreover, by clarifying the role of participation in cultural activities and art in increasing individuals' well-being, it might be possible to suggest guidelines for policymakers and organisations involved in the sector. From a practical point of view, we suggest that participation in cultural events should be fuelled both online and in-person, according to the specific needs of the target markets. Given the potential positive benefits of cultural participation both for new generations as well as older people, it is important to enable virtual and traditional opportunities for target users to benefit from culture and art.

Originality/value. Few literature reviews have been conducted on the relationship between well-being, resilience and cultural participation. This Systematic Literature Review offers a broad view of those studies focusing on the impact of cultural participation on individual well-being. By considering the multidisciplinary nature of well-being, we adopted a holistic approach that considers studies in several disciplines, such as management, psychology, and social sciences. This approach allows us to have a cross-disciplinary overview of the phenomenon, collecting different elements that can be insightful to set up guidelines for policymakers and companies that work in the cultural sector aiming at improving their social impact on society and increasing individuals' and communities' well-being and resilience.

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References

- ADDIS M., RURALE A. (2024), “Advancing arts philanthropy practices for well-being”, *Journal of Philanthropy and Marketing*, vol. 29, n. 1, e1828.
- ALATARTSEVA E., BARYSHEVA G. (2015), “Well-being: subjective and objective aspects”, *Procedia-Social and Behavioral Sciences*, vol. 166, pp. 36-42.
- AN D., JEONG B. R., YOUN N. (2022), “Effects of art consumption on consumer well-being”, *Journal of Consumer Affairs*, vol. 56, n. 2, pp. 685-702.
- ANGNER E. (2010), “Subjective well-being”, *The Journal of Socio-Economics*, vol. 39, n. 3, pp. 361-368.
- ANISIMOVICH A., CHAPPLE M., WORSLEY J., WATKINS M., BILLINGTON J., BALABANOVA E., (2022), “Back to live: Returning to in-person engagement with arts and culture in the Liverpool City Region”, *Frontiers in Psychology*, 6835.
- ASCOLANI F., CACOVEAN C., PASSARETTI A., PORTALURI T., SACCO P.L., UBOLDI S., ZBRANCA R. (2020), Art consumption and well-being during the Covid-19 pandemic, Research Report. Retrieved from: <https://art-wellbeing.eu/wp-content/uploads/2021/02/Research-Art-Well-being-during-Covid-19.pdf> Accessed 24/02/2024.
- BLESSI G., GROSSI E., SACCO P., PIERETTI G., FERILLI G. (2016), “The contribution of cultural participation to urban well-being. A comparative study in Bolzano/Bozen and Siracusa, Italy”, *Cities*, vol. 50, pp. 216-226.
- BRETAS V.P., ALON I. (2021), “Franchising research on emerging markets: Bibliometric and content analyses”, *Journal of Business Research*, vol. 133, pp. 51-65.
- BURR C., FLORIDI L. (2020), “The Ethics of Digital Well-Being: A Multidisciplinary Perspective”, In: Burr, C., Floridi, L. (eds) *Ethics of Digital Well-Being. Philosophical Studies Series*, vol 140. Springer, Cham.
- CAIOLA V., MOREIRA KARES E., PILLAN M., SPALLAZZO D., TUOMI A. (2023), “Remote Cultural Events: Investigating the Usefulness of Live Streaming for Creating Cultural and Social Engagement in Communities of Older Adults”, *Sustainability*, vol. 15, 10594.
- CHAPPLE M., ANISIMOVICH A., WORSLEY J., WATKINS M., BILLINGTON J., BALABANOVA E. (2023), “Come together: The importance of arts and cultural engagement within the Liverpool City Region throughout the COVID-19 lockdown periods”, *Frontiers in Psychology*, vol. 13, 1011771.
- CROCIATA A., AGOVINO M., SACCO P.L. (2014), “Cultural access and mental health: An exploratory study”, *Social Indicators research*, vol. 118, pp. 219-233.
- DAS K.V., JONES-HARRELL C., FAN Y. ET AL. (2020), “Understanding subjective well-being: perspectives from psychology and public health”, *Public Health Rev*, vol. 41, pp. 1-32
- DIENER E., OISHI S., TAY L. (2018), “Advances in subjective well-being research”, *Nature human behaviour*, vol. 2, n. 4, pp. 253-260.
- DIENER E. (1984), “Subjective well-being”, *Psychological Bulletin* vol. 95, pp. 542-575.
- D'AGOSTINO A., GRILLI G., REGOLI A. (2019), “The Determinants of Subjective Well-Being of Young Adults in Europe”, *Applied Research Quality Life*, vol. 14, pp. 85-11.
- ESPINOSA A.E., MARTOS L.P., QUINTERO L.A. (2021), “Who Participates in Popular Feasts and Festivals? An Empirical Approach from Cultural Economics Applied to the Carnival of Barranquilla (Colombia)”, *Scientific Annals of Economics and Business*, vol. 68, pp. 79-103.

- FANCOURT D., FINN S. (2019), "What is the evidence on the role of the arts in improving health and well-being? A scoping review", World Health Organization. Regional Office for Europe. Retrieved from https://iris.who.int/handle/10665/329834?trk=public_post_comment-text
- GOTTHARDT K.A., RAKOCZY K., TALLON M., SEITZ M., FRICK U. (2023), "Can the arts cure pandemic hearts? Cultural activity during the COVID-19 pandemic and its consequences for psychological well-being", *Empirical Studies of the Arts*, vol. 41, n. 1, pp. 3-30.
- GROSSI E., SACCO P.L., BLESSI G.T., CERUTTI R. (2011), "The impact of culture on the individual subjective well-being of the Italian population: An exploratory study. *Applied research in quality of life*, vol. 6, pp. 387-410.
- GROSSI E., TAVANO BLESSI G., SACCO P.L. (2019), "Magic moments: determinants of stress relief and subjective wellbeing from visiting a cultural heritage site", *Culture, Medicine, and Psychiatry*, vol. 43, n. 1, pp. 4-24.
- IVKOVIĆ A.F., HAM M., MIJOČ J. (2014), "Measuring objective well-being and sustainable development management", *Journal of Knowledge Management, Economics and Information Technology*, vol. 4, n. 2, pp. 1-29.
- KAPTEYN A., LEE J., TASSOT C., VONKOVA H., ZAMARRO G. (2015), "Dimensions of subjective well-being", *Social indicators research*, vol. 123, pp. 625-660.
- MAK H.W., FLUHARTY M., FANCOURT D. (2021), "Predictors and impact of arts engagement during the COVID-19 pandemic: analyses of data from 19,384 adults in the COVID-19 social study", *Frontiers in Psychology*, vol. 12, pp. 626263.
- MOHER D., SHAMSEER L., CLARKE M., GHERSI D., LIBERATI A., PETTICREW M., SHEKELLE P., STEWART L.A., PRISMA-P GROUP. (2015), "Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement", *Systematic Reviews*, vol. 4, n. 1., pp. 1-9.
- MOHER D., LIBERATI A., TETZLAFF J., ALTMAN D.G., PRISMA GROUP* T. (2009), "Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement", *Annals of Internal Medicine*, vol. 151, n. 4, pp. 264-269.
- MURRAY C. (2005), "Cultural Participation: A Fuzzy Cultural Policy Paradigm", In Andrew C., Gattinger M., Jeannotte M.S., Straw W. (Eds.), *Accounting for Culture: Thinking Through Cultural Citizenship*. Les Presses de l'Université d'Ottawa | University of Ottawa Press. Retrieved from <http://books.openedition.org/uop/2397>
- OECD (2022), *The Culture Fix: Creative People, Places and Industries, Local Economic and Employment Development (LEED)*, OECD Publishing, Paris. <https://doi.org/10.1787/991bb520-en>
- OECD (2013), *OECD guidelines on measuring subjective well-being*. European Union: OECD Publishing. <https://doi.org/10.1787/9789264191655-en>
- PASSARETTI A., ARUTA L., SCUOTTO C., IVANO AMBRA F. (2023), "The role of culture in enhancing well-being and soft skills: from passive to active participation", *Form@ re-Open Journal per la formazione in rete*, vol. 23, n. 1, pp. 21-35.
- PISCITELLI B. (2020), "The best day in my whole entire life'-Young Children, Wellbeing and the Arts", *International Journal of Art & Design Education*, vol. 39, n. 2, pp. 377-391.
- REYES-MARTÍNEZ J., MARTÍNEZ-MARTÍNEZ O.A., LOMBE M., PIÑEROS-LEAÑO M. (2023), "Exploring the influence of cultural participation on the subjective well-being of victims in Mexico", *Front. Psychol.* vol. 13, 1082216.
- REYES-MARTÍNEZ J., TAKEUCHI D., MARTÍNEZ-MARTÍNEZ O.A., LOMBE M. (2021), "The role of cultural participation on subjective well-being in Mexico", *Applied Research in Quality of Life*, vol. 16, pp. 1321-1341.
- RYFF C.D., MOROZINK BOYLAN J., KIRSCH J.A. (2021), "Eudaimonic and Hedonic Well-Being: An Integrative Perspective with Linkages to Sociodemographic Factors and Health", in Lee M. T., Kubzansky L. D., VanderWeele J. T. (eds), *Measuring Well-Being: Interdisciplinary Perspectives from the Social Sciences and the Humanities* (New York, 2021; online edn, Oxford Academic, 22 Apr. 2021),
- RYFF C.D., SINGER B.H. (2008), "Know Thyself and Become What You Are: A Eudaimonic Approach to Psychological Well-Being", *Journal of Happiness Studies*, vol.9, pp. 13-39.
- SACCO P.L., FERILLI G., TAVANO & BLESSI G. (2020), "From Culture 1.0 to Culture 3.0: Three Socio-Technical Regimes of Social and Economic Value Creation through Culture, and Their Impact on European Cohesion Policies", *Sustainability*, vol. 10, n. 11, 3923.
- STEVENSON D., BALLING G., KANN-RASMUSSEN N. (2017), "Cultural participation in Europe: shared problem or shared problematisation?", *International Journal of cultural policy*, vol. 23, n. 1, pp. 89-106.
- TRUPP M.D., BIGNARDI G., CHANA K., SPECKER E., PELOWSKI M. (2022), "Can a brief interaction with online, digital art improve wellbeing? A comparative study of the impact of online art and culture presentations on mood, state-anxiety, subjective wellbeing, and loneliness", *Frontiers in Psychology*, vol. 13, 782033.
- TYMOSZUK U., PERKINS R., SPIRO N., WILLIAMON A., FANCOURT D. (2020), "Longitudinal associations between short-term, repeated and sustained arts engagement and well-being outcomes in older adults", *The Journals of Gerontology: Series B*, vol. 75, n. 7, pp. 1609-1619.
- WAGNILD G.R.N. (2009), "A review of the resilience scale", *Journal of Nursing Measurement*, vol. 17, n. 2, pp. 105-13.
- WATERMAN A.S. (1993), "Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment", *Journal of Personality and Social Psychology*, vol. 63, n. 3, pp. 193-210.

Shaping tomorrow's sustainable enterprises: profiling the hard and soft skills of sustainable managers

GIULIA NEVI¹ GIULIA GOGIALI² GIANPAOLO BASILE³ LUCA DEZI⁴ CARMELA GUITTO⁵

Abstract

Despite the growing importance of sustainability in the enterprise, a knowledge gap exists regarding the specific roles and skills of professionals managing it. This research explores the key characteristics and differences between three sustainability professions: CSR Manager, Sustainability Manager, and ESG Manager. Employing a qualitative approach, the study conducts a content analysis of job advertisements for each position (n=146) posted on LinkedIn and similar platforms between June and September 2023. The analysis aims to identify the main hard and soft skills companies demand when seeking these sustainability professionals. This research sheds light on the evolving landscape of corporate sustainability management, offering valuable insights for companies seeking qualified personnel and individuals aspiring to enter these fields. It is also a study that opens critical reflections on what may be new professional figures that will emerge to manage the challenges of the near future such as the stakeholder manager and the ecosystem manager.

Keywords: ESG manager; CSR manager; Sustainability manager; Ecosystem Manager, Stakeholder Manager; Human resource,

Framing of the research. Several scholars, including Rasoulinezhad (2020), Zakari et al. (2022) and Sun et al. (2023), agree that the future well-being of humanity depends on the adoption of sustainable development practices. They argue that any alternative to sustainable development undermines economic stability and exacerbates the depletion of natural resources, increasing the threats of global warming and climate change. For this reason, companies are showing an increasing interest and focus on environmental and social issues, especially concerning ethical and responsible corporate behaviour (Baumgartner & Winter, 2014). Corporate Social Responsibility (CSR) is a governance tool that facilitates a possible 'match' between organizations and their stakeholders. CSR represents a strategic approach aimed at two goals: taking charge of the harmful effects and being aware of the social dimension of the organization, contributing to answering community needs. The business models are increasingly configured as "stakeholder-based," demonstrating that businesses dealing with competitive, environmental, and social challenges must create and manage bidirectional relationships with heterogeneous actors. This trend offers a framework and guidelines to ensure that the company acts responsibly towards and with its internal shareholders, employees, and other stakeholders, such as the local community, suppliers, customers and the environment (Del Baldo, 2010; Sciarelli, 2002). CSR aims to create value for communities and companies, improving social legitimation and reputation, investor trust and employee satisfaction (Van de Ven, 2008; Skudiene and Auruskeviciene, 2012). The evolution of the concept of sustainability and the adoption of more responsible business practices have led to new conceptualisations such as the ESG pillars - Environmental, Social, and Governance, in which, unlike CSR, it considers financial and non-financial performances as the company's objectives (Galbreath, 2013; Gillan et al., 2021). The pillars of ESG are also born with the hope of measuring companies' environmental, social, and governance performance through standardized and shared metrics; despite that, the road is still long, so the impact of taking ESG criteria could create real value. This was an obstacle since the results could not be measured or compared, as they were subjective. The concept of ESG has a vast literature but still with considerable research potential (De Falco et al. 2024). Faced with thus having to cope with new and sought-after sustainable needs, companies have discovered themselves bereft of professional figures capable of meeting them. New professional figures

¹ Politecnica delle Marche University
e-mail: g.nevi@staff.univpm.it

² Sapienza University of Roma
e-mail: giulia.gogiali@uniroma1.it

³ Sapienza University of Roma
e-mail: gianpaolo.basile@uniroma1.it

⁴ Sapienza University of Roma
e-mail: luca.dezi@uniroma1.it

⁵ Sapienza University of Roma
e-mail: gutto.2020194@studenti.uniroma1.it

have naturally responded to these new needs, duties and rights (Camargo et al., 2023). Thus, in addition to the CSR, we have the ESG Manager, who is in charge of guiding and implementing environmentally, socially and governance-oriented corporate strategies (Munoz et al., 2014; Van Duuren et al., 2016) and the Sustainability Manager (SM) (Borglund et al., 2023), who represents the highest-ranking position within the organisation dedicated to overseeing sustainability initiatives. Its emergence reflects the increasing significance of corporate social responsibility (CSR) and sustainability within the business landscape (Wright et al., 2012; Borglund et al., 2023). Such professions require specific skills; they are crucial in ensuring effective business operations management and creating long-term value. In this context, we speak of soft and hard skills. Soft skills refer to skills or behavioural personality characteristics manifested in everyday life (Mohd et al., 2024). They can be described as knowledge inherent in the human mind and very personal, involved in experiences, actions and ideals (Chen et al., 2018). These skills are fundamental to preparing for work and include communication skills, thinking skills, creativity, leadership, problem-solving, management, continuous learning and teamwork skills (Mohd et al., 2024; Cimatti, 2016). On the other hand, hard skills are associated with the ability to use specialised tools, procedures and techniques (Ahmad et al., 2020; Cimatti et al., 2016). These competencies are required to apply specific knowledge and skills in a real work context.

Purpose of the paper. There has been no shortage of changes concerning job positions, which have increasingly evolved to the development of new figures at the managerial level: the sustainability manager, the CSR manager, and the ESG manager, each with their responsibilities, tasks, and skills. Despite the importance of these figures in the corporate landscape, there still needs to be more knowledge regarding the qualifications, job responsibilities and hard and soft skills of professionals in charge of strategic corporate sustainability management (Macdonald et al., 2020). This paper aims to answer the research question: "What are the main characteristics and differences between the new professions called upon to manage sustainability: CSR manager, Sustainability Manager, and ESG manager?"

Methodology. In answering this research question, a qualitative approach was adopted by conducting a content analysis to map the skills of the three professional figures listed: the CSR manager, the sustainability manager, and the ESG manager. To analyse and deepen the phenomenon, research was carried out on specific job offers for each of the 3 relevant figures: Sustainability manager (n =50), ESG manager (n=47), and CSR manager (n=49), to identify the main skills required by companies. Offers published on LinkedIn or other professional search channels from June to September 2023 were investigated.

Results. An initial review shows that these figures must possess many competencies, including leadership, problem-solving skills, transparency, and teamwork, to successfully address sustainability challenges (Borglund et al., 2023). Now, we present the characteristics specific to each analyzed figure.

The "CSR manager" is responsible for developing CSR-oriented corporate strategies that align with the company's values. His or her role is to ensure that a company operates in a socially responsible manner, contributing to and positively impacting the environment. From our analysis, the CSR manager is not only required to have a degree in STEM subjects, but companies also expect him/her to be a doctor in communication to support the disclosure activities. The role of the CSR manager generally covers these responsibilities: 1. strategy development; 2. stakeholder and community engagement; 3. reporting; 4. communication; 5. business integration. The online research work for the CSR manager, on the base of 49 announcements (4 companies of human resources; 6 employment agencies; 8 agencies specialising in fashion and clothing; 6 agencies operating in the energy and environment sector; 4 companies operating in the large-scale distribution and organized production of goods and products; 21 other sectors). The Main Hard skills aspected are knowledge of the English language (n=36); a university degree (n=30); knowledge of the Office package (n=15); knowledge of relevant regulations and new taxonomies on environment issues but not confined them knowledge of GRI standards (n=13), finally know how to develop reports and CSR principles (n= 6). Soft skills, in order of importance, are communication and interpersonal skills (n=24); problem-solving skills (n=18); teamwork skills (n=15); flexibility and proactivity (n=10); curiosity, interest and passion for the subject (n=8); possession of analytical skills (n=9); time management (n=3).

The "sustainability manager" is a new figure that has emerged recently. When creating a 'sustainable' corporate strategy it became a managerial task and was no longer carried out at arm's length. Initially, this figure only dealt with sustainable reporting and the sustainability report; today, these are only some tasks he or she performs. At first, therefore, it was internal figures within companies who showed a strong interest in the topic of sustainability. During the period in analysis, 50 announcements were posted for the position (9 consulting and business services companies; 4 consulting and it services companies; 7 human resources services companies; 2 financial services companies; 11 personnel services and recruitment companies; 18 miscellaneous services companies, such as professional services, real estate, freight transport). Today, following a path of increasing development, the Sustainability manager has reached a managerial role, with specific skills and tasks to deal with all environmental, social and economic issues to build the company's business strategy. Thus, his role in the company has a twofold objective: developing various reports, mainly related to sustainability reports, and defining the business strategy from a sustainable perspective. These two objectives are increasingly complex as the company itself grows. The Main Hard skills required are knowledge of the English language (n=36), degrees in STEM subjects (n=43), knowledge of ISO standards (n=22), knowledge of the Office package (n=15), reporting skills (n=8); to a lesser extent, the following are required experience in sustainability reporting (n=8), experience with Autocad (n=5), possession of other sustainable certifications (n=3). The main soft skills to take into account are teamwork (n=25), problem-solving (n=18), communication (n=21), passion and leadership qualities (n=7), critical and analytical thinking (n=3), and goal-oriented (n=3). The sustainability manager is a specialist who carries out the task of transforming the company into a sustainable reality, managing the company's environmental, economic,

and social impact, and ensuring that the business is sustainable in every respect. She/He aims to optimize the company's processes in compliance with laws and regulations and to research new sustainable initiatives. He achieves this by meeting three thematic requirements: understanding the evolution of ESG standards and their impact on market dynamics, driving the evolution of environmental systems towards sustainability, and promoting a CSR corporate culture.

The 'ESG manager', defined by the Randstad platform, is a professional who develops strategies that impact the environment, society and corporate governance while remaining aligned with corporate values. This figure was born following the emergence and development of ESG standards in 2006. Among the many tasks he or she may be involved in, the main ones are ESG assessment and reporting, ESG integration in corporate strategies, and external ESG communication: risk and opportunity assessment. 47 announcements were reviewed (4 companies are operating in the business services sector; 11 are recruiting professionals; 4 are IT consultancy; 4 are operating in the credit and finance sector; 24 out of 50 companies are from various sectors). From this review, the Hard skills most required are English language (n=35), knowing how to analyse KPIs (n=15), knowing how to use Office Package (n=12), knowing sustainability regulations and stay up-to-date on them (n=11), know how to develop a sustainability budget and reports (n=10), know GRI standards and how to apply them (n=10), as a basis, as for the other positions, possess a master's or specialist degree with a strong interest in STEM subjects (32). Compared to other advertisements, the Soft skills required for this figure still need to be clarified. In fact, in many advertisements, they were often not made explicit. The analysis identified the following as the main ones for soft skills: teamwork (n=22), interpersonal and communication skills (n=21), problem-solving skills (n=18), being able to work autonomously (n=9), being proactive (n=8), being able to organise oneself and be a leader (n=7), having a passion for sustainability (n=6), feeling motivated (n=6).

A comparison of the three figures shows that in terms of hard skills are more specific and different, although common factors are now knowledge of English and the Office package and the most relevant ISO standards. As it emerges, the CSR manager is more oriented towards reputation and public relations management. In contrast, the Sustainability manager focuses more on reporting and certification and the knowledge of software such as Autocad. What is also interesting is how, in many cases, the differences in the skills required for these managers are determined by the sector and the size of the company that has to report or comply with specific sustainability obligations. In terms of demand for soft skills, the most in-demand are interpersonal and communication skills, the ability to work in a team and problem-solving skills.

The growing demand for these skills, coupled with the great development of platforms and networks by companies to have a sustainable view and management of the entire value chain and as posit in Argyres et al. (2019) on their theory of partnership, is possible to be prodromal to the emergence of a new professional figure that is already appearing on job platform ads such as LinkedIn.

Reference is made in particular to two new figures. The first is the "Stakeholder manager" will need to demonstrate the ability to manage broad stakeholder networks for the development of projects with primarily environmental and social impacts, be able to identify key stakeholders and be proactive in conflict resolution and the promotion of positive stakeholder involvement in the organisation or project. In addition to great critical skills, interpersonal mediation skills and resilience, it will be important to mature a "Stakeholders skill".

The second is the "Ecosystem manager" on the other hand, will be responsible for orchestrating, managing and being a voice within large innovative and non-innovative ecosystems, such a figure will not only be concerned with sustainability, but with ensuring both the growth, resilience of the ecosystem and the assessment of its impact at different levels and the safeguarding and support in the realisation of common goals among the different ecosystem actors.

Research limitations. This study suffers from particular limitations, hopefully paving the way for future research. The sample of advertisements selected is purely Italian. In the future, it will be interesting to extend the analysis to European countries or countries where interest in and legislation towards sustainability is different, e.g., emerging or more attentive and developed countries. It will then be essential to extend the research by conducting qualitative surveys to understand whether the real demand for skills is confirmed in professional practice in the tasks and activities these managers must perform. In addition, future research will have to capture any misalignment between the different figures and the skills trained by universities and other training centres. It will also be interesting to monitor how, over time and across business sectors, the three figures will change; for example, there is an increasing tendency to separate the different pillars of sustainability in administrative management, and environmental management is assigned to specific figures, more of an engineering nature, while the new diversity managers increasingly carry out social management.

Managerial implications. This extended abstract has several implications for management. The roles analysed require various skills, including leadership, problem-solving, transparency and teamwork skills. Companies should invest in ongoing training to develop these skills in their CSR, sustainability, and ESG managers. As interpersonal skills, teamwork, problem-solving, and capabilities to create and manage relations (engagement) with heterogeneous agents emerge as the most in-demand soft skills, companies should emphasise selecting and developing managers with these skills. This emphasises the importance of a more holistic approach in assessing soft skills, with particular attention to elements such as emotional management and interpersonal skills, which can substantially influence work dynamics and leadership in sustainability-oriented contexts. Coaching and mentorship programs can help improve these skills. Given the increasing complexities of the responsibilities assigned to these roles, flexibility and proactivity are essential. Work environments must foster a culture that promotes flexibility and encourages staff to stay up to date on new trends and

regulations. However, we must recognize the impact that new technologies will have in redesigning the skills and abilities required of these figures.

Additionally, all three should maintain a solid technical knowledge base, including understanding environmental regulations, managing KPIs, applying standards such as GRI, and having in-depth knowledge of ISO standards. This requires constant updating on regulatory and technological developments in the sector. On the other hand, companies will have to understand which figures are most suitable for their needs. In the future, more hybrid figures may arise to combine the different sustainability dimensions with the growing need for highly specialised figures.

As it turned out, it has been seen that to transform into agents of change in sustainable behaviors are relevant dimensions such as ethical sensitivity and pro-environment behavior (Azam 2023). The present study highlights that these dimensions of soft skills still need to be researched. In the future, therefore, one should consider whether dimensions such as commitment to sustainability and moral ethics are assessed in assessment by, for example, conducting qualitative research on human resources deputed to personnel selection as well as being ready to assess whether in filling these roles it determines a change in terms of sensitivity and decision making with repercussions on business strategies and in relations with top management.

The present paper also offers important reflections at the theoretical level; in particular scarce are the reflections on the skills and competencies that those deputed to manage sustainability in enterprises should have especially if as posit in Annosi et al. 2023 and Petriglieri and Petriglieri (2020) “managers are not born nor made but fabricated” it is relevant on how facilitate the build of more responsible and ethical manager able to manage the broader dimension of sustainability that will be mirror of the company commitment.

Originality of the paper. Faced with a growing commitment to sustainability, contemporary companies are called upon to manage and initiate new sustainable processes to comply with regulations and reporting that require specific skills. However, there has yet to be a clear survey of the hard and soft skills most required by companies. This study highlights the characteristics most in demand and the similarities and differences between the three leading figures called upon to oversee a company's sustainability. The study opens critical reflections on what may be new professional figures that will emerge to manage the challenges of the near future such as the stakeholder manager and the ecosystem manager

References

- ANNOSI M.C., MATTARELLI E., DENTONI D., PETRUZZELLI A.M. (2024), “The micro-foundations of ambidexterity for corporate social performance: A study on sustainability managers’ response to conflicting goals”, *Long range planning*, vol. 57, n. 1, 102412.
- ARGYRES N., BERCOVITZ J., ZANARONE G. (2020), “The role of relationship scope in sustaining relational contracts in interfirm networks”, *Strat. Mgmt. J.* vol. 41 pp. 222-245.
- AZAM M.S. (2023), “How can we build human resources (HR) that deliver value? A systematic literature review of traditional and transformational HR roles”, *Global Business and Organizational Excellence*, vol. 42, n. 4, pp. 81-92.
- BAUMGARTNER R.J., WINTER T. (2014), “The sustainability manager: A tool for education and training on sustainability management”, *Corporate Social Responsibility and Environmental Management*, vol. 21, n. 3, pp. 167-174.
- BORGLUND T., FROSTENSON M., HELIN S., ARBIN K (2023), “The Professional Logic of Sustainability Managers: Finding Underlying Dynamics”, *Journal of Business Ethics*, vol. 182, n. 1, pp. 59-76.
- CAMARGO L.B., EUSTACHIO J.H.P.P., BONIFACIO D., MACINI N., CALDANA A.C.F. (2024), “Corporate sustainability professionals: The landscape of sustainability job positions”, *Business Ethics, the Environment & Responsibility*, vol. 33, n. 2, pp. 184-200.
- CHEN H., BAPTISTA N.M., RAGSDELL G., AN X. (2018), “Extrinsic and intrinsic motivation for experience grounded tacit knowledge sharing in Chinese software organisations”, *Journal of Knowledge Management*, vol. 22, n. 2, pp. 478-498.
- CIMATTI B. (2016), “Definition, development, assessment of soft skills and their role for the quality of organizations and enterprises”, *International Journal for Quality Research*, vol. 10, p. 97.
- DE FALCO S.E., MONTERA R., LEO S., LAVIOLA F., VITO P., SARDANELLI D., BASILE G., NEVI G., ALAIA R. (2024), “Trends and patterns in ESG research: A bibliometric odyssey and research agenda”, *Corporate Social Responsibility and Environmental Management*, pp. 1-21
- DEL BALDO M. (2010), “Corporate social responsibility and corporate governance in Italian SMEs: towards a territorial model based on small champions’ of CSR?”, *International Journal of Sustainable Society*, vol. 2, n. 3, pp. 215-247.
- GALBREATH J. (2013), “ESG in focus: The Australian evidence”, *Journal of Business Ethics*, vol. 118, pp. 529-541
- GILLAN S.L., KOCH A., STARKS L.T. (2021), “Firms and social responsibility: A review of ESG and CSR research in corporate finance”, *Journal of Corporate Finance*, vol. 66, 101889.
- MACDONALD A., CLARKE A., ORDONEZ-PONCE E., CHAI Z., ANDREASEN J. (2020), “Sustainability Managers: The Job Roles and Competencies of Building Sustainable Cities and Communities”, *Public Performance & Management Review*, vol. 43, n. 6, pp. 1413-1444.
- MOHD N.N., RODZALAN S.A., ABDULLAH N.H., SAAT M.M., OTHMAN A., SINGH H. (2024), “Skills of future workforce: Skills gap based on perspectives from academicians and industry players”, *International Journal of Evaluation and Research in Education (IJERE)*, vol. 13, n. 2, pp. 774.
- MUNOZ F., VARGAS M., MARCO I. (2014), “Environmental Mutual Funds: Financial Performance and Managerial Abilities”, *Journal of Business Ethics*, vol. 124, n. 4, pp. 551-569.
- PETRIGLIERI G., PETRIGLIERI J.L. (2020), “The return of the oppressed: A systems psychodynamic approach to organization studies”, *Academy of Management Annals*, vol. 14, n. 1, pp. 411-449.
- RASOULINEZHAD E. (2020), “Environmental impact assessment analysis in the Kahak’s wind farm”, *Journal of Environmental Assessment Policy and Management*, vol. 22, n. 01n02, pp. 2250006.

- SCIARELLI S. (2002), “La produzione del valore allargato quale obiettivo dell'etica d'impresa”, *Finanza Marketing e produzione*.
- SKUDIENE V., AURUSKEVICIENE V. (2012), “The contribution of corporate social responsibility to internal employee motivation”, *Baltic journal of management*, vol. 7, n. 1, pp. 49-67.
- SUN X., XIAO S., REN X., XU B. (2023) Time-varying impact of information and communication technology on carbon emissions”, *Energy Economics*, vol. 118, 106492.
- VAN DE VEN B. (2008), “An ethical framework for the marketing of corporate social responsibility”, *Journal of business ethics*, vol. 82, pp. 339-352.
- VAN DUUREN E., PLANTINGA A., SCHOLTENS B. (2016), “ESG Integration and the Investment Management Process: Fundamental Investing Reinvented”, *Journal of Business Ethics*, vol. 138, n. 3, pp. 525-533.
- WRIGHT C., NYBERG D., GRANT D. (2012), “Hippies on the third floor”: Climate change, narrative identity and the micro-politics of corporate environmentalism”, *Organization Studies*, vol. 33, n. 11, pp. 1451-1475.
- ZAKARI A., KHAN I., TAN D., ALVARADO R., DAGAR V. (2022), “Energy efficiency and sustainable development goals (SDGs)”, *Energy*, vol. 239, 122365.



Track 6 Marketing

Virtual influencers in tourism marketing: insight or oversight? The case of “Open to Meraviglia”

GABRIELE BAIMA¹ RADA GUTULEAC² CRISTIAN RIZZO³

Abstract

Virtual influencers (VI) are increasingly being applied to different industries, extending their reach into the tourism context as well. Despite their growing popularity and use, consumer reactions to VIs are ambivalent. In particular, the Italian Ministry of Tourism's recent 'Open to Wonder' project, which employed Botticelli's Venus to promote Italian tourism, elicited a wide range of criticisms among users. The aim of this study is to investigate the underlying motives in terms of salient source (influencer-related) and content (post-related) attributes that drive Instagram users' negative feelings. We find that inexpressive versatility, low-quality images, impersonal and inadequate caption discourse, as well as perceived lack of professionalism, significantly reduce her potential to engage with the audience. We discuss these results within the context of source credibility theory, trying to unveil the motivation underlying negative feedback from users. Managerial implications are provided with recommendations on how tourism practitioners can harness VI marketing effectively to avoid criticism from the public.

Keywords: virtual influencers; tourism; digital communication; social media campaigns; case study; source credibility theory

Framing of the research. Virtual influencers are AI influencers (i.e., those generated using AI technology) computer-generated characters (i.e., created by the computer-generated imagery technology), or digital influencers/personas/entities. By engaging in activities such as modeling, socializing, post content, sharing opinions, promote brands, VIs project a human-like persona (Arsenyan and Mirowska, 2021). Consequently, capitalizing on their advantages, businesses are partnering with these entities to endorse their products and services (Campbell and Farrell, 2020; Gutuleac et al., 2024).

Past research found that VIs are achieving different outcomes from brands in terms of attracting new audience segments, increased awareness, favorable publicity, and increased consumer engagement (Franke et al., 2023; Thomas and Fowler, 2021). Specifically, integrating VIs into a brand's marketing strategy can position the company as innovative and tech-savvy, leading to a positive impact on its brand reputation among users (Conti et al., 2022). Moreover, virtual influencers remain permanently under the auspices of the company, thus eliminating the likelihood of any negative and unethical surprises (Deng and Jiang, 2023). In particular, companies can use VIs to enhance the credibility and authority of their product endorsements, as VIs can exclusively be created or commissioned to mirror a brand's image and values (Yan et al., 2022; Sands et al., 2022). Due to their adaptability, they do not depend on physical and time limitations. Specifically, they can be leveraged for promotional purposes in a wide range of contexts and moments, making them an attractive option for brands seeking versatility (Ferraro et al., 2024). Although there is no lack of significant concerns (Conti et al., 2022), such as authenticity, high costs, and unrealistic expectations, these issues are generally mitigated by users' tendency to not hold virtual influencers directly responsible for negative outcomes. Instead, they direct their criticism towards the creators or companies behind their development (Liu and Lee, 2022).

Although they are widely and profitably being introduced in product advertisements, it remains to be proven whether they are also effective in tourism sponsorship. In fact, just lively scholarly research explores the potential use of VIs in the context of tourism marketing. In this vein, Xie-Carson et al. (2023) found that humanlike VIs are preferred over 3D animated VIs and the least preferred influencers are 2D animated VIs. Furthermore, Instagram posts from humanlike VIs that combine images of tourism settings with rational messages attract the most engagement from the audience. More generally, Block and Lovegrove (2021) focused on the post content, by conducting textual and sentiment analysis on Lil Miquela's posts and listed intriguing identity, innovative storytelling, and emotional engagement as core communication

¹ University of Torino
e-mail: gabriele.baima@unito.it

² University of Torino
e-mail: rada.gutuleac@unito.it

³ University of Torino
e-mail: cristian.rizzo@unito.it

strategies. In their semiotic analysis, De Brito Silva and colleagues (2022) concluded that the most important marketing strategies of VIs depend on the alignment of their posts with their lifestyle, personality, and the narrative of their personal lives. From a consumer perspective, previous studies suggest that individuals interact with VIs as they interact with human influencers (Lou et al., 2023; Sands et al., 2022). However, some research suggests that credibility is still a significant barrier for companies using VIs (Arsenyan and Mirowska, 2021; Franke et al., 2023). In this vein, influencers' success in influencing the user's behavior depends on credibility. In the social media context, source credibility refers to the extent to which content creators are believed to be credible, knowledgeable, and trustworthy by their audiences (Zha et al., 2018). The four-dimensional definition of source credibility is composed of expertise, trustworthiness, attractiveness and similarity. Expertise signifies that the source possesses adequate knowledge and skills in a specific domain, while trustworthiness reflects the source's honesty, and integrity as perceived by the user (Colliander and Marder, 2018). Attractiveness is frequently related to the physical appreciation of the source, while similarity involves the common traits that audiences share with media figures (Yuan and Lou, 2020; Schiappa et al., 2007). For instance, Lou and colleagues (2023) found that most followers perceive virtual influencers as uncanny and authentically fake. Despite their effectiveness in enhancing brand awareness, VIs often fail to inspire purchase intentions due to their lack of authenticity, low similarity to followers, and their weak parasocial relations with followers. Choudhry et al. (2022) explain that followers' attraction to virtual influencers arises from a persuasive combination of visual appeal, mystique and innovative storytelling. However, there is a perceived reluctance to attribute trustworthiness to these virtual entities. Furthermore, Yang et al. (2022) demonstrate that virtual influencers characterized by a higher degree of perceived humanness are associated with enhanced levels of trustworthiness, expertise, and attractiveness. Here, source credibility theory is addressed to explain how the sub-dimensions (attractiveness, expertise, trustworthiness and similarity) might explain negative feedback from users.

Given that the tourism sector is increasingly influenced by influencer marketing trends, there is a significant opportunity to leverage VIs engagement to market tourism experiences. However, research into how users interact with and respond to VI marketing in the tourism industry is still lacking.

Purpose of the paper. The aim of this research is to analyze the underlying motives in terms of salient source (influencer-related) and content (post-related) attributes that drive Instagram users' negative feelings towards VenereItalia23, a digitally designed influencer created with the intention of promoting the international attractiveness of Italian tourism. Specifically, we intend to investigate the causal factors that contribute to the prevailing negative feedback within the campaign's reception. By conducting a qualitative assessment of the interactions and sentiments expressed by the audience, we try to unravel the underlying mechanisms that have negatively influenced public perception. The final purpose is to provide a more in-depth understanding of the complexity and potential drawbacks associated with the application of VIs in the tourism marketing context. Drawing on our findings, the study shall offer valuable recommendations for enhancing and optimizing future marketing strategies within the tourism context.

Methodology. Given the limited attention the previous literature has placed on the role of Vis in promoting tourism initiatives, this paper adopts an exploratory case study approach (Eisenhardt, 1989). The case under investigation is Open to Meraviglia, an Italian tourism promotion campaign launched by the Italian Ministry of Tourism and the Italian National Tourist Board (ENIT) in 2023. This case study is relevant for the aim of our research due specific reasons. First, 'Open to Meraviglia' leverage a virtual influencer in the context of tourism marketing - an area still unexplored; second, the campaign leverages Italy's historical heritage through a well-known figure (i.e., Venere) compared to VIs; third, has elicited significant negative sentiment among its audience. To answer our research questions, we employ a netnographic approach, enriching our qualitative analysis by engaging deeply in the digital interactions around VenereItalia23 on Instagram. Netnography "as a marketing research technique, netnography uses the information that is publicly available in online forums to identify and understand the needs and decision influences of relevant online consumer groups" (Kozinets, 2002, p. 61). We chose a netnographic approach primarily due to its unobtrusive nature, allowing us to observe consumer behavior as our unit of analysis, rather than the person, in an environment unaffected by market research intervention (Kozinets, 2002). This method provides a transparent window into consumers' organic interactions, revealing the essence of their information-seeking behavior and the natural flow of word-of-mouth communication within online communities. In line with the approach proposed by Kozinets (2002), we followed these steps: 1) entrée; 2) data collection and analysis; 3) trustworthy interpretation. We began our investigation by formulating specific research questions aimed at understanding the negative responses to the VenereItalia23 campaign. Identifying Instagram as the most relevant online forum for our study, we dedicated ourselves to thoroughly understanding this platform, the dynamics of the specific groups involved, and the individual participants contributing to the discussions. Next, we moved to the data analysis phase, firstly, we documented data from the computer-mediated communications of online community members, including the posts, comments, and interactions related to the VenereItalia23 campaign on Instagram. Secondly, we recorded our observations concerning the community dynamics, member interactions, and the overarching meanings and sentiments being expressed. In line with Glaser and Strauss (1967), we collected data as long as new insights related to our research question emerged. The coding of the posts covered both data analysis and data interpretation (Spiggle, 1994), where each category later became a theme (Arnould and Wallendorf, 1994).

Case study: Open to Meraviglia. 'Open to Meraviglia' is an innovative tourism promotion campaign launched by the Italian Ministry of Tourism and ENIT, with the support of the Department for Information and Publishing of the Presidency of the Council of Ministers. This campaign represents a novel approach to marketing Italy's rich cultural heritage and diverse tourist offerings to the world, with Sandro Botticelli's Venus serving as its exceptional ambassador. At the heart of this initiative is the transformation of Botticelli's Venus into a modern virtual influencer, a figure that

personifies Italy's deep historical roots and modern appeal. This new Venus travels across Italy, from its iconic art cities to its quaint villages, promoting the country's breath-taking landscapes, culinary delights and vibrant array of tourist attractions. Designed by the Armando Testa Group, it unfolds through a multi-faceted strategy that includes a promotional video and a geographically diverse billboard campaign spotlighting the beauty of southern, central and northern Italy. As Venus travels through the different regions and municipalities participating in this digital campaign, new destinations, suggestions and itineraries will be unveiled, thereby enriching the storyline and inviting a worldwide community to discover Italy. The initiative is funded by a considerable investment from ENIT, which aims to reach key international markets through targeted promotional activities on multiple channels, including airport hubs, European railway stations with direct connections to Italy and digital ecosystems.

Results. From our analysis, the following three points emerge. We include some supporting comments that have been anonymized for privacy reasons.

1. Image quality and repetitiveness

The critique centers primarily on the low quality and repetitiveness of the imagery used in the campaign. The feedback ranges from disappointment to irony regarding the execution.

User 1: Ah well, it's really tiring to poorly cut out images from stock photo sites and have the captions translated by Google Translate, poor little Venus.

User 2: Oh, still rolling with stock photos, huh? Fantastic job there.

User 3: Venus, why the same face all the time? Your feed is a bit repetitive.

User 4: Photo taken with a 2005 cell phone with a 2-megapixel camera?

User 5: People who'd take better pics just by snapping them randomly.

These comments collectively illustrate a perception of the campaign as lacking in authenticity, creativity, and quality-key elements for engaging and inspiring potential tourists through a virtual influencer.

2. The lack of care, attention, and professionalism in a campaign worth 9 million euros

The second critical observation revolves around the perceived lack of meticulousness, attention to detail, and professionalism in a campaign that commands a substantial budget of 9 million euros.

User 6: So adding a location tag was too hard? Guess the 9 million euros couldn't cover that too, huh?

User 7: Besides the awful pics, I thought this page was all about getting tourists to Italy. Why are we even mentioning a tourism fair in Germany?

User 8: Just 4 random pics without even saying where they're at

User 9: Immerse yourself in medieval history," but Sutri was founded by the Etruscans, though

User 10: Anyway, no matter what you think, our Venus has 260K followers. I won't judge the content (though I'm tempted), but as an influencer, well, let's just say she's not exactly at the top of the popularity charts

The discourse surrounding the challenges encountered in a 9 million euro tourism campaign illuminates significant gaps in strategic planning and execution. The omission of geolocation tags, engagement with unrelated content such as a tourism fair in Germany, and the utilization of nondescript imagery are notable deficiencies. Moreover, the inaccuracies regarding the historical foundation of Sutri highlight a concerning oversight in content accuracy. Despite the virtual influencer Venus commanding a sizeable digital following, these missteps underscore a pivotal issue: the quantitative metrics of social media influence are insufficient substitutes for quality and relevance in content.

3. The quality of posts' description

The quality of the translation is another aspect that emerged from the analysis.

User 11: Seriously, who's doing your English translations? I've got a degree in language mediation and have been living in London for 13 years. If you need, I can help you out? For free, just for the love of our country.

User 12: Oh, it's really a hassle to badly crop out images from stock websites and have Google Translate do the captions, poor little Venus.

User 13: Your English has gotten better, finally you guys used ChatGPT like I suggested a while back.

User 14: Translating into English is tough, too.

User 15: A smooth translation, I would say...

The comments on the VeneriItalia profile are full of irony, reflecting a critical yet humorous approach to the translation quality of the posts. From offers to help 'for the love of our country' to teasing remarks about relying on Google Translate and suggestions that improvements could be made by using ChatGPT, each comment is layered with irony.

Preliminary discussion and conclusion. These preliminary results represent a starting point as the research is still in progress. Yuan and Lou (2020) indicate that elements of source credibility significantly influence the parasocial relationships that develop between social media influencers and their followers. Our findings are linked to the four-dimensional definition of source credibility: attractiveness, similarity, expertise, and trustworthiness (Ohanian, 1990; Xie-Carson et al., 2023). Specifically, criticism has been directed at the repetitiveness and low quality of the images employed, noting that VeneriItalia23, as a virtual influencer, lacks versatility in her expressions, rendering her presence static and unnatural. Our findings contradict prior research, which found faces of influencers in Instagram photos to

enhance engagement (Bakhshi et al., 2014; Jaakonmäki et al., 2017). Conversely, Xie-Carson and colleagues (2023) report that in the tourism context users prefer tourism images without the presence of the influencer.

Despite expectations that *VeneriItalia23* might inspire followers to engage in similar experiences, mainly negative feedbacks are reported. Schiappa et al. (2007) explain that similarity involves the common traits that audiences share with media figures. The monotonous portrayal of *VeneriItalia23*, particularly due to the repetitive expression in each post, might impede the audience's ability to connect with *VeneriItalia23* as a genuine, authentic and persuasive character reflecting common values and interests. This observation detracts from the virtual influencers' attractiveness, a key driver of followers' mimetic behavior (Kim and Park, 2023). In terms of caption discourse, users even mock the caption, finding it to be quite impersonal.

Moreover, observations on the perceived lack of care and professionalism in this high-budget campaign reflect negatively on the perceived expertise behind *VeneriItalia23*. In contrast to Liu and Lee's (2022) findings that users tend to absolve virtual influencers of responsibility for negative outcomes and instead direct their criticism at the creators or companies, in this case, our analysis suggests that users direct their criticism both at the VI itself and at the ENIT campaign. Furthermore, the feedback on the perceived negligence in campaign execution directly challenges her expertise. Expertise refers to the level of knowledge or skill in a specific field (Bargoni et al., 2024). In this case, the audience's perception is that the campaign lacks a deep understanding of effective tourism promotion. Specifically, they highlight that the campaign lacks thoroughness and attention to detail - high use of translation programs, little knowledge about historical backgrounds, and inappropriate content for promoting tourism. For instance, the presence of inaccuracies in posts that should be promoting Italian beauty, or the fact that the campaign aims to promote Italian tourism to an international audience, but then uses language that is not appropriate. The lack of expertise is closely linked to the perceived trustworthiness of the audience. Trustworthiness (Wiedmann and von Mettenheim, 2020) pertains to the honesty, genuineness, and truthfulness of the source. Issues such as the use of inadequate translations, lack of geographical tagging, and inaccuracies in historical information not only reflect a disregard for detail but also reduce the perceived trustworthiness of the information in the post.

Our findings highlight the importance of considering three main attributes that users may influence consumers' reactions to any post: source, image composition, and caption discourse.

Conclusion and research limitations. We provide some insights for embedding VIs in tourism promotion. Specifically, our investigation examines the Italian 'Open to Meraviglia' campaign, with the aim to unveil the motivation underlying negative user comments. Although the potential of VIs to open new marketing opportunities with their flexibility and control, this case study reports a high number of critiques.

Grounded on the source credibility model (Ohanian, 1990), we found that *VeneriItalia23* as a VIs ambassador in charge of promoting Italian tourism abroad, is failing to engage the public positively. The criticisms leveled at *VeneriItalia23* - from the repetitive and poor quality of the pictures to the impersonal nature of the captions - highlight a failure to harness the distinctive capabilities of VIs and to create a genuine, intimate connection with the audience. Specifically, we report that her lack of expressive versatility, low-quality image, and impersonal caption discourse reduce her attractiveness, similarity, expertise and trustworthiness. In particular, the low level of attention to detail and professionalism in terms of accuracy of content and use of language suggests a significant underestimation of the audience's expectations of authenticity and expertise in storytelling. At first glance, users prefer authentic and engaging storytelling, high-quality images and potentially without the intermediary of a virtual influencer. Virtual influencers, like *VeneriItalia23*, should be considered not only as marketing tools but as storytellers who embody the essence of the destination they represent. Moreover, our findings do not exclusively ascribe the negative feedback to the digital nature of *VeneriItalia23* as a virtual influencer, potentially distinguished from a genuine, real influencer. They instead highlight the initiative to resurrect the essence of Botticelli's *Venus*, thereby indicating that the primary intent is not to persuade the audience of its authenticity as a real-life influencer embodying human-like physicality and behaviors. Despite this, our analysis suggests that introducing variability in expressions to foster an element of surprise for the audience could be more advantageous. Such an approach may mitigate the audience's habituation to an unchanging expression.

The limitations of this study lie primarily in its exploratory nature and methodological approach. Furthermore, the analysis is limited to a singular campaign and its acceptance among Instagram users, which may not entirely reflect the multiple ways VIs influence tourism marketing in different cultural contexts, platforms and audiences. Also, sentiment and thematic analysis can be opened up to interpretation by the researcher, which introduces a degree of inherent subjectivity into the findings. A larger sample of Instagram accounts of VIs specifically designed to promote tourism and chosen as symbols, rather than any virtual influencer, should be used to replicate this research to validate and generalize the preliminary results.

Managerial implications. When interpreting these findings to offer some managerial implications, it is important to note that they are in a preliminary stage. Drawing on these preliminary findings, we argue that tourism managers should clearly communicate the role of the VI and the fictional nature to meet and manage users' expectations. Specifically, they should be transparent on the role of the VI, by explaining the creative choices behind the choice to leverage a historical figure and clarify that a VI serve as a storytelling tool rather than a "traditional" influencer. Furthermore, they should invest in high-quality imagery, ensuring different and expressive content, and avoiding repetitive faces of VI on the posts that can lead to user disengagement. For instance, a video of *Venus* tasting local Italian cuisine or participating in traditional events can make the content more engaging and relatable. Moreover, managers may encourage followers to share their own experiences with the campaign's featured destinations and tag the VI. Highlighting user-generated content on the VI's profile can increase her authenticity and create a supportive community. For example, followers could

be invited to share their photos of destinations that were previously posted by VenereItalia23, and she could then “react” or “comment” the posts. Furthermore, to avoid monotony in facial expressions, managers could leverage animation software to create smiles, winks, and other emotive gestures that humanize the VI, and enhance Vi’s expressive face. Importantly, the congruity between the facial expression and the emotional tone of the post should be considered. For instance, for a joyful landscape, a look of awe could be implemented. From a content perspective, agencies and managers leveraging VI as tourism brand ambassadors could collaborate with historians, artists, chefs, and other local experts to ensure authenticity and accuracy in the posts. We would therefore recommend posting narratives that capture the audience’s interest, using a mix of historical facts, cultural curiosities, and personal stories

Originality of the paper. This research, though at its preliminary stage, presents elements of originality in the investigated topic. The originality of this paper lies in its exploration of virtual influencers (VIs) within tourism marketing, particularly focusing on their influence and reception in promoting national tourism through social media campaigns. Specifically, this study leverages the ‘Open to Meraviglia’ campaign, initiated by the Italian Ministry of Tourism, which employed Botticelli’s Venus as a VI to enhance Italian tourism globally. This approach of utilizing a historically significant figure as a VI, specifically designed to promote the essence of a nation’s heritage, sets a novel precedent in the field. Furthermore, our analysis examines the underlying motives of mixed reactions from the audience, especially the negative ones in the tourism context - a still little investigated area. In addition, by highlighting the specific challenges of the use of a cultural icon as a VI in tourism marketing, our preliminary findings contribute to the academic discourse on digital marketing and influencer campaigns, aiming to provide insights that could be applicable beyond the Italian context to the global use of VIs in promoting tourism.

References

- ARNOULD E.J., WALLENDORF M. (1994), “Market-oriented ethnography: interpretation building and marketing strategy formulation”, *Journal of marketing research*, vol. 31, n. 4, pp. 484-504.
- ARSENYAN J., MIROWSKA A. (2021), “Almost human? A comparative case study on the social media presence of virtual influencers”, *International Journal of Human-Computer Studies*, vol. 155, 102694.
- BAKHSHI S., SHAMMA D.A., GILBERT E. (2014), “Faces engage us: Photos with faces attract more likes and comments on instagram”, In *Proceedings of the SIGCHI conference on human factors in computing systems*, pp. 965-974.
- BARGONI A., GIACHINO C., GUTULEAC R., STREIMIKIENE D. (2024), “Is this really me? Investigating brand personality self-congruity on consumer behavior in video-based social media”, *Psychology & Marketing*.
- BLOCK E., LOVEGROVE R. (2021), “Discordant storytelling, ‘honest fakery’, identity peddling: How uncanny CGI characters are jamming public relations and influencer practices”, *Public Relations Inquiry*, vol. 10, n. 3, pp. 265-293.
- CAMPBELL C., FARRELL J.R. (2020), “More than meets the eye: The functional components underlying influencer marketing”, *Business horizons*, vol. 63, n. 4, pp. 469-479.
- CHOUDHRY A., HAN J., XU X., HUANG Y. (2022), “I Felt a Little Crazy Following a ‘Doll’ “Investigating Real Influence of Virtual Influencers on Their Followers”, *Proceedings of the ACM on human-computer interaction*, 6 (GROUP), pp. 1-28.
- COLLIANDER J., MARDER B. (2018), “‘Snap happy’ brands: Increasing publicity effectiveness through a snapshot aesthetic when marketing a brand on Instagram”, *Computers in Human Behavior*, vol. 78, pp. 34-43.
- CONTI M., GATHANI J., TRICOMI P.P. (2022), “Virtual influencers in online social media”, *IEEE Communications Magazine*, vol. 60, n. 8, pp. 86-91.
- DE BRITO SILVA M.J., DE OLIVEIRA RAMOS DELFINO L., ALVES CERQUEIRA K., DE OLIVEIRA CAMPOS P. (2022), “Avatar marketing: a study on the engagement and authenticity of virtual influencers on Instagram”, *Social Network Analysis and Mining*, vol. 12, n. 1.
- DENG F., JIANG X. (2023), “Effects of human versus virtual human influencers on the appearance anxiety of social media users”, *Journal of Retailing and Consumer Services*, vol. 71, 103233.
- EISENHARDT K.M. (1989), “Building theories from case study research”, *Academy of management review*, vol. 14, n. 4, pp. 532-550.
- FERRARO C., SANDS S., ZUBCEVIC-BASIC N., CAMPBELL C. (2024), “Diversity in the digital age: how consumers respond to diverse virtual influencers”, *International Journal of Advertising*, pp. 1-23.
- FRANKE C., GROEPPEL-KLEIN A., MÜLLER K. (2023), “Consumers’ responses to virtual influencers as advertising endorsers: novel and effective or uncanny and deceiving?”, *Journal of Advertising*, vol. 52, n. 4, pp. 523-539.
- GLASER B.G., STRAUSS A.L., STRUTZEL E. (1968), “The discovery of grounded theory; strategies for qualitative research”, *Nursing research*, vol. 17, n. 4, p. 364.
- GUTULEAC R., BAIMA G., RIZZO C., BRESCIANI S. (2024), “Will virtual influencers overcome the uncanny valley? The moderating role of social cues”, *Psychology & Marketing*, pp. 1-13.
- JAAKONMÄKI R., MÜLLER O., VOM BROCKE J. (2017), “The impact of content, context, and creator on user engagement in social media marketing”, In *Proceedings of the Annual Hawaii International Conference on System Sciences*, Vol. 50, pp. 1152-1160.
- KIM H., PARK M. (2023), “Virtual influencers’ attractiveness effect on purchase intention: A moderated mediation model of the Product-Endorser fit with the brand”, *Computers in Human Behavior*, vol. 143, 107703.
- KOZINETS R.V. (2002), “The field behind the screen: Using netnography for marketing research in online communities”, *Journal of marketing research*, vol. 39, n. 1, pp. 61-72.
- LIU F., LEE Y.H. (2022), “Unveiling Behind-the-Scenes Human Interventions and Examining Source Orientation in Virtual Influencer Endorsements”, In *ACM International Conference on Interactive Media Experiences*, pp. 175-192.

- LOU C., KIEW S.T.J., CHEN T., LEE T.Y.M., ONG J.E.C., PHUA Z. (2023), "Authentically fake? How consumers respond to the influence of virtual influencers", *Journal of Advertising*, vol. 52, n. 4, pp. 540-557.
- OHANIAN R. (1990), "Construction and validation of a scale to measure celebrity endorsers' perceived expertise, trustworthiness, and attractiveness", *Journal of Advertising*, Vol. 19, n. 3, pp. 39-52.
- SANDS S., CAMPBELL C.L., PLANGGER K., FERRARO C. (2022), "Unreal influence: leveraging AI in influencer marketing", *European Journal of Marketing*, vol. 56, n. 6, pp. 1721-1747.
- SCHIAPPA E., ALLEN M., GREGG P.B. (2007), "Parasocial relationships and television: A meta-analysis of the effects", *Mass media effects research: Advances through meta-analysis*, pp. 301-314.
- SPIGGLE S. (1994), "Analysis and interpretation of qualitative data in consumer research", *Journal of consumer research*, vol. 21, n. 3, pp. 491-503.
- THOMAS V.L., FOWLER K. (2021), "Close encounters of the AI kind: Use of AI influencers as brand endorsers", *Journal of Advertising*, vol. 50, n. 1, pp. 11-25.
- WIEDMANN K.P., VON METTENHEIM W. (2020), "Attractiveness, trustworthiness and expertise-social influencers' winning formula?", *Journal of Product & Brand Management*, vol. 30, n. 5, pp. 707-725.
- XIE-CARSON L., MAGOR T., BENCKENDORFF P., HUGHES K. (2023), "All hype or the real deal? Investigating user engagement with virtual influencers in tourism", *Tourism Management*, vol. 99, 104779.
- YANG J., CHUENTERAWONG P., LEE H., CHOCK T.M. (2023), "Anthropomorphism in CSR endorsement: A comparative study on humanlike vs. cartoonlike virtual influencers' climate change messaging", *Journal of Promotion Management*, vol. 29, n. 5, pp. 705-734.
- YUAN S., LOU C. (2020), "How social media influencers foster relationships with followers: the roles of source credibility and fairness in parasocial relationship and product interest", *Journal of Interactive Advertising*, Vol. 20, n. 2, pp. 133-147.
- ZHA X., YANG H., YAN Y., LIU K., HUANG C. (2018), "Exploring the effect of social media information quality, source credibility and reputation on informational fit-to-task: Moderating role of focused immersion", *Computers in Human Behavior*, vol. 79, pp. 227-237.

Websites

Enit: <https://www.enit.it/it/italia-open-to-meraviglia> (accessed: 03/03/2024).

Mitigating the Negative Effects of Human-like Virtual Medical Agents on Patients' Emotions. Results From a Preliminarily Experimental Study

ANDREA SESTINO¹ ALFREDO D'ANGELO² RUSSELL W. BELK³

Abstract

Virtual agents captured greater attention in various sectors, including healthcare, with potential applications such as chatbots and avatars of medical professionals, to assist final patients and boost their journey. However, understanding their impact on patients' reactions remains a still hazy, critical area of investigation. Drawing upon the Uncanny Valley Theory, through an experimental study, this paper examines how patients react to the human-like similarity (low vs. high) of medical doctors' avatars, in digital healthcare platforms. Results reveal that higher human-like similarity led to higher negative emotions, because of the effect of both perceived anthropomorphism, and creepiness. Nonetheless, the negative impact is attenuated by individuals' digital literacy, suggesting that familiarity with digital technologies – and investing in policies aimed to allow final users to “sage” the benefits derivable from new technologies – may mitigate adverse emotional responses, thereby facilitating the acceptance of such digital interventions in healthcare.

Keywords: virtual agents; medical; healthcare; anthropomorphism; creepiness; digital literacy; negative emotion

Framing of the research. Immersive technologies, including VR, AR, and MR, empowered by AI, are reshaping business propositions across various sectors such as education, entertainment, tourism, and healthcare (Wang et al., 2019). Avatars, as integral components of immersive experiences, facilitate interactions between individuals and virtual environments, particularly in healthcare settings (Miller & Polson, 2019; Sestino & D'Angelo, 2023). They serve as interfaces for teleconsultations, healthcare chatbots, and therapy applications, improving patient care and communication (see Winkler et al., 2023 for a review). However, the design of avatars must carefully balance realism and likability to avoid triggering negative responses, as explained by the Uncanny Valley theory (Kätsyri et al., 2015; Mori, 1970). Digital literacy, defined as individuals' competence in understanding and critically evaluating digital technologies, influences perceptions of virtual worlds, including in healthcare (Merchant, 2009; Kamal et al., 2020). Higher levels of conscientiousness and education correlate with more positive attitudes toward new technologies (Sunny et al., 2019). Digital literacy acts as a moderator, mitigating negative perceptions of new technologies and empowering individuals to engage responsibly (Ahmed & Rasheed, 2020; Bao & Lee, 2023). The Uncanny Valley theory is significant in avatar design, emphasizing the need to balance human-likeness to avoid negative emotional responses (Berger et al., 2018; MacDorman & Ishiguro, 2006). Based on such assumptions, anthropomorphism and creepiness may the relationship between avatar human-likeness and negative emotions (Epley et al., 2007; Mouri et al., 2012; Raff et al., 2024). Anthropomorphism enhances engagement but may lead to discomfort if avatars become too human-like, while perceived creepiness arises from incongruity between human-like appearance and behavior (Epley et al., 2007; Koschate et al., 2006; Raff et al., 2024). Digital literacy moderates these effects, helping individuals navigate technology complexities (Black & Steinkuehler, 2009; Roberts et al., 2023).

Purpose of the paper. This study delves into the impact of human-like similarity in the healthcare sector on individuals' negative emotional responses. It explores how perceived anthropomorphism and creepiness mediate this impact. Anthropomorphism, the attribution of human traits to non-human entities, and perceived creepiness are investigated as potential mediators between human-like similarity and emotional reactions (Epley et al., 2007; Koike & Loughnan, 2021). Perceived creepiness, referring to discomfort or unease, particularly in the uncanny valley of healthcare avatars, is also considered (Mouri et al., 2012; Raff et al., 2024). Through an exploratory research design, an experiment was conducted with 206 international participants, revealing that higher levels of human-like similarity positively influence negative emotions, mediated by perceived anthropomorphism and creepiness. Notably, this relationship is negatively moderated by individuals' digital literacy, which helps mitigate negative reactions. By

¹ LUISS

e-mail: asestino@luiss.it

² Cattolica del Sacro Cuore University

e-mail: alfredo.dangelo@unicatt.it

³ e-mail: rbelk@schulichyorku.ca

unraveling these complex dynamics, this research aims to offer insights into designing healthcare avatars for better and more user-friendly virtual healthcare experiences.

Methodology. The methodology comprised a pre-test to verify the efficacy of stimuli designed to manipulate human-like similarity in avatars. Using different avatars, one human-like and the other cartoon-like, participants rated the human likeness. Results showed higher ratings for the human-like avatar, confirming the manipulation's effectiveness.

In the main study, a questionnaire was administered to assess reactions to different avatar types in digital healthcare services. Participants were assured of data anonymity and were asked to evaluate their digital literacy. They were then randomly assigned to either low or high human-like similarity conditions, interacting with a medical doctor's avatar. Reactions were measured in terms of negative emotions, perceived creepiness, and anthropomorphism. Based on our between-subjects experimental research design, the two-cell experiment has been built on two different conditions related to the two different type human-like similar avatar (low vs. high), pre-tested in the previous study.

The questionnaire was comprised three main sections. In the introduction section, participants were welcomed with a reassurance regarding the anonymity of their responses and the meticulous handling of data. It was explicitly communicated that all data would be utilized solely in an aggregated manner, aligning with rigorous scientific purposes, aimed at alleviating any apprehensions among the participants (Podsakoff et al., 2019).

At the end of this section, we asked participants to self-evaluate their Digital literacy by using items drawn by considering both the digital skills required by the "DigiComp" Framework as an tool proposed by the European Union to measure individuals' digital skills. We also utilized Reddy and colleagues' (2023) recommended self-perception measure (i.e., "Please self-rate your digital culture, and your ability to critically evaluate the reliability and credibility of information found online, considering factors such as source credibility, bias, and relevance"; $\alpha = .922$). The answer was assessed on seven-point Likert scales (1 = "Low proficiency", and 7 = "High proficiency").

In the second section of the questionnaire, participants were randomly assigned to one of two different conditions (low vs. high human-like similarity), with a medical doctor's avatar. Then, in the third section, we asked for participants' reactions in terms of negative emotions based on the scale related to the negative emotional display response drawn by Du and colleagues (2011), (e.g., "I think that the doctor's avatar looks down on me in an aloof way", "I think that the avatar frowns at me and looks clearly impatient", and so on; $\alpha = .964$), on the basis of prior studies evaluating uncanny valley assumptions, emotional responses, and psychophysiological reactions (e.g., Ratajczyk et al., 2019). The perceived creepiness measure used a scale suggested by Raff et colleagues (2024) (e.g., "This doctor's avatar would be comparable to an invisible guest in my home", "This doctor's avatar reminds me of the evil", and so on; $\alpha = .778$); and their anthropomorphism was measured using McLean and colleagues' (2019) scale (e.g., "When I communicate with the doctor's avatar, it feels like someone is near me", "The interaction experience with the doctor's avatar, is close to that with a human being", and so on; $\alpha = .957$). Finally, in the fourth section we asked for their basic sociodemographic data. Both perceived creepiness and anthropomorphism, together with participants' negative emotions, were assessed on a seven-point Likert scales (1 = "Completely disagree", and 7 = "Completely agree").

Results. Based on our research design, in this study we utilized moderated mediation analysis to investigate the effects of human-like similarity of avatars on individuals' negative emotions, mediated by perceived anthropomorphism and perceived creepiness, with digital literacy moderating these relationships. SPSS Model 87 was employed for analysis (Hayes, 2015). Results indicated a significant direct effect of high human-like similarity on negative emotions. Mediation analysis revealed that high human-like similarity led to increased anthropomorphism, which in turn increased perceived creepiness. The serial mediation effect of human-like similarity on negative emotions via anthropomorphism and perceived creepiness was significant. Furthermore, digital literacy moderated these relationships. Individuals with lower digital literacy exhibited intensified negative reactions to highly anthropomorphic avatars, consistent with the Uncanny Valley theory. Conversely, individuals with higher digital literacy demonstrated reduced susceptibility to the adverse emotional impact of anthropomorphic avatars, indicating a nuanced understanding of the artificial nature of avatars and mitigated perceived creepiness. This effect extended beyond technical proficiency, reflecting a heightened digital consciousness. Overall, the study supported the hypothesis that high human-like similarity in avatars increases negative emotions, mediated by anthropomorphism and perceived creepiness, with digital literacy playing a crucial role in mitigating adverse emotional reactions.

Research limitations. Despite the research findings, some issues may persist in calibrating the relationship between avatar human likeness and negative emotions due to various contributing factors such as virtual environments and individual differences in personality traits and cultural backgrounds. Future studies should aim to integrate these findings into technology adoption models to further illuminate perceptions of doctor virtual agents and their anthropomorphic characteristics.

Managerial implications. Based on the findings of the research demonstrating that higher human-like similarity of doctors' virtual agents leads to increased perceived anthropomorphism and creepiness, resulting in negative emotions, with a mitigating effect observed among patients with higher digital literacy, the following managerial implications can be drawn for marketers and managers. Managers. Firstly, healthcare managers should consider tailoring the design of virtual agents to strike a balance between human-like features and technological aspects. While incorporating human-like characteristics may enhance perceived anthropomorphism, it's crucial to avoid excessive resemblance to humans to prevent feelings of creepiness among patients. This necessitates collaboration between healthcare professionals and technology experts to design virtual agents that are perceived positively by patients. Secondly, by recognizing the mitigating effect of digital literacy on the negative emotional response to highly anthropomorphic virtual agents, healthcare managers should prioritize initiatives aimed at enhancing patients' digital literacy. Implementing educational

programs and resources focused on digital literacy can empower patients to better understand and interact with virtual agents, thereby reducing the likelihood of experiencing negative emotions and increasing acceptance of technological advancements in healthcare settings. Moreover, healthcare managers should provide comprehensive training and support to healthcare staff involved in the implementation and utilization of virtual agents. This includes educating staff members on the potential impact of virtual agent design on patient perceptions and emotions, as well as equipping them with strategies to effectively communicate the benefits of digital technology to patients. By fostering a culture of digital literacy within healthcare organizations, staff members can play a pivotal role in facilitating patients' acceptance of technological innovations. In conclusion, healthcare managers must recognize the importance of striking a balance between human-like features and technological functionality in virtual agent design, while also prioritizing initiatives to boost patients' digital literacy. By proactively addressing these factors, healthcare organizations can foster a culture of acceptance and appreciation for technological advancements in healthcare delivery, ultimately improving patient outcomes and satisfaction.

Originality of the paper. The exploration of the relationship between human-like attributes in virtual agents employed by healthcare professionals and patient perceptions constitutes a novel avenue of inquiry within research studies. This paper unveils a significant finding wherein heightened similarity between doctors' virtual agents and humans correlates with amplified perceptions of anthropomorphism and creepiness among patients, consequently engendering negative emotional responses. Notably, this study contributes to existing literature by elucidating that such effects are mitigated among patients exhibiting greater levels of digital literacy. This insight is particularly noteworthy as it not only enriches our understanding of human-computer interaction but also intersects with the Uncanny Valley theory, providing empirical support for its applicability within the context of healthcare technology. Thus, this research not only contributes original findings but also underscores the importance of considering individual differences in digital literacy when designing and implementing virtual agents in healthcare settings.

References

- AHMED S., RASHEED T. (2020), "Relationship between personality traits and digital literacy skills: a study of university librarians", *Digital Library Perspectives*, vol. 36, n. 2, pp. 191-206.
- BAO H., LEE E. W. (2023), "Examining Theoretical Frameworks and Antecedents of Health Apps and Wearables Use: A Scoping Review", *Health Communication*, pp. 1-11.
- BERGER C.C., GONZALEZ-FRANCO M., OFEK E., HINCKLEY K. (2018), "The uncanny valley of haptics", *Science Robotics*, vol. 3, n. 17, pp. eaar7010-7020.
- BLACK T.W., STEINKUEHLER C. (2009), "Literacy in virtual worlds", *Handbook of Adolescent Literacy Research*, pp. 271-286.
- DU J., FAN X., FENG T. (2011), "Multiple emotional contagions in service encounters", *Journal of the Academy of Marketing Science*, vol. 39, pp. 449-466.
- EPLEY N., WAYTZ A., CACIOPPO J.T. (2007), "On seeing human: A three-factor theory of anthropomorphism", *Psychological Review*, vol. 114, n. 4, p. 86.
- HAYES A.F. (2015), "An index and test of linear moderated mediation", *Multivariate behavioral research*, vol. 50, n. 1, pp. 1-22.
- KAMAL S.A., SHAFIQ M., KAKRIA P. (2020), "Investigating acceptance of telemedicine services through an extended technology acceptance model (TAM)", *Technology in Society*, vol. 60, p. 101212.
- KÄTSYRI J., FÖRGER K., MÄKÄRÄINEN M., TAKALA T. (2015), "A review of empirical evidence on different uncanny valley hypotheses: support for perceptual mismatch as one road to the valley of eeriness", *Frontiers in psychology*, vol. 6, p. 390.
- MACDORMAN K.F., ISHIGURO H. (2006), "The uncanny advantage of using androids in cognitive and social science research. Interaction Studies", *Social Behaviour and Communication in Biological and Artificial Systems*, vol. 7, n. 3, pp. 297-337.
- MERCHANT G. (2009), "Literacy in virtual worlds", *Journal of Research in Reading*, vol. 32, n. 1, pp. 38-56.
- MILLER E., POLSON D. (2019), "Apps, avatars, and robots: The future of mental healthcare", *Issues in mental health nursing*, vol. 40, n. 3, pp. 208-214.
- MORI M. (1970), "The uncanny valley: the original essay by Masahiro Mori. IEEE Spectrum, 6.
- MORI M., MACDORMAN K.F., KAGEKI N. (2012), "The uncanny valley [from the field]", *IEEE Robotics & automation magazine*, vol. 19, n. 2, pp. 98-100.
- RAFF S., ROSE S., HUYNH T. (2024), "Perceived creepiness in response to smart home assistants: A multi-method study", *International Journal of Information Management*, vol. 74, p. 102720.
- RATAJCZYK D., JUKIEWICZ M., LUPKOWSKI P. (2019), "Evaluation of the uncanny valley hypothesis based on declared emotional response and psychophysiological reaction", *Bio-Algorithms and Med-Systems*, vol. 15, n. 2, p. 20190008.
- REDDY P., CHAUDHARY K., SHARMA B., HUSSEIN S. (2023), "Essaying the design, development and validation processes of a new digital literacy scale", *Online Information Review*, vol. 47, n. 2, pp. 371-397.
- ROBERTS M.J.D., CONNOLLY T., CONLEY J., MILLER J. (2023), "Digital citizenship and the big five personality traits", *In Informatics*, vol. 10, n. 3, p. 58.
- SESTINO A., D'ANGELO A. (2023), "My doctor is an avatar! The effect of anthropomorphism and emotional receptivity on individuals' intention to use digital-based healthcare services", *Technological Forecasting and Social Change*, vol. 191, p. 122505.
- SUNNY S., PATRICK L., ROB L. (2019), "Impact of cultural values on technology acceptance and technology readiness", *International Journal of Hospitality Management*, vol. 77, pp. 89-96.
- WANG Y., LI Y., ZHANG W. (2019), "The influence of anthropomorphic features on trust in human-robot interaction", *International Journal of Social Robotics*, vol. 11, n. 2, pp. 307-316.

WINKLER A., KUTSCHAR P., PITZER S., VAN DER ZEE-NEUEN A., KERNER S., OSTERBRINK J., KRUTTER S. (2023), "Avatar and virtual agent-assisted telecare for patients in their homes: A scoping review", *Journal of Telemedicine and Telecare*, p. 1357633X231174484.

Scaling Consumer Neuroscience Technologies for Individual and Societal Well-Being. A Bibliometric Analysis of Precursors

ANDREA BAZZANI¹ GIORGIO MANFRONI² UGO FARAGUNA³ GIUSEPPE TURCHETTI⁴

Contributors statement:

AB and GM conceptualized the work and conducted the bibliometric analysis. AB drafted the extended abstract. GM created the graphs related to the bibliometric analysis. UF and GT contributed to the work's conceptualization, provided the necessary resources to conduct the study, and reviewed the work.

Abstract

In this work-in-progress research, we conducted a bibliometric analysis on the integration of consumer neuroscience technologies and wearable devices from the biomedical sector into studies of individual well-being. With rising consumer awareness for health monitoring, facilitated by consumer-grade devices that measure physiological parameters, there is an expanding interest in using these technologies also for marketing and consumer behavior research. This shift marks a significant development in consumer neuroscience, a field evolving to incorporate a broader range of physiological parameters through wearable technology. Such advancements raise important questions about the feasibility of gathering detailed data in everyday settings. Addressing the utilization of neurophysiological data to examine consumer behavior necessitates understanding the challenges consumers face when adopting these technologies, including ethical concerns. Our initial investigation focuses on concrete barriers to adoption, particularly concerning device usability and scalability, framed within the Technology Acceptance Model.

The ultimate goal of our research project is to investigate progress in collecting neurophysiological data from consumers and their willingness to share this information for diverse purposes, such as marketing research. Given the novelty of this area and the need for empirical data to fully understand consumer reactions to technology use, this ongoing work represents an initial step. We conducted a bibliometric analysis of existing literature from the Scopus database to evaluate the current state of research and suggest future research directions. This analysis, drawing from literature between 2009 and 2024, employs VOSviewer and Biblioshiny to examine publication trends, citation networks, and thematic developments.

Findings indicate a growing interest from 2011 until just before 2023 in employing neurophysiological tools for health monitoring and improving well-being, with a notable shift towards AI-driven research methods like machine learning and deep learning in recent years. There is a continuous emphasis on analyzing health metrics, such as heart rate variability, to assess well-being and stress levels. The geographical analysis identifies the United States, the United Kingdom, China, and Italy as key contributors to this research area. Keyword co-occurrence analysis uncovers clusters focused on psycho-physiological state monitoring, the usability of technology, behavior modification interventions, public health applications, and the integration of AI with wearable technology.

This study highlights the transformative potential of wearable neurophysiological devices in consumer behavior research, underscoring the importance of cross-disciplinary collaboration to establish standardized research methodologies. Managerial implications emphasize the significance of understanding consumers comfort and data-sharing willingness to integrate these technologies into daily life, thus enhancing consumers well-being. This paper's originality lies in mapping out a research and application roadmap for the marketing and well-being sectors, suggesting how leveraging marketing approaches can also improve individual and societal well-being.

¹ Sant'Anna School of Advanced Studies, Pisa
e-mail: andrea.bazzani@santannapisa.it

² Sant'Anna School of Advanced Studies, Pisa
e-mail: giorgio.manfroni.vc@gmail.com)

³ University of Pisa
e-mail: ugo.faraguna@unipi.it

⁴ Sant'Anna School of Advanced Studies, Pisa
e-mail: giuseppe.turchetti@santannapisa.it

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Framing of the research. Consumers are becoming increasingly mindful of their well-being, a trend bolstered by the widespread availability of consumer-grade devices that can quantify physiological parameters (e.g., Tikkanen et al., 2023; Fuentes and Sörum, 2019).

This technological advancement enables the objective measurement of aspects that would otherwise remain subjective, marking a significant shift in how individuals engage with their health and wellness during daily activities. This trend has sparked a growing interest in leveraging unconventional data sources also for marketing purposes (e.g., Ferreira et al., 2021). Wearable devices have not only gained a significant market presence but have also introduced new paradigms for advancing consumer behavior research.

The potential to accurately and objectively understand consumer behavior and customize products and services to enhance consumer satisfaction and well-being has its roots in the nascent field of consumer neuroscience (Plassmann and Karmarkar, 2019). This field is now expanding to include the collection of additional physiological parameters through wearable technology (Clithero et al., 2024). The emergence of this interest within marketing literature highlights crucial questions about the practicality of collecting such detailed data in everyday, natural settings.

Recognizing the utility of using (neuro-)physiological data to investigate consumer behavior requires an exploration of the barriers to technology adoption firstly faced by consumers, including ethical concerns (e.g., Wardlaw et al., 2011; Dobson et al., 2023).

Our preliminary work examines tangible adoption barriers, particularly those related to device usability and scalability, within the framework of the Technology Acceptance Model (TAM) (Davis, 1989). TAM posits that the decision to adopt technology is significantly influenced by an individual's perceptions of its usefulness and ease of use. These factors shape attitudes toward technology use, influencing behavioral intentions and ultimately leading to technology adoption. It is evident that social and cognitive aspects also play roles in technology adoption decisions.

Our research aims to explore advancements in the collection of consumers (neuro-)physiological data and consumers' willingness to share such information for various purposes, including marketing research. Using TAM as our guide, we intend to investigate how enhancing usability perceptions of devices collecting (neuro-)physiological data could positively affect the acceptance of such technologies from both consumers' and companies' perspectives.

Given the field's infancy and the need for empirical data to fully understand consumer responses to technology integration, the initial contribution of our work-in-progress research is a bibliometric analysis of existing literature. This analysis aims to assess the current state of research and propose directions for future theoretical and empirical studies. Insights from this analysis could also help businesses refine their marketing strategies to better match consumer preferences.

Our objective is to map the current research landscape at the intersection of various disciplines and explore potential applications of wearable technology in consumer behavior research. Furthermore, we aspire to lay the foundation for a comprehensive literature review, seeking to reveal practical implications for academics, marketing professionals, and healthcare providers. For healthcare providers, integrating health-related data from wearable devices into their systems offers a new perspective on health prevention (e.g., Lu et al, 2020; Bayoumy et al., 2021).

This holistic approach is crucial for understanding how this promising area can advance consumer research, particularly in leveraging marketing to enhance individual and societal well-being.

Methodology. To conduct a comprehensive and up-to-date analysis of the literature on the scalability and application of consumer (neuro-)physiological technologies for consumer behavior and well-being, our research adopted a bibliometric approach. This method allowed us to quantify and explore patterns in the existing body of work within this emerging interdisciplinary field.

Data Collection

The initial phase involved conducting a systematic search within the Scopus database, employing a set of keywords relevant to consumer neuroscience techniques and wearable devices aimed at monitoring consumer health and enhancing well-being. These keywords, which spanned both techniques and conceptual frameworks, included "Electroencephalography," "Eye-Tracking Technology," "Heart Rate Monitoring," "Wearable Technology," "Usability," and "Well-Being." We crafted our search query using these keywords connected by Boolean operators, focusing on titles and abstracts to capture relevant studies comprehensively.

We limited our search to original works and reviews published in English, excluding book chapters, conference papers, and similar publications to maintain a focus on peer-reviewed journal articles. This process led to the identification and analysis of 242 articles.

Bibliometric Analysis

For the bibliometric analysis, we employed two primary tools: VOSviewer and Biblioshiny.

VOSviewer (www.vosviewer.com) was crucial for exploring the co-occurrence networks of key terms within the literature (van Eck and Waltman, 2011), facilitating the visualization of relationships between terms. The proximity

between two items on the map indicated the strength of their association within the literature, enabling us to identify clusters of related terms and reveal the main thematic focuses within the field (van Eck and Waltman, 2010).

Biblioshiny, a web interface for the Bibliometrix R package, offered an accessible platform for our bibliometric analysis (Aria and Cuccurullo, 2017). It allowed for the importation, cleaning, and analysis of bibliographic data, generating interactive visualizations and network diagrams that were instrumental in deciphering the landscape of scalable (neuro-)physiological technologies for consumer research. The tool's comprehensive analysis capabilities enriched our study with insights into publication trends, authorship patterns, and geographical research distribution.

Results. Our findings are presented in three distinct sections. The first section details the temporal evolution of publications, including the annual number of publications (Figure 1) and the changing frequency of keywords over time (Figure 2). The second section examines the geographic distribution of research activities, showcasing the locations of corresponding authors, publication counts by country (Figure 3), citation rates (Figure 4), and international collaborations (Figure 5). The final section delves into keyword network analysis and the evolution of topic networks over time (Figures 6 and 7).

Temporal Evolution of Research

Our dataset reveals an overall increase in annual publication volume up to the year 2023, indicating a growing interest in scalable neurophysiological techniques for consumer well-being (**Figure 1**). This surge in research activity, notable from 2011, reaches its peak just before 2023.

Figure 1 – Annual Scientific Production

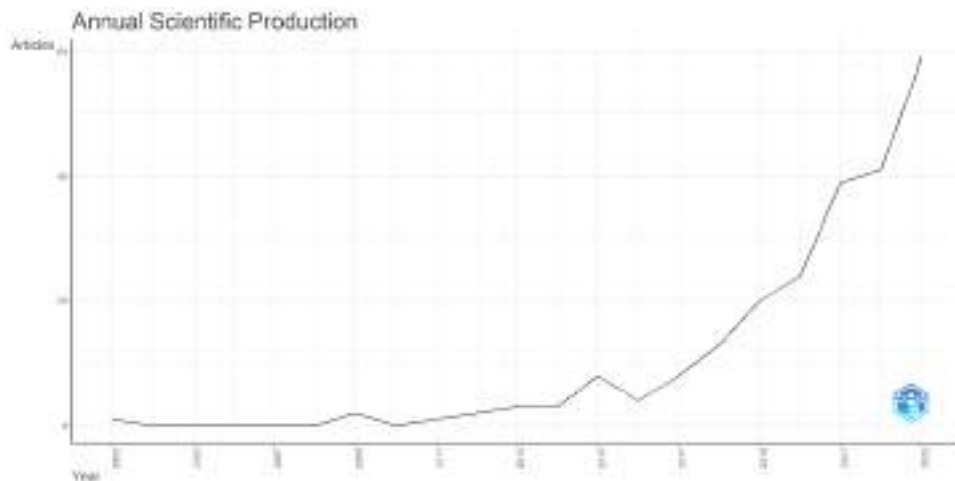


Figure 2 presents a detailed visualization of the evolution of research interests, illustrating the frequency of key terms associated with this area of study from the early 2000s to 2023. Utilizing a horizontal bar graph enhanced with bubbles of varying sizes, the graph displays the yearly frequency of each term. Here, the size of each bubble is directly proportional to the term's prevalence in that year, with larger bubbles indicating a greater frequency.

In recent years, terms related to Artificial Intelligence (AI) use, such as "machine learning" and "deep learning," have become predominant, signaling a significant pivot towards computational and AI-driven research. Concurrently, terms like "electroencephalography" and "heart rate" have maintained their prominence, reflecting a growing interest in these topics over the last few years. Similarly, an emphasis on "wearable technology" likely reflects the era's technological advances and their application in enhancing human health and behavioral studies.

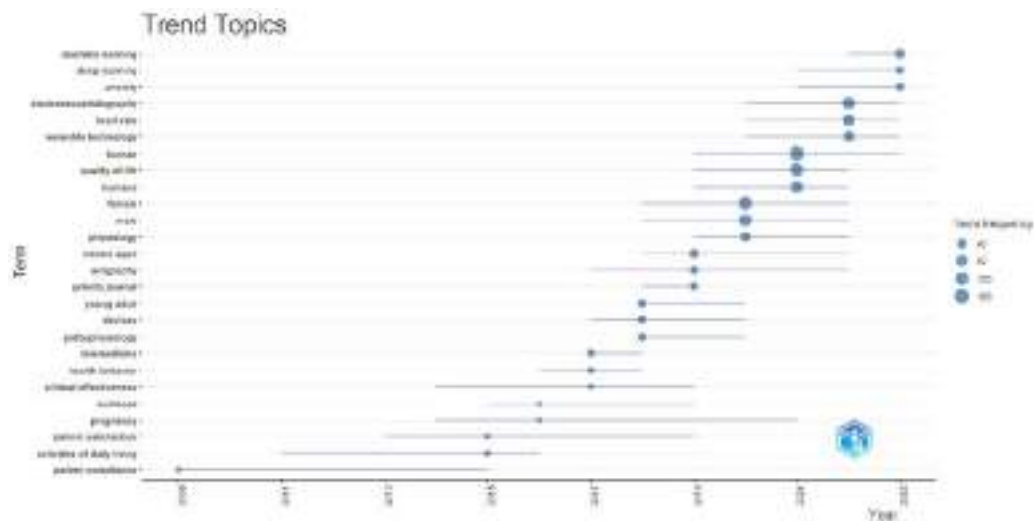
The graph also revisits the early to mid-2000s, highlighting a marked shift from "patient satisfaction" to broader terms such as "quality of life," and even focusing on specific aspects like psychological well-being, as presumably indicated by the high frequency of the term "anxiety."

Interestingly, after 2010, there is a noticeable increase in the frequency of a variety of keywords, including significant mentions of "human" and the gender-specific terms "female" and "male." This trend may signify either an increased focus on gender-specific research or a growing recognition of the importance of including sex-disaggregated data in scientific studies.

Furthermore, the emergence of terms like "telemedicine" and "health behavior" in the more recent parts of the graph underscores the growing interplay between technological innovation and healthcare practices, along with an increased focus on the behavioral dimensions of health.

Notably, the term "patient compliance" appears early in the timeline but consistently shows a lower frequency over the years, suggesting its role as a more specialized topic within the broader research domain. This progression not only reflects shifts in technological advancements and potential societal changes but also highlights the emergence of scientific interdisciplinary focuses.

Figure 2 – Trend Topics



Geographic Distribution of Research Activities Worldwide

The following figures (**Figure 3** and **Figure 4**) provide an insightful overview of the production of scientific literature across various countries. This distribution is distinguished by publications originating from a single country (SCP, depicted in cyan) and those resulting from international collaborations, known as multiple country publications (MCP, depicted in red). The United States leads in scientific output, boasting the highest total count of scientific works. It is closely followed by the United Kingdom and China, highlighting their significant contributions to the global research landscape.

Notably, countries like the United Kingdom, China, and the Netherlands, which show a predominance of red in their distribution, demonstrate a strong inclination towards international collaboration. In contrast, countries with a higher proportion of cyan, such as the USA and Canada, tend to produce more domestically-authored publications.

Italy ranks fourth in terms of document production, displaying a balance between SCP and MCP. Following Italy, Canada and Switzerland exhibit a lower total document output compared to the leading countries but still play vital roles in the global scientific community.

Figure 3 – Scientific Collaboration across Different Countries

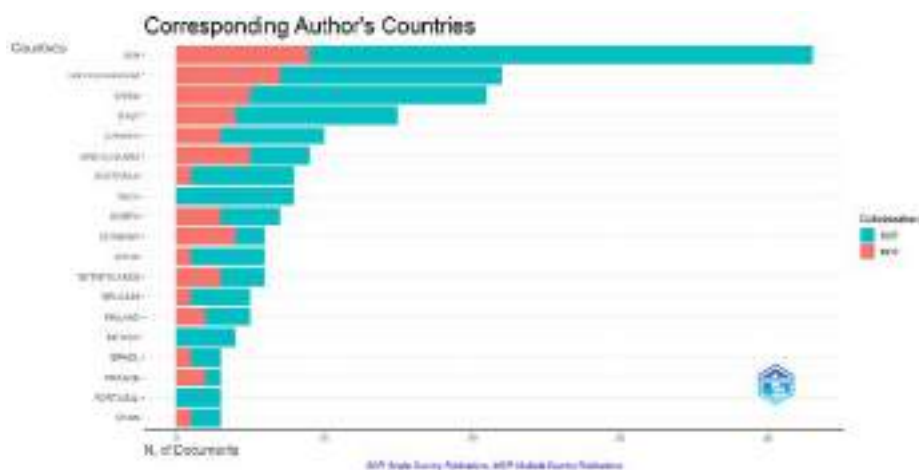
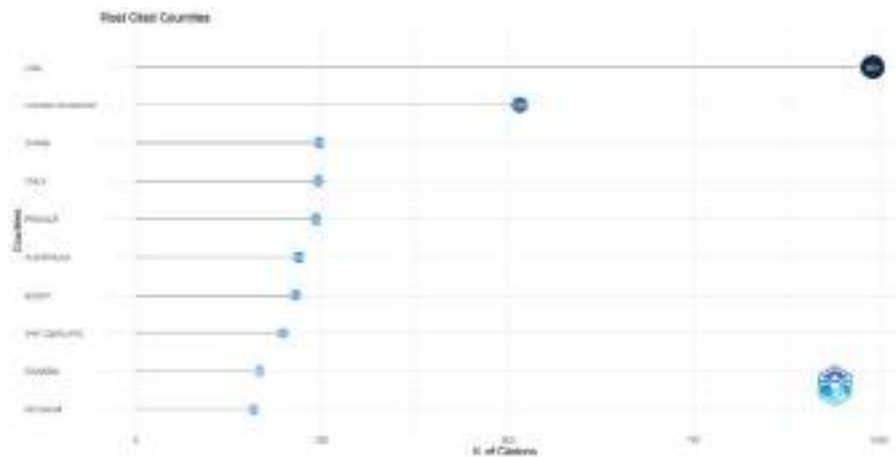


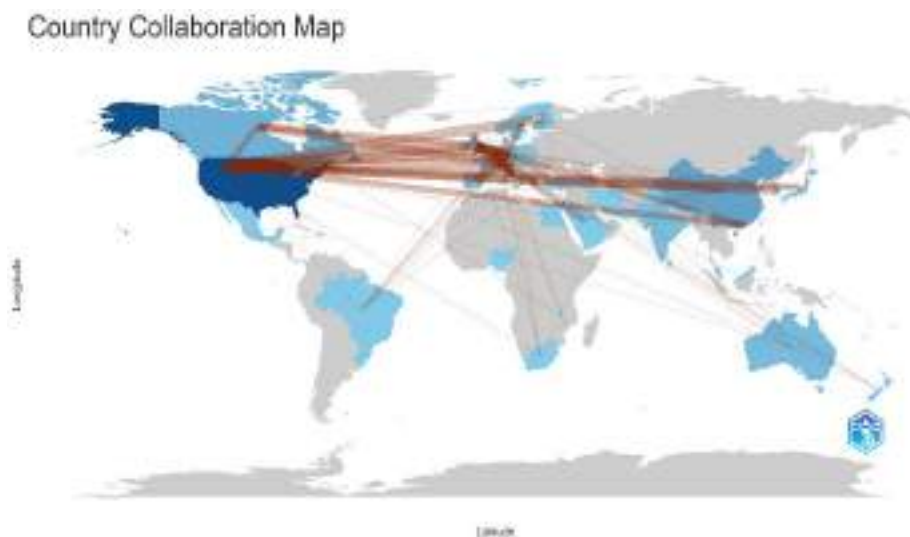
Figure 4 ranks countries according to the number of citations their scientific publications in this research area have received. In this visualization, each country is represented by a dot positioned along the horizontal axis, corresponding to the total number of citations that country's research outputs have garnered. From this visualization, it is clear that the United States is the undisputed leader in terms of citations, significantly outdistancing its closest competitors, the United Kingdom, China, Italy, and France. Following France, countries such as Australia, Egypt, Switzerland, Canada, and Belgium are notable for their closely clustered citation counts.

Figure 4 – Number of Citations by Country



Finally, the "Country Collaboration Map" (Figure 5) provides an informative, albeit intricate, depiction of the network of partnerships between countries. The thickness of each line directly correlates with the volume of research collaborations between two countries. The predominant presence of the United States is immediately evident, with a strong network that spans diverse geographical regions, showcasing an extensive engagement in global scientific endeavors. In contrast, the collaborative efforts of Canadian research institutions are highlighted, showing a strong orientation towards Europe. European collaboration, in turn, is represented as a tightly-knit network, underscoring the rich tapestry of inter-country research relationships within the continent. These connections not only strengthen Europe's internal scientific discourse but also project outward, demonstrating a commitment to global scientific collaboration.

Figure 5 – Countries Collaboration Map



Co-occurrence Analysis of Keywords

We performed a co-occurrence analysis using VOSviewer on authors keywords. By selecting the top 30 keywords that exceeded the co-occurrence threshold set at two times, we generated **Figure 6** with a resolution of 20 and a minimum cluster size of 10. As a result, we identified five distinct clusters, each represented by different colors.

The **first cluster, shown in red**, appears to focus on the monitoring of psycho-physiological states. This cluster includes keywords such as "heart rate variability," "autonomic nervous system," and "biomarkers," along with "stress detection," "anxiety," and "mental stress." Consistent with the "Trend Topics" graph (Figure 2), we observe a growing interest in keywords related to "mental health," a vital dimension in assessing individual well-being. Notably, biomarkers and physiological parameters used to measure stress and related phenomena are linked to the activity of the autonomic nervous system (ANS). ANS is responsible for the regulation of many physiological and involuntary functions, such as heart rate. ANS is divided into two different systems, i.e., the sympathetic nervous system and the parasympathetic nervous systems, which regulate the "fight or flight" response, and the "rest and digest" activities, respectively. These systems collaborate to maintain bodily equilibrium and respond to stress (McCorry, 2007). Heart rate variability (HRV) has attracted increasing attention as an indicator of ANS activity. A higher HRV indicates better cardiovascular fitness, stress resilience, and overall health, while a lower HRV suggests stress, fatigue, and possibly underlying health issues (Shaffer and Ginsberg, 2017). HRV is applied in various fields, including consumer research, to evaluate autonomic nervous

system function and overall well-being. The red cluster also notably includes keywords related to techniques commonly applied in neurophysiology, including "actigraphy" and "electroencephalography" (EEG), which are commonly applied, for instance, in the study of sleep and circadian rhythms. With respect to these keywords, we observe a partial overlap between the red cluster and the green cluster.

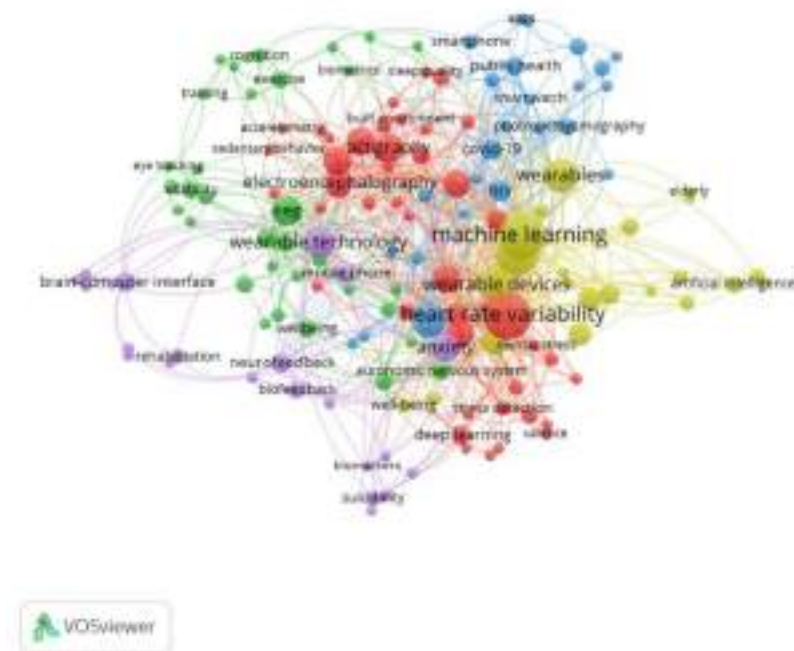
The **green cluster** primarily contains technology-related keywords, such as "wearable technology," "EEG," and "eye-tracking." Among consumer neuroscience techniques, EEG and eye-tracking are two of the most used tools. This cluster could indicate a focus on the usability of these techniques for collecting (neuro-)physiological data, and their application to human "cognition," "training," and "well-being."

The **purple cluster** emphasizes some of the possible direct applications of collected information through neurophysiological devices in order to modify individual behavior. We, indeed, notice keywords like "neurofeedback" and "biofeedback." Neurofeedback and biofeedback are methods that train individuals to enhance their health and performance by providing real-time feedback on physiological functions (Yu et al., 2018; Marzbani et al., 2016). Biofeedback offers insights into bodily functions like heart rate and muscle tension, supporting stress management and the treatment of hypertension and chronic pain. Neurofeedback specifically targets brain activity, aiding individuals in modifying their brain waves to improve cognitive performance and treat conditions such as ADHD and anxiety. Both techniques exploit the mind-body connection to foster self-regulation and awareness for better well-being.

The **blue cluster** highlights a broader potential application of these technologies, extending beyond individual assessment and intervention. Keywords like "smartphone," "public health," "apps," "smartwatch," and "COVID-19" emphasize the use of mobile technology in public health, particularly in response to the pandemic (Budd et al., 2020), indicating an interest in leveraging wearable technologies, smartphones, and apps for health monitoring and disease tracking (e.g., Lu et al, 2020; Bayoumy et al., 2021).

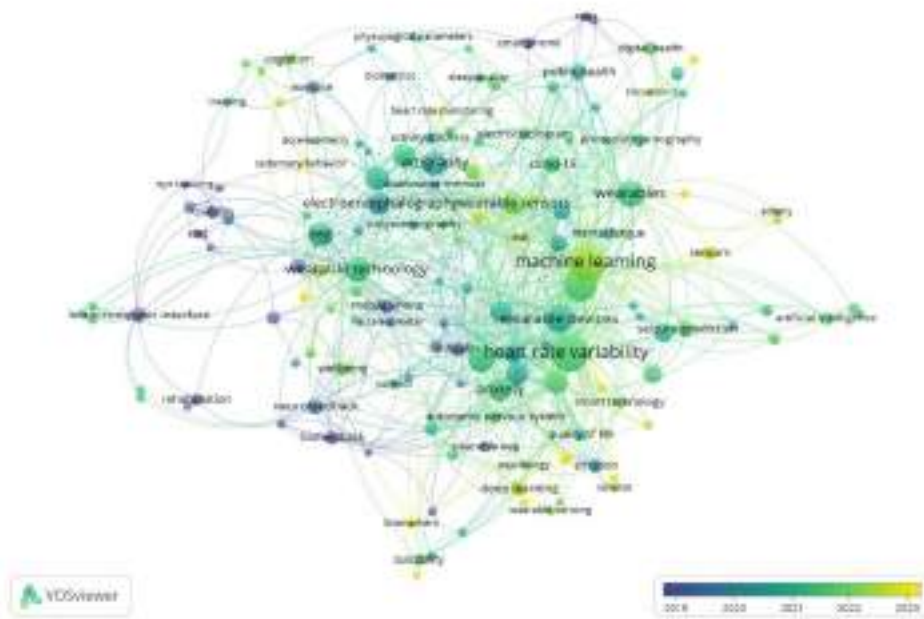
Finally, the **yellow cluster** focuses on keywords related to the integration of Artificial Intelligence with wearable technology. The occurrence of keywords such as "machine learning", "deep learning", and "artificial intelligence" can indicate a strong emphasis in recent years on the computational and algorithmic aspects of data analysis and the development of intelligent systems in the wearable technology context.

Figure 6. The Co-Occurrence Network of the Top 30 Keywords Analysed.



Lastly, **Figure 7** displays the same findings as Figure 6, providing a snapshot of the scientific landscape and its evolution over the timespan of the last few years (2019-2023).

Figure 7. The Co-Occurrence Network of the Top 30 Keywords Analysed Over Time.



Discussion. The objective of this work-in-progress research was to map the current research landscape at the intersection of various disciplines and explore potential applications of wearable technology in consumer behavior research.

For this purpose, we conducted a bibliometric analysis to assess the current state of research.

Our initial bibliometric analysis has unveiled key insights that can provide a solid groundwork for discussing the development and barriers to adoption of (neuro-)physiological technologies in consumer behavior research. Our data reveals a noticeable upward trend in scholarly publications on this interdisciplinary topic since 2011, with a peak occurring just before 2023. This trend highlights a burgeoning academic interest in the applicability and scalability of (neuro-)physiological tools for monitoring individual health and enhancing well-being, which is central to our investigation within the Technology Acceptance Model (TAM) framework (Davis, 1989). Notably, recent years have witnessed a shift towards AI-driven research in this domain, with “machine learning” and “deep learning” emerging as prominent terms. This shift could emphasize the growing importance of computational methods in improving technology implementation.

Furthermore, our analysis has consistently shown an interest in monitoring health-related metrics, such as heart rate variability, which can be applied to evaluate overall well-being/stress, also in consumer behavior research (Kakaria et al., 2023).

In a geographical perspective, our findings highlight that the leading contributors in terms of publication output and citation impact are the United States, the United Kingdom, China, and Italy, with different levels of international collaboration.

The co-occurrence analysis of author keywords paints a complex research landscape, identifying five different clusters. We distinguished a cluster mainly focused on monitoring psycho-physiological states (e.g., stress vs well-being); a second cluster containing keywords related to technology usability; a third cluster referring to behavior modification through “neurofeedback” and “biofeedback”; a fourth cluster suggesting public health applications; and a fifth cluster reporting keywords linked to the integration of artificial intelligence with wearable technology. Particularly, AI-driven systems can enhance computational capabilities for data analysis and could provide platforms that may interactively assist consumers in understanding the neurophysiological data collected through wearables, and potentially in adjusting their behaviors accordingly.

Standing at the intersection of multiple disciplines, our analysis highlights the promising applications of wearable technology in consumer behavior research, underscoring its potential to transform this field.

Limitations and Future Research Agenda. We acknowledge the descriptive nature of our ongoing work on the potential applications of consumer neuroscience and wearable technologies for enhancing consumer well-being. Opting for a bibliometric analysis has been pivotal in shedding light on the foundational aspects of this emerging, interdisciplinary field. Although recent academic efforts have made topics related to consumer neuroscience technologies more visible (e.g. Bazzani et al., 2020), they often fail to adequately explore the complex interactions between various technologies that collect physiological data and their applications in marketing (e.g., Clithero et al., 2024). We admit that our study has limitations, notably its inability to exclusively focus on scientific contributions that directly explore the

integration of scalable consumer neuroscience technologies within the marketing research landscape (e.g., Alvino et al., 2020).

Therefore, more research is needed. However, through this preliminary study, we intend to underscore the importance of disciplines that contribute to developing user-friendly devices capable of collecting (neuro-)physiological parameters for consumer behavior research. Recognizing the benefits of interdisciplinary collaboration among neuroscience, medicine, and bioengineering professionals is a crucial step forward. This collaboration would ideally lead to the creation of a standardized research protocol for applying scalable versions of such techniques in marketing experiments.

Moreover, we acknowledge the limitations imposed by organizing keywords into five distinct, somewhat arbitrary categories. As a next step, conducting a systematic literature review is essential to establish structured guidelines for both scholars and practitioners.

Managerial implications. The adoption of wearable consumer-grade devices that capture (neuro-)physiological data has significant implications for marketing scholars and professionals, as well as for healthcare providers. Current research is focused on empirically demonstrating how these technologies can be integrated into consumer daily lives to enhance health outcomes and well-being (e.g., Lu et al, 2020; Bayoumy et al., 2021). A key consideration is understanding when consumers are comfortable relying on these devices for accurate physiological monitoring to improve well-being and for what purposes they are willing to share their data. According to the Technology Acceptance Model (TAM), improvements in usability and perceived usefulness are essential for the broader adoption of wearable (neuro-)physiological devices in everyday consumer life. A positive user experience can increase satisfaction and lead to word-of-mouth recommendations, accelerating market adoption. Manufacturers and marketers should prioritize designing intuitive interfaces and effectively communicate the tangible benefits of their devices.

For businesses, the data gathered from these devices could provide useful insights beyond traditional survey methods, offering a deeper understanding of consumer behavior, including activity peaks and mood fluctuations. These insights are invaluable for crafting tailored marketing strategies and product offerings. For instance, fitness brands could offer incentives for sharing health data to gain insights for customized product development. Health insurers that encourage healthy living through wearable devices can also use the collected data to customize their services (e.g., Nayak et al., 2019). Applying these strategies to industries like hospitality can improve customer experiences, enhancing satisfaction and loyalty (Kansakar et al., 2019).

Moreover, policymakers can use neurophysiological data collected through wearables to identify vulnerable populations, and modify communication strategies accordingly, to better reach them. This would increase the impact and relevance of institutional communication during emergencies, as well as the effectiveness of public health messages. Specifically, healthcare providers stand to benefit from this data by targeting services to patients and employing this knowledge to increase the effectiveness of public initiatives for health prevention.

Originality of the paper. We conducted a bibliometric analysis to explore the development of consumer neuroscience and the use of wearable technologies in consumer research. This analysis, which examines publication patterns, citation networks, and thematic evolution, reveals how discourse in the field has evolved and identifies key areas ripe for future research. By doing so, the analysis acts as an essential tool for outlining the field's progression, pinpointing literature gaps, and suggesting how incorporating the Technology Acceptance Model (TAM) into consumer neuroscience and wearable technology research can open new avenues for enhancing consumer well-being. In a recent conference paper, Alvino et al. (2023) attempted to apply TAM to understand how marketing professionals adopt consumer neuroscience tools. Building on their work, we suggest broadening the range of tools in consumer neuroscience to include devices that collect physiological data (Clithero et al., 2024), indicating the potential for technological advances from the biomedical sector to influence consumer behavior research, offering significant benefits to individual and societal well-being on a wider scale.

References

- ALVINO L., HERRANDO C., LESZKIEWICZ A., HORSTEN C., ROBBEN H. Investigating the adoption of neuroscience technology among marketing professionals: A survey on the intention to use neuromarketing tools.
- ALVINO L., PAVONE L., ABHISHTA A. (2020), "Picking your brains: Where and how neuroscience tools can enhance marketing research", *Frontiers in neuroscience*, vol. 14, 577666.
- ARIA M., CUCCURULLO C. (2017) bibliometrix: An R-tool for comprehensive science mapping analysis", *Journal of Informetrics*, vol. 11, n. 4, pp. pp 959-975, Elsevier.
- BAYOUMY K., GABER M., ELSHAFFEY A., MHAIMEED O., DINEEN E.H., MARVEL F.A., ELSHAZLY M.B. (2021), "Smart wearable devices in cardiovascular care: where we are and how to move forward", *Nature Reviews Cardiology*, vol. 18, n. 8, pp. 581-599.
- BAZZANI A., RAVAIOLI S., TRIESTE L., FARAGUNA U., TURCHETTI G. (2020), "Is EEG suitable for marketing research? A systematic review", *Frontiers in Neuroscience*, vol. 14, 594566.
- BUDD J., MILLER B.S., MANNING E.M., LAMPOS V., ZHUANG M., EDELSTEIN M., MCKENDRY R.A. (2020), "Digital technologies in the public-health response to COVID-19", *Nature medicine*, vol. 26, n. 8, pp. 1183-1192.
- CLITHERO J.A., KARMARKAR U.R., NAVE G., PLASSMANN H. (2024), "Reconsidering the path for neural and physiological methods in consumer psychology", *Journal of Consumer Psychology*, vol. 34, n. 1, pp. 196-213.
- DAVIS F.D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", *MIS quarterly*, pp. 319-340.

- DOBSON R., STOWELL M., WARREN J., TANE T., NI L., GU Y., WHITTAKER R. (2023), "Use of Consumer Wearables in Health Research: Issues and Considerations", *Journal of Medical Internet Research*, vol. 25, e52444.
- FERREIRA J. J., FERNANDES C. I., RAMMAL H.G., VEIGA P.M. (2021), "Wearable technology and consumer interaction: A systematic review and research agenda", *Computers in human behavior*, vol. 118, 106710.
- FUENTES C., SÖRUM N. (2019), "Agencing ethical consumers: smartphone apps and the socio-material reconfiguration of everyday life", *Consumption Markets & Culture*, vol. 22, n. 2, pp. 131-156.
- KAKARIA S., BIGNE E., CATRAMBONE V., VALENZA G. (2023), "Heart rate variability in marketing research: A systematic review and methodological perspectives", *Psychology & Marketing*, vol. 40, n. 1, pp. 190-208.
- KANSAKAR P., MUNIR A., SHABANI N. (2019), "Technology in the hospitality industry: Prospects and challenges", *IEEE Consumer Electronics Magazine*, vol. 8, n. 3, pp. 60-65.
- KARMARKAR U.R., PLASSMANN H. (2019), "Consumer neuroscience: Past, present, and future", *Organizational Research Methods*, vol. 22, n. 1, pp. 174-195.
- LU L., ZHANG J., XIE Y., GAO F., XU S., WU X., YE Z. (2020), "Wearable health devices in health care: narrative systematic review", *JMIR mHealth and uHealth*, vol. 8, n. 11, e18907.
- MARZBANI H., MARATEB H.R., MANSOURIAN M. (2016), "Neurofeedback: a comprehensive review on system design, methodology and clinical applications", *Basic and clinical neuroscience*, vol. 7, n. 2, pp. 143.
- MCCORRY L.K. (2007), "Physiology of the autonomic nervous system", *American journal of pharmaceutical education*, vol. 71, n. 4.
- NAYAK B., BHATTACHARYYA S.S., KRISHNAMOORTHY B. (2019), "Integrating wearable technology products and big data analytics in business strategy: A study of health insurance firms", *Journal of Systems and Information Technology*, vol. 21, n. 2, pp. 255-275.
- SHAFFER F., GINSBERG J.P. (2017), "An overview of heart rate variability metrics and norms", *Frontiers in public health*, vol. 5, 290215.
- TIKKANEN H., HEINONEN K., RAVALD A. (2023), "Smart wearable technologies as resources for consumer agency in well-being", *Journal of Interactive Marketing*, vol. 58, n. 2-3, pp. 136-150.
- VAN ECK N.J., WALTMAN L. (2011), Text mining and visualization using VOSviewer. arXiv preprint arXiv:1109.2058.
- VAN ECK N., WALTMAN L. (2010), "Software survey: VOSviewer, a computer program for bibliometric mapping", *Scientometrics*, vol. 84, n. 2, pp. 523-538.
- WARDLAW J.M., O'CONNELL G., SHULER K., DEWILDE J., HALEY J., ESCOBAR O., SCHAFER B. (2011), "Can it read my mind?"—What do the public and experts think of the current (mis) uses of neuroimaging?", *PloS one*, vol. 6, n. 10, pp. e25829.
- YU B., FUNK M., HU J., WANG Q., FEIJS L. (2018), "Biofeedback for everyday stress management: A systematic review", *Frontiers in ICT*, vol. 5, n. 23.

Unveiling the Dynamics of GPT Technology Adoption: Assessing Trust in Technology and Self-Efficacy's Influence on Consumer Behavior

FRANCESCA CELIO¹ FRANCESCO RICOTTA²

Abstract

This study explores the dynamics of user engagement with Chat GPT, an AI-powered chatbot, through the lens of trust, self-efficacy, knowledge, and technology acceptance. Utilizing a task-based experimental design, we examine how these dimensions influence technology adoption among two distinct user groups: "Current Users" and "New Users". Our research seeks to unravel the influence of these variables on individual behavior and the intricacies of decision-making in the realm of AI chatbot engagements, delivering comprehensive insights into the catalysts and impediments to adopting technology. The present research makes a valuable contribution to the wider thematic of consumer-technology relationship, emphasizing the need for enhancing digital literacy and trust to promote wider acceptance and satisfaction with emerging technologies both for current and new users.

Key words: Chat GPT; Knowledge; Self-Efficacy; Trust; Technology Adoption; Protocol Analysis

Framing of the research. Understanding how consumers interact with technologies based on intelligent agents as well as artificial intelligence, has attracted a wide debate over different scholars (Mariani et al., 2022; Coombs, 2020, Puntoni et al., 2020). Several scholars have directed their research towards different variables, including knowledge, technology acceptance, self-efficacy, and trust. In this paper, the aim is to investigate these variables, the relationships between them, and the consequences they exert on consumer choice.

Cegarra-Navarro et al. (2014) define knowledge as "the knowledge and ability to use specific technologies such as the Internet". Technological knowledge is not only about understanding emerging technologies, but also about the ability to use them. Furthermore, knowledge can contribute to improving user interaction, technology acceptance and facilitating personal decisions in multiple contexts (Kelly et al., 2023). Consequently, this study aims primarily to explore how pre-existing knowledge and experience play a role in creating a favorable environment for the acceptance of technology. Within a setting marked by significant technological progress and swift changes, users form new preferences through utilizing the comprehensive scope and detailed insights of accessible knowledge (D'Angelo and Valsesia, 2022).

According to Tuu et al. (2021) there is a positive association between technology experience and acceptance of mobile technology, as consumers with high technology experience often perceive the use of mobile devices as easier, more convenient and useful. Technological experience is seen as a combination of ease of use, access to knowledge, and flexibility in adapting to new situations.

Consumers with higher expertise associated with the applied technology are more likely to obtain more effective results, since their knowledge foundation is highly developed. "The facilitation of AI adoption is determined by a variety of factors, including users' knowledge, available resources, and the accessibility of guidance from marketers or peers (Mahardika et al., 2019). Berkowsky et al. (2017) point out that consumers with high knowledge are more inclined to demonstrate a positive attitude due to their familiarity and experience.

A high level of technology knowledge could increase users' confidence and their ability to effectively use the technology, thus promoting the overall improvement of personal ability.

Furthermore, Nyberg et al. (2022) suggest that knowledge positively correlates with self-efficacy, which in turn is a significant predictor of performance. They link scientific competence with self-efficacy, explaining that it encompasses two dimensions: knowledge of scientific content and the ability to reason scientifically. Their research highlights that positive self-efficacy is connected not only to academic achievements but also influences motivational processes, self-regulation strategies, self-perceptions, and interests, as evidenced by the works of Bandura & Schunk (1981), Klassen & Usher (2010), Pajares & Valiante (1997), and Schunk (1995). The authors showed how the investment in persistence and effort in completing challenging tasks is higher in individuals with a positive level of self-efficacy (Pajares, 1996). Based on Bandura's theory of social cognition (1977), self-efficacy is classified as a competence belief and is understood as the

¹ Sapienza University of Roma
e-mail: francesca.celio@uniroma1.it

² Sapienza University of Roma
e-mail: francesco.ricotta@uniroma1.it

belief in one's ability to cope with a future situation or task. The results show significant relationships between task-specific self-efficacy in scientific reasoning and performance in scientific reasoning, as well as between task-specific self-efficacy, scientific content knowledge and performance in scientific content knowledge.

Self-efficacy is characterized as the conviction in one's capability to accomplish a specific task under given circumstances, reflecting confidence in one's abilities rather than the actual possession of specific skills (Bandura, 1977). Within the framework of Self-efficacy Theory, such a construct is more precisely conceptualized as the confidence an individual has in their capacity to effectively influence their environment through the successful completion of tasks or resolution of problems. This concept plays a pivotal role in theories of motivation, impacting areas such as academic motivation and career decision-making

When people with high self-efficacy achieve a certain goal, there is a good chance that their next goal will be more challenging. And if a goal is not achieved, the way people react varies from person to person. Some respond with renewed commitment, others with despair and apathy. The results can be self-reinforcing. On the other hand, successfully achieving goals can increase self-efficacy and thus the future likelihood of success. Numerous investigations have empirically confirmed the impact of self-efficacy on technology adoption behaviour (Holden et al., 2011; Zhang et al., 2017; Ellen et al. 1991). Consumers with high self-efficacy show a stronger motivation to perform specific tasks than those with low self-efficacy, indicating a higher confidence in achieving positive outcomes (Noe and Wilk 1993; Tannenbaum et al. 1991). Consumers with an elevated degree of self-efficacy in technology demonstrate greater involvement in the use of technology-based services (Dabholkar and Bagozzi, 2002), accompanied by a more favourable attitude and a greater intention to use such services than those with a lower level of self-efficacy in technology. It clearly emerges that the consumer's level of self-efficacy may anticipate the adoption behaviour of new technologies by individuals.

In contrast, Roy et al. (2019) focus on users who do not have high knowledge. Their research suggests that consumers with low technology knowledge may show lower levels of self-efficacy and trust towards new technologies, which may lead to lower technology acceptance. Their lack of familiarity and experience with technology may lead to uncertainties and doubts about their ability to use new technologies effectively, their trustworthiness and the usefulness of the technology. In essence, consumers who are less familiar with the technology used tend to have less confidence and feel less secure in its use, which may make them less likely to accept it.

It follows that unfamiliarity directly influences the practice and perception of new technologies, which suggests that greater familiarity with the technology might encourage more deliberate practice (Colvin, 2010).

According to the author, in fact, years of deliberate practice can even change an individual's body and mind. Several studies show that by continuously repeating the right exercises and putting them into practice, an average professional can transform into an exceptional performer (Bandura, 1977; Colvin, 2010 ; Kodden, 2014).

Analyses show that experience with technology, autonomous learning and socio-economic background are determinants of variations in ICT self-efficacy. These findings suggest that ICT self-efficacy is closely related to computer literacy, even when controlling for other baseline characteristics and contextual variables.

These results suggest a very clear distinction between computers self-efficacy and computer competence, showing that an individual's comfort level with computer use may not match her/his capabilities to properly handle the computer. In other words, a person might feel confident in using digital technologies without necessarily having a thorough knowledge of them.

In addition, research emphasize how ICT competence substantially anticipates ICT self-efficacy. Extended engagement with technology gradually enhances understanding and skills, leading to more effective use of Information and Communication Technology (ICT) across various contexts. Bandura (1977) further notes that an individual's perceived or potential capability to adeptly handle a product is mirrored in their evaluative and behavioral responses towards the product.

Therefore, self-efficacy is believed to play a significant role in shaping the development of beliefs and behaviors related to intentions to use technology, while also having an indirect impact on the perceptions of its ease of use and its perceived value. Self-efficacy is pivotal for an exhaustive comprehension of how individuals perceive and adopt new technologies. Individuals with higher levels of self-efficacy are more likely to view new digital technologies as user-friendly and beneficial, which diminishes their resistance to change and enhances their readiness to embrace these innovations. Notably, consumers who are more receptive to AI technologies exhibit a more pronounced positive influence on their level of self-efficacy compared to those who are less receptive (van Esch et al., 2021). This indicates that self-efficacy not only directly influences individuals' attitudes and behaviors towards technology but also does so indirectly. By nurturing confidence in one's capabilities, the encouragement of adopting and utilizing new technologies can be significantly enhanced. People's confidence in their ability to use technology (self-efficacy) and their perception of how easy it is to use (ease of use) affect their decision to adopt new technologies.

However, self-efficacy is not the sole factor that matters: Trust also plays a significant role. According to Tams et al. (2017), trust can decrease feelings of emotional arousal and anxiety, increasing self-efficacy (Kelly and Noonan, 2008). Trust helps reduce negative emotions and promotes self-efficacy (Bandura, 1977; Marakas et al., 1998). Self-efficacy in using technology can have different impacts on how well technology is used after its adoption. Self-confidence affects how technology is used after adoption, leading to better job performance and successful management of strategic changes

In their study, Zheng Yan et al. (2014) describe trust as a complex concept involving security, belief and expectations about reliability, integrity, protection, capability, and other characteristics of an organization.

With his contribution, Areej AlHogail (2018) points out that trust can be perceived as a significant factor that influences the behavioral intention to use an IoT technology and has a strong effect compared to other concerns such as privacy. Falcone and Sapienza (2018) indicated several reasons why users may not grant high levels of trust, as they may fear that a task will not be completed as expected or at all, or even that harm will be caused. Consumer acceptance of new technologies relies heavily on building their trust: lower levels of trust in the proposed technology can hinder its adoption.

This research aims to provide a novel perspective on the relationship between consumers and their attitudes towards technology, specifically focusing on three variables: trust, self-efficacy and technology adoption.

Purpose of the paper. The use of advanced technologies, specifically Chat GPT, can influence consumers' behaviors. Building on existing knowledge, three critical factors influence the attitude toward the use of Chat GPT: trust in technology, perceived usefulness, and self-efficacy. Given that GPT technology is a relatively new category for consumers and has not yet been thoroughly explored, our research aims to delve into how users' prior knowledge impacts their perceptions, evaluations, and decision-making processes when using Chat GPT. This paper aims at exploring the key variables of technology acceptance, self-efficacy and trust, and how those are framed depending on the level of users' pre-existing knowledge.

Methodology. This study adopts an exploratory approach aimed at understanding the interaction processes between individuals and a complex technology like AI. In particular, the goal is to understand the mental processes that drive the use of AI and then to explore its antecedents. Consistent with the theoretical assumptions cited, we believe that the research can be useful in characterizing the subjective drivers that fuel the antecedent of AI adoption: self efficacy and trust. To better address this task, we run four personal in depth interviews based on protocol analysis technique.

This approach allows users to verbalize their thoughts – the think aloud method - while completing a specific task. By doing so, we aim at gaining insights into the cognitive processes that shape users' interactions with Chat GPT. Protocol analysis is a well-established technique in cognitive psychology, with researchers like Newell and Simon (1972) and Ericsson and Simon (1980, 1993) emphasizing its value for investigating cognition from an information-processing perspective (Smagorinsky, 1998).

The interviews took place in October 2023. The study involved four participants, split into two groups based on their familiarity with ChatGPT. Group 1 comprised users knowledgeable about ChatGPT's capabilities and applications, while Group 2 consisted of users with no prior experience and knowledge on the AI chatbot. This distinction allowed us to examine variations in their approaches, experiences, and perceptions between novices and expert users.

We formulated the questions using wording that refrained from expressing either agreement or disagreement with their responses, ensuring no pauses occurred between questions. To adhere to the protocol analysis meticulously, we established a set of procedures both prior to and during the interviews. Before initiating each protocol, we assigned a unique code to each interviewee and prepared a protocol sheet detailing the interview date, along with the start and end times of each session. The interviews averaged 14 minutes in duration, with the longest extending up to 18,19 minutes and the shortest lasting 11,33 minutes.

Participants engaged in a task where they utilized the AI assistant Chat GPT to plan a trip. Throughout the process, they shared their thoughts, choices, questions, and approaches in real-time.

The study has been divided in four steps as follow:

- (a) Preparation and Orientation: All participants learnt about the study's goals and how Chat GPT works. They received specific instructions on the task they would perform (Figure 1). They had a reference table with tasks and subtasks to follow, in order to plan a trip.

Figure 1. Reference table with tasks and subtasks

Generic Task	
1.	Choose a destination to visit
Specific Tasks	
2.	General information on required visas and mandatory/recommended vaccinations
3.	Identify the best time of year to go visit
4.	Choose the area(s) to stay in
5.	Find restaurants serving local cuisine
6.	Identify the main places of interest
7.	Check the weather to decide what clothes to bring
8.	Choose any additional activities to do

Source: Our elaboration

- (b) Interaction Sessions: Each participant had a one-on-one conversation, without any distractions, with Chat GPT while planning a trip. During these sessions, participants shared their thoughts as part of a "think aloud" process.

- (c) *Data Collection*: The interactions were recorded and analyzed later. Participants' verbalizations were transcribed and categorized in two types of events - actions and objectives - based on predetermined variables, including trust, self-efficacy, and technology acceptance.
- (d) *Follow-up interviews*: After the sessions concluded, users participated in a debriefing interview. This interview aimed to gather their insights on the overall experience, their satisfaction and their perspectives on the variables investigated in the study, to have a more profound comprehension on how familiarity with new technology affects the users' experience.

Results. In the results section of this study, the interactions of four subjects with Chat GPT 3.5 for the purpose of plan a trip are analyzed, using the protocol analysis method. Participants fell into one of two groups based on their familiarity with the chatbot: "Current Users" who were very familiar with Chat GPT and "New Users" who had little to no prior knowledge. The study aims to understand how factors like trust, self-efficacy, and technological adaptation influence the user experience, and how these factors change based on the users' pre-existing knowledge of the technology.

I. Trust

The level of trust towards Chat GPT significantly diverges between the two groups. "Current Users" exhibit trust that has matured through repeated use of the platform, translating into specific expectations regarding the system's functionalities and limitations that the chatbot has to offer, such as the inability to display maps or to have direct links with other websites for obtaining an accurate price estimate. The interviewee No. 2 shows a form of surprise upon seeing the proposed results. However, he/she retains unaltered trust in the tool and asks for the information to be specified in a more specific field: "So I hadn't chosen whether I wanted to go to the Mediterranean or the Atlantic, and I'm more interested in Costa del Sol. So, I will ask for more information, and I will say that I am interested in Costa del Sol".

This category highlights a greater critical awareness towards the responses received and, when expectations are not met, negative feelings towards the chatbot are generated (e.g., "Ah... It does not show this information, I need to look it up by myself"; "However, he can't give me the answer").

Conversely, "New Users" rapidly develop trust based on the accuracy and relevance of the information received, despite a previous lack of familiarity with the interface. Their positive experience, culminating in informative satisfaction, underscores the efficacy of Chat GPT in meeting informational needs, even without prior interactions with the AI powered chatbot (e.g., "It is explaining strategies to get cheaper flights, also clearing the research history is useful. Great, I will do this"; "It is suggesting me many alternatives"; "I am very satisfied, it gives very detailed information and even more choices. I give it positive feedback, I like it.").

II. Self-Efficacy

The self-efficacy demonstrated by subjects reflects differences in the approach to using Chat GPT. "Current Users" exhibit high self-efficacy levels, navigating the interface easily and with confidence and conducting detailed searches relevant to their objectives, resulting in longer interaction times. This behavior indicates a greater propensity to deeply explore the platform's informational capabilities and all the functions that it has to offer. During the hotel search phase, respondent No. 2 asked about the best areas for accommodation and accepted one of the options suggested by the chatbot, without questioning the reliability of the information provided. At that moment, they were pleasantly surprised ("Ah, it even directs me to hotel booking sites") by the ability to seamlessly continue their search on hotel booking websites recommended by Chat GPT, finding it beneficial to proceed directly from there without the need to open a new search tab. On the other hand, "New Users" display an increase in self-efficacy levels throughout the experiment. The ease of use and intuitiveness of the interface facilitate quick adaptation, enabling individuals without prior experience to feel capable of efficiently using the technology. Initially, despite a brief initial explanation of Chat GPT's functionality, the non users struggled to understand how the chat bot worked. The users struggling with understanding which type of tasks Chat GPT could do, initially asked more general questions before becoming more familiar with the chatbot's functionality. Subsequently, as the depth of the responses was better understood, more complex queries were developed, which at some point would allow the users to bypass some steps in the research by having two or more questions in one single query. There is observable evidence of increasing efficacy with which inquiries are posed to Chat GPT. The initial questions tend to be generic, such as "I would like to visit Paris, when is the weather good?" However, subsequent queries, following a period of acclimatization to the chatbot and a realization of its capabilities, become more specific and pragmatic: "How and where can I purchase tickets at a reasonable/discounted price?" Consequently, new users have achieved an increasingly higher level of self-efficacy, attributable to a growing awareness of the applications and potentiality of Chat GPT.

III. Technology Adoption

The propensity to adopt Chat GPT as a support tool in organizing trips is influenced by a combination the variables of trust and self-efficacy. "Current Users" approach the platform with a critical but informed attitude, demanding advanced functionalities and carefully evaluating the accuracy of the information provided, sometimes comparing it with information previously obtained from other channels ("as a starting point is very valid, but I still want to verify this information or look for more, to make sure I haven't missed anything" – Interviewee No. 1). This group represents a case of mature technological adoption, where prior experience shapes expectations and interaction with the chatbot.

Conversely, "New Users" demonstrate openness to adopting Chat GPT, motivated by the immediate informational efficacy experienced and the surprise generated by the speed and ease of use. Respondent number 2 experienced a moment of surprise when seeking advice regarding the local culinary specialties, due to the fact that he/she had never tried such dishes and consequently lacked any expectations: "ok, obviously I do not know any of these dishes, but they are described in a clear way, so I am able to imagine them in my head. My interest is piqued by the Pad Thai, because i really like

noodles, and I would not have understood that they were similar if I did not read the description." In this instance, Chat GPT offered a concise yet accurate explanation, facilitating the user's formation of expectations concerning the food and providing an answer to a question pertaining to an as-yet unarticulated need regarding the specific ingredients and appearance of the dish. This initially positive experience suggests a higher probability of integrating Chat GPT and similar technologies into future activities, denoting an initial phase of technological adoption driven primarily by perceived usability and a positive user experience.

Research limitations. Despite its insightful contributions, several limitations should be acknowledged due to its current development stage.

First, the limited sample size and specificity may restrict the generalizability of the findings. More diversified or larger samples might be useful to enhance the representative power.

Secondly, the methodology developed around protocol analysis gives good in-depth qualitative insights but lacks the wider landscape that results from quantitative means could bring for statistical generalization. We are actively working on the further development of this analysis and on the design of a quantitative analysis model.

Furthermore, focusing such research only on ChatGPT would limit the generalizability of its relevance for other new technologies. Broadening the research to other technologies could enrich the results of the study.

In that way, while the present study offers salient first insights into how users interact with AI chatbots, duly considered limitations will balance the findings and guide future research directions that may be attempted to be advanced within this rapidly evolving domain of consumer-technology relationships.

Managerial implications. The findings of this study highlight that trust, self-efficacy, and technological adoption are key factors in users' interactions with Chat GPT. Understanding these variables provides crucial insights for the development of strategies aimed at improving user engagement and refining technological platforms according to users' needs and expectations.

This aligns with the notion that trust in technology not only reduces hesitancy but also fosters a sense of security and reliability among users (Tams et al., 2017; Areej AlHogail, 2018).

Moreover, the role of prior knowledge and experience in shaping user interaction with Chat GPT cannot be overstated. Our findings indicate that technology-educated users have a nuanced understanding and a critical approach towards adopting and using Chat GPT, highlighting the importance of technological knowledge in navigating the complexities of modern digital tools. The study also sheds light on the initial barriers faced by users with limited technological and functional knowledge of Chat GPT. The progression from a state of uncertainty to one of confidence and trust in Chat GPT's capabilities illustrates how important intuitive design and user experience are in mitigating these barriers, affirming the usefulness of ease of use and perceived utility in the adoption process. Recognizing the diversity in users' technological background and leveraging this variability can lead to more personalized and efficient user interactions. Advanced users could be offered more complex functionalities, while newcomers might benefit from a more guided experience.

Originality of the paper. This research contributes to the ever-present discourse on consumer-technology interaction by highlighting the interrelated roles of knowledge, self-efficacy, trust, and technology acceptance. Our work integrates these factors within the framework of AI chatbot interaction, offering a comprehensive understanding of how they collectively influence technology adoption and user satisfaction.

This integrated approach not only advances our theoretical knowledge of consumer-technology relations but also provides practical insights for enhancing user interaction with emerging technologies. Furthermore, by differentiating between "Current Users" and "New Users," this study offers nuanced perspectives on the adoption and utilization of Chat GPT, highlighting the importance of user-centric strategies in technological design and implementation.

References

- ALHOGAIL A. (2018), "Improving IoT technology adoption through improving consumer trust", *Technologies*, vol. 6, n. 3, pp. 64.
- BANDURA A. (1977), "Self-efficacy: toward a unifying theory of behavioral change", *Psychological review*, vol. 84, n. 2, pp. 191.
- BANDURA A., ADAMS N.E. (1977b), "Analysis of self-efficacy theory of behavioral change", *Cognitive therapy and research*, vol. 1, n. 4, pp. 287-310.
- BANDURA A., SCHUNK D.H. (1981), "Cultivating competence, self-efficacy and intrinsic interest through proximal self-motivation", *Journal of Personality and Social Psychology*, vol. 41, pp. 586-598.
- BERKOWSKY R.W., SHARIT J., CZAJA S.J. (2017), "Factors predicting decisions about technology adoption among older adults", *Innovation in aging*, vol. 1, n. 3.
- CEGARRA-NAVARRO J., GARCÍA-PÉREZ A., MORENO-CEGARRA J. (2014), *Technology knowledge and governance: Empowering citizen engagement and participation*, vol. 31, pp. 660-668.
- COLLINS J. (2001), *Good to Great. Why some companies make the leap ... and others don't*. New York, NY: HarperCollins Publishers.
- COLVIN G. (2010), *Talent is overrated*. New York, NY: Penguin Group.
- COOMBS C. (2020), "Will COVID-19 be the tipping point for the intelligent automation of work? A review of the debate and implications for research", *International journal of information management*, vol. 55, 102182.
- DABHOLKAR P.A., and BAGOZZI R.P. (2002), "An attitudinal model of technology-based self-service: moderating effects of consumer traits and situational factors", *Journal of the Academy of Marketing Science*, vol. 30, n. 3, pp. 184-201.

- D'ANGELO J.K., VALSESIA F. (2022), "You should try these together: Combinatory recommendations signal expertise and improve product attitudes", *Journal of Marketing Research*, vol. 60, n.1, pp. 155-169.
- ELLEN P.S., BEARDEN W.O., and SHARMA S. (1991), "Resistance to technological innovations: an examination of the role of self-efficacy and performance satisfaction", *Journal of the Academy of Marketing Science*, vol. 19, n. 4, pp. 297-307.
- ERICSSON K.A., SIMON H.A. (1980), "Verbal reports as data", *Psychological review*, vol. 87, n. 3, pp. 215.
- ERICSSON K.A., SIMON H.A. (1998), "How to study thinking in everyday life: Contrasting think-aloud protocols with descriptions and explanations of thinking", *Mind, Culture, and Activity*, vol. 5, n. 3, pp. 178-186.
- FALCONE R., SAPIENZA A. (2018), "On the users' acceptance of IoT systems: A theoretical approach", *Information*, vol. 9, n. 3, pp. 53.
- HATLEVIK O.E., THRONDSSEN I., LOI M., GUDMUNDSDOTTIR G.B. (2018), "Students' ICT self-efficacy and computer and information literacy: Determinants and relationships", *Computers & Education*, vol. 118, pp. 107-119.
- HOLDEN H., RADA R. (2011), "Understanding the influence of perceived usability and technology self-efficacy on teachers' technology acceptance", *Journal of research on technology in education*, vol. 43, n. 4, pp. 343-367.
- KELLY S., KAYE S.A., OVIEDO-TRESPALACIOS O. (2023), "What factors contribute to the acceptance of artificial intelligence? A systematic review", *Telematics and Informatics*, vol. 77, 101925.
- KELLY S., NOONAN C. (2008), "Anxiety and psychological security in offshoring relationships: the role and development of trust as emotional commitment", *Journal of Information Technology*, vol. 23, pp. 232-248.
- KLASSEN R.M., USHER E.L. (2010), "Self-efficacy in educational settings: Recent research and emerging directions", In Urdan T.C., Karabenick S.A. (Eds.), *The Decade Ahead: Theoretical Perspectives on Motivation and Achievement* (pp. 1-33), Emerald Group Publishing
- KODDEN B., KODDEN B. (2020), "The impact of self-efficacy", *The Art of Sustainable Performance: A Model for Recruiting, Selection, and Professional Development*, pp. 31-38.
- KODDEN S. (2014), *Be a HERO. How To Bring Out Leadership in Everyone*. Bernard Daniel Press
- MARAKAS G.M., Yi M.Y., JOHNSON R.D. (1998), "The multilevel and multifaceted character of computer self-efficacy: Toward clarification of the construct and an integrative framework for research", *Information systems research*, vol. 9, n. 2, pp. 126-163.
- MAHARDIKA H., THOMAS D., EWING M.T., JAPUTRA A. (2019), "Experience and facilitating conditions as impediments to consumers' new technology adoption", *The International Review of Retail, Distribution and Consumer Research*, vol. 29, n. 1, pp. 79-98.
- MARIANI M.M., PEREZ-VEGA R., WIRTZ J. (2022), AI in marketing, consumer research and psychology: A systematic literature review and research agenda", *Psychology & Marketing*, vol. 39, n. 4, pp. 755-776.
- NEWELL A., SIMON H.A. (1972), "Human problem solving (Vol. 104, No. 9)", Englewood Cliffs, NJ: Prentice-hall.
- NOE R.A., WILK S.L. (1993), "Investigation of the factors that influence employees' participation in development activities", *Journal of Applied Psychology*, vol. 78, n. 2, pp. 291-302.
- NYBERG K., KOERBER S., OSTERHAUS C. (2022), "Does Task-specific Self-efficacy Predict Science Competencies?", *Journal of Education and Training Studies*. <https://doi.org/10.11114/jets.v10i4.5585>.
- PAN X. (2020), "Technology acceptance, technological self-efficacy, and attitude toward technology-based self-directed learning: learning motivation as a mediator", *Frontiers in Psychology*, vol. 11, 564294.
- PAJARES F. (1996), "Self-efficacy beliefs in academic settings", *Review of Educational Research*, vol. 66, pp. 543-578
- PAJARES F., VALIANTE G. (1997), "Influence of Self-Efficacy on Elementary Students' Writing", *The Journal of Educational Research*, vol. 90, pp. 353-360.
- PUNTONI S., WALKER RECZEK R., GIESLER M., BOTTI S. (2020), "Consumers and Artificial Intelligence: An Experiential Perspective", *Journal of Marketing*, vol. 85, n. 1.
- ROY S.K., SINGH G., HOPE M., NGUYEN B., HARRIGAN P. (2022), "The rise of smart consumers: role of smart servicescape and smart consumer experience co-creation", In *The Role of Smart Technologies in Decision Making* (pp. 114-147), "Routledge.
- SCHUNK D.H. (1995), "Self-efficacy and education and instruction", In Maddux J.E. (Ed.), *Self efficacy, adaptation, and adjustment: Theory, research, and application* (pp. 281-303), Plenum Press.
- SMAGORINSKY P. (1998), "Thinking and speech and protocol analysis", *Mind, culture, and activity*, vol. 5, n. 3, pp. 157-177.
- TAMS S., THATCHER J., CRAIG K. (2017), "How and why trust matters in post-adoptive usage: The mediating roles of internal and external self-efficacy", *J. Strateg. Inf. Syst.*, vol. 27, pp. 170-190.
- TANNENBAUM S.I., MATHIEU J.E., SALAS E., CANNON-BOWERS J.A. (1991), "Meeting trainees' expectations: the influence of training fulfillment on the development of commitment, self-efficacy, and motivation", *Journal of Applied Psychology*, vol. 76, n. 6, pp. 759-769.
- TUU H., KHÔI N., OLSEN S. (2021), "How consumer innovativeness, technological expertise, and consideration set size can explain mobile commerce use: An extended understanding using a moderation-mediation model", *Information Systems and e-Business Management*, vol. 19, pp. 1015 - 1038.
- VAN ESCH P., CUI Y., JAIN S.P. (2021), "Self-efficacy and callousness in consumer judgments of AI-enabled checkouts", *Psychology & Marketing*, vol. 38, n. 7, pp. 1081-1100.
- YANG K. (2010), "The effects of technology self-efficacy and innovativeness on consumer mobile data service adoption between American and Korean consumers", *Journal of International Consumer Marketing*, vol. 22, n. 2, pp. 117-127.
- YAN Z., ZHANG P., VASILAKOS A.V. (2014), "A survey on trust management for Internet of Things", *Journal of network and computer applications*, vol. 42, pp. 120-134.
- ZHANG X., HAN X., DANG Y., MENG F., GUO X., LIN J. (2017), "User acceptance of mobile health services from users' perspectives: The role of self-efficacy and response-efficacy in technology acceptance", *Informatics for Health and Social Care*, vol. 42, n. 2, pp. 194-206.

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Investigating Perceptions of Brand Personality and Consumer Reactions in the Automotive Industry by ChatGPT

ALESSANDRO SIGNORINI¹ ALESSANDRO FERI² ANGELO BACCELLONI³ ELISA PUVIA⁴

Abstract

This research explores brand personality perceptions in relationship with the generative AI platform ChatGPT. The initial phase of the research is to confirm whether ChatGPT manifests distinct brand perceptions and to comprehend how the brand perceptions are shaped. Once ChatGPT is shown to form brand perceptions, these perceptions are presented to consumers in the form of brand statements. The second phase of the research is to analyze the effects on consumers when informed that these statements are generated by ChatGPT compared to traditional search engines. This research is developed within the context of the automotive industry, with a specific focus on fourteen automotive brands listed in Interbrand's 100 Best Global Brands of 2022. Brand perceptions generated by ChatGPT are investigated employing a semi-structured approach, where direct queries are posed to ChatGPT to gain insights into its processing of brand perceptions. To analyze and evaluate ChatGPT responses, Aaker's (1997) well-established framework of brand personality, encompassing five dimensions, is applied. The effects on consumers are examined using an experimental design with participants divided into two groups. Both groups are presented with identical brand statements from three automotive brands. The only difference is that participants will be told that the statements are derived from ChatGPT or a traditional search engine. The study will conclude with in-depth interviews to the participants. The study's significance lies in understanding how ChatGPT interprets and presents brand perceptions, considering the potential influence this AI platform may have on shaping consumer attitudes, particularly while it evolves into a search engine. As consumers increasingly rely on ChatGPT for product evaluations and post-purchase interactions with brands, the platform offers valuable insights into brand personality when prompted, facilitating the rating of different brand personality dimensions.

Key words: Artificial Intelligence 1, ChatGPT 2, Brand Personality 3, Brand Comparison 4, Automotive Industry 5.

Framing of the research. ChatGPT is an Artificial Intelligence (AI) platform developed by OpenAI and introduced to the public in November 2022 (Pavlik, 2023). ChatGPT has attracted significant attention due to its utilization of natural language processing and machine learning techniques to enable interactive conversational capabilities (King, 2023). In academic literature, ChatGPT has been defined as “a large language model developed by OpenAI that uses deep learning techniques to generate human-like responses to text-based prompts. It is trained on a large corpus of text data using unsupervised learning techniques to learn the statistical patterns and regularities of human language and use that knowledge to generate coherent and contextually appropriate responses” (Paul et al., 2023: 1213). Through the analysis of available information and the utilization of learning mechanisms, ChatGPT generates text-based responses to user inquiries. Its rapid adoption has been remarkable, with over one million users registering on the platform within five days of its launch, surpassing the growth rates of successful platforms like Instagram, Facebook, and TikTok (Bailey, 2023).

The advent of ChatGPT has had a profound impact on the financial landscape, particularly in the domain of artificial intelligence investments. Shares associated with AI ventures experienced a substantial surge in value, driven by ChatGPT's demonstrable potential in language processing applications (Hajric and Shen, 2023). Well-known economists have even posited that ChatGPT may be the most disruptive technology of the decade, similar to a “calculator in writing” in the words of Brynjolfsson (Aldrick, 2023). While acknowledging certain characteristics of a transient investing fad in ChatGPT, Morgan Stanley recognizes that technology holds the potential to revolutionize text-writing and information-gathering (Ponciano, 2023).

In the domain of information retrieval, ChatGPT is widely regarded as more advanced than Google search engine (Paul et al., 2023). While Google inundates consumers with extensive information that requires manual filtering, ChatGPT stands out by generating tailored and coherent responses that align with users' queries. As ChatGPT

¹ John Cabot University, Rome
e-mail: asignorini@johncabot.edu

² John Cabot University, Rome
e-mail: alessandro.feri@johncabot.edu

³ John Cabot University, Rome
e-mail: angelo.baccelloni@johncabot.edu

⁴ John Cabot University, Rome
e-mail: elisa.puvia@johncabot.edu

continuously self-improves and integrates real-time data, there exists a tangible possibility that it could eventually surpass Google in terms of information retrieval (Paul et al., 2023). As ChatGPT progresses towards its integration into a search engine, research suggests that consumers will increasingly rely on this platform during their decision-making process and include it in their consumer journey (Dwivedi et al., 2023). Unlike other search engines, ChatGPT can answer customer inquiries directly rather than providing a list of results. It may therefore offer a unique opportunity for marketers to influence consumers at various stages of their purchasing experience. Notably, information search is crucial in the consumer decision-making process as consumers try to decrease the perceived risk associated with a purchase by gathering brand-related information from online and offline sources (Basso et al., 2019; Hansen, 2005; Puccinelli et al., 2009). As ChatGPT can be used as a research-gathering tool, marketers can incorporate the AI interface into relevant touchpoints to enhance AI-based customer conversations and influence customers' decisions with highly relevant content. Dwivedi et al. (2023) highlight numerous potential applications of ChatGPT in marketing, including the development of targeted marketing campaigns, the optimization of content marketing and chatbot-based customer service, the enrichment of the customer experience, keyword generation and recommendations, the conduct of marketing research, and brand comparison analyses (Dwivedi et al., 2023).

The potential of ChatGPT appears promising in the marketing field, although marketers face specific challenges. While ChatGPT offers a valuable tool for content curation, similar to Google's functionality, its use of robust database models and AI-driven learning algorithms suggests that traditional approaches, such as keyword-based content or search engine marketing, may not deliver the desired results within the ChatGPT structure. Consequently, successful marketing strategies necessitate a well-defined collaboration between marketers and OpenAI to effectively navigate the complexities of advanced AI algorithms (Dwivedi et al., 2023). Managing the alignment, or potential misalignment, between the intended and perceived brand personality becomes crucial for marketers, as any discrepancies can impact consumer perceptions and potentially originate reputational harm. According to Paul et al. (2023), ChatGPT can offer several advantages for consumers. Primarily, it can elevate consumer engagement by providing an interactive experience that surpasses traditional communication methods. Additionally, it can enhance customer service by delivering prompt responses and efficient issue resolution. Furthermore, ChatGPT can facilitate shopping personalization by generating tailored recommendations, marketing messages, and shopping tips based on consumer behavior and preferences (Konya-Baumbach et al., 2023). The platform can also foster social interaction and communication practices (Haluza and Jungwirth, 2023). In conclusion, ChatGPT can improve marketing campaigns by generating compelling messages that deeply resonate with consumers, leading to heightened engagement and conversion rates. ChatGPT, despite its numerous benefits for consumers, also shows several potential drawbacks that demand careful examination (Paul et al., 2023). Bias poses pressing concern since ChatGPT can reinforce biases inherent in its training data, resulting in unfair outcomes and cases of discrimination (Aker et al., 2021; Ray, 2023). Furthermore, the generation of misinformation by ChatGPT raises issues of trustworthiness, especially in contexts where accuracy and truthfulness are essential, such as in marketing claims and product information (Floridi, 2019). The model's limited contextual understanding may produce nonsensical or inappropriate responses, with potential risks for brand reputation. Addressing privacy issues is important given the collection and storage of consumer data, which necessitates robust data protection measures. Ethical considerations encompass the accountability of AI platforms, the presence of biases in internet-based data, and potential impacts on users' moral judgments (Breibach and Maglio, 2020). Lastly, ChatGPT's capabilities can be exploited for malicious purposes, such as generating phishing emails or deceptive content, highlighting the importance of responsible and ethical usage.

Purpose of the paper. Given the potential utility for both academic and non-academic pursuits, ChatGPT has become a "cultural phenomenon" (Thorp, 2023, p. 313). By utilizing ChatGPT's capabilities, this research seeks to offer valuable insights and implications for businesses to better understand and manage their brand personality perceptions, thus enhancing their brand strategies in the digital age. Adopting an original perspective, the aim of this study is to investigate whether ChatGPT exhibits human-like attitudes, namely brand-specific perceptions, and, if so, to explore the underlying mechanisms through which these perceptions are processed by consumers. By investigating the interplay between ChatGPT and brand perception, this research contributes to the growing literature on the impact of AI platforms on consumer behavior and related brand management practices (Dwivedi et al., 2023; Gursoy et al., 2023; Konya-Baumbach et al., 2023; Mich and Garigliano, 2023; Paul et al., 2023).

The present paper aims to fill a significant research gap by examining the impact of the AI platform ChatGPT on branding strategies, an area that has been largely overlooked in both academic and non-academic literature. To the best of our knowledge, no previous studies have examined whether ChatGPT possesses distinct and independent perceptions of established brands, along with the mechanisms it uses to process these perceptions. As emphasized by Paul et al. (2023: 1219), "researchers could examine the extent to which ChatGPT-generated responses influence consumer behaviour, such as purchase decisions, product evaluations or brand perceptions". Similarly, Dwivedi et al. (2023: 16) state that "studies should explore how generative AI technologies can benefit marketing in customer services, customer engagement and experience, content curation and development, marketing research, lead generation, commerce, and promotional activities". By delving into the process of brand perception by ChatGPT, this study takes a first crucial step toward understanding how the platform demonstrates human-like attitudes, specifically focusing on brand-specific perceptions of brand personality.

In line with the study's objective, we examine the potential for ChatGPT to act as a medium for brand values, embodying the characteristics that define automotive brands and thus shaping the way consumers may relate to them (Manis and Madhavaram, 2023). Through this lens, the research not only contributes to theoretical advancements by

highlighting the intersections of AI and brand personality but also offers actionable insights for marketers aiming to integrate AI into their strategic toolkit (Chintalapati and Pandey, 2022). To examine the potential brand perceptions of ChatGPT, the well-established framework of brand personality dimensions proposed by Aaker (1997) is adopted. Brand personality is defined as “the set of human characteristics associated with a brand” (Aaker, 1997: 347). This framework allows the identification of distinct typologies of brand personalities and assigns a quantifiable scale to each dimension, enabling a comprehensive understanding of brand perception. By incorporating a scaling system, the framework provides a structured method for theoretical generalization regarding the symbolic utilization of brands (Aaker, 1997; Freling et al., 2011; George and Anandkumar, 2018; Radler, 2018; Saeed et al., 2022). Moreover, the framework and its associated scales can be readily extended to various product categories, ensuring its versatility and applicability.

Aaker's framework comprises five dimensions that exhibit high representativeness, reliability, and variance in the evaluation of brand personality: sincerity, excitement, competence, sophistication, and ruggedness. The dimension of sincerity reflects attributes such as honest, down-to-earth, and wholesome, which are essential for establishing a positive brand image. Excitement emphasizes characteristics such as daring, spirited, and imaginative, which contribute to a brand's capacity to evoke enthusiasm and engagement among consumers. Competence pertains to qualities associated with reliability, intelligence, and success, signaling a brand's capability to deliver superior performance and meet customer expectations. Sophistication embodies traits of elegance, upper class, and charm, conveying brand's aspirational and premium qualities. In conclusion, ruggedness represents attributes of toughness, durability, and resilience, which portray a brand as robust and suitable for challenging environments (Aaker, 1997).

By employing Aaker's (1997) framework, ChatGPT's perception of brand personality can be comprehensively explored in the automotive industry. This framework facilitates an analysis of the extent to which ChatGPT aligns with or deviates from the identified dimensions and their associated scales, thus providing valuable insights into the brand perceptions that may emerge. Moreover, through an examination of the alignment between the framework's dimensions and human personality dimensions, as identified by Briggs (1992), this research aims to gain a profound understanding of how ChatGPT's brand personality can embody and align with specific brand attributes. Three brand personality dimensions align with three dimensions of the “Big Five” human personality traits proposed by Briggs (1992). Agreeableness and sincerity both reflect warmth and acceptance, while extroversion and excitement indicate sociability, energy, and activity. Conscientiousness and competence embody responsibility, dependability, and security. Conversely, the dimensions of sophistication and ruggedness deviate from any of the “Big Five” traits identified by Briggs (1992). This pattern suggests that brand personality dimensions may operate differently or influence consumer preference for distinct reasons. Notably, dimensions like sincerity, excitement, and competence tap into innate aspects of human personality, while sophistication and ruggedness align with traits that individuals aspire to but may not necessarily possess. These insights stress the complexity of brand personality and indicate that different dimensions may play diverse roles in shaping consumer perception and preference. In recent years, scholars in the domain of social psychology have extensively examined how people form impressions about brands. Kervyn et al. (2012) posited that consumers establish relationships with brands similarly to those with individuals. In their theorization, they adapted the Stereotype Content Model (SCM) (Fiske et al., 2002), which is one of the most influential theoretical frameworks in the field of social cognition. According to the model, individuals perceive social groups by focusing on two fundamental dimensions: warmth and competence. Individuals rapidly assess warmth, which refers to the perceived intentions of others, and competence, which pertains to the ability of others to carry out those intentions. Warmth includes traits such as helpfulness, sincerity, friendliness, and trustworthiness, while competence encompasses efficiency, intelligence, conscientiousness, and skill. Kervyn et al. (2012) proposed that the model governing social perception can be adapted and extended to brand perception. Therefore, they developed the Brands as Intentional Agents Framework (BIAF) by modifying the Stereotype Content Model to suit the brand perception context.

Aaker's scale shows similarities with the Stereotype Content Model, particularly in the alignment of the competence factor with competence dimensions and the sincerity factor with the warmth dimension. The ruggedness factor combines low warmth and high competence, a combination that has been associated with stereotypical masculinity (Eagly and Steffen, 1984). The BIAF suggests that brands vary in their perceived intentions and ability to fulfill those intentions. Existing evidence suggests that personality scales akin to Aaker's are well-suited for detailed descriptions of individual brands with a focus on their attributes. Conversely, social perception models, such as the BIAF, offer researchers the possibility of assessing the perception of multiple social objects, facilitating a comprehensive comparative analysis of these objects within a broader landscape. By employing Aaker's (1997) framework, ChatGPT's perception of brand personality can be comprehensively explored in the automotive industry. This framework facilitates an analysis of the extent to which ChatGPT aligns with or deviates from the identified dimensions and their associated scales, thus providing valuable insights into the brand perceptions that may emerge. To achieve this, the methodology incorporates various techniques to uncover the brand personality attributes and explore their implications for effective brand strategies in the digital age.

Methodology. The present study has two separate research objectives. The first objective is to evaluate ChatGPT's perceptions of brand personalities in one specific industry. In detail, it is evaluated if ChatGPT holds well-defined brand perceptions within the automotive industry and how the brand perceptions are formed. Having demonstrated that ChatGPT exhibits brand perceptions, the second objective of the research is to test the perceptions on consumers in

comparison with traditional search engines, in this case, Google search engine. At the current stage of the research, the first part of the research has been completed, while the second part is yet to be conducted.

The selection of the automotive industry is mainly driven by the significant academic interest in branding within this industry. Relevant studies have explored different aspects of branding in the automotive field, for example, research explored brand antecedents in the search for uniqueness (Nikhashemi and Delgado-Ballester, 2022), value and pricing in the consumer brand relationship (Hamzah and Pontes, 2022), brand personality in emerging markets (Ha and Janda, 2014), and the impact of brand reputation and brand personality congruence on brand loyalty (Kuenzel and Halliday, 2010). In addition, the automotive industry invests significant financial resources in brand strategies (Reportlinker, 2022) that are essential to gain a competitive edge in a global oligopolistic market (Carr, 2022). Consumer choice in the automotive industry is also complex and time-consuming because of the high value of the transaction compared to the average annual budget (Heath and Soll, 1996) and the association with high social status (Hannan, 2015). Consumers engage in relevant and complex searches for information when choosing a car and tend to rely upon search engines (Yoo, 2014), and, in the future, may rely on AI-generative search engines, such as ChatGPT.

Specific brands in the automotive industry were selected according to their inclusion in the 100 Best Global Brands 2022 proposed by Interbrand (2022). Interbrand employs a method that evaluates financial performance, brand influence, and consumer loyalty to discern and rank the 100 most valuable brands worldwide (Interbrand, 2023). The list of brands is chosen because it encompasses both luxury and budget brands, as well as brands from a variety of geographic locations offering a comprehensive and diversified representation. A purposive sampling technique was employed to select the sample from the Interbrand list. This sampling approach was regarded as most suitable for the research topic, as it focuses on brand personality impressions in the automobile sector. Fourteen brands from the car industry were extracted from the list. Through purposeful sampling, automobile brands with a high brand presence in the global market were included in this study. The sample size follows the principle of data saturation, "saturation will occur when few or new data are being generated" (Murray, 2010: 16). The sample size was expanded until data saturation was reached (fourteen car brands), ensuring that no new data were being generated (Fusch and Ness, 2015; Langley, 2004; Trotter, 2012).

The research aims to address the following research questions:

RQ1. How does ChatGPT perceive brand personality in the automotive industry?

RQ2. How does ChatGPT categorize existing automotive brands according to Aaker's (1997) framework?

RQ3. How does ChatGPT rate existing automotive brands according to Aaker's (1997) framework?

RQ4: Do consumers perceive brand statements differently when they originate from ChatGPT compared to traditional search engines in the context of automotive brands?

RQ5: How do consumers' perceptions of automotive brands differ when they are exposed to brand statements generated by ChatGPT compared to those from traditional search engines?

The first objective of the research, namely, assessing ChatGPT perceptions of brand personalities in the automotive industry, with the associated three research questions RQ1, RQ2, and RQ3, was achieved through a qualitative method. Indeed, this research employed a semi-structured interview approach, engaging in direct textual inquiries to understand ChatGPT's perceptions of brand personality in the automotive industry. The interviews were conducted remotely on the chatbot platform with all responses carefully recorded and analyzed. The adoption of semi-structured interviews allows for a comprehensive understanding of ChatGPT's perceptions, while also offering adaptability and flexibility during the inquiry process (Kallio et al., 2016). To develop the interview questions, a thematic analysis of the existing literature on brand personality was performed (Thomas and Harden, 2008). The interviews were organized into three parts, each aligned with one of the research questions. The first part sought to grasp ChatGPT's perceptions of brand personality in the automotive industry. The second part focused on how ChatGPT categorizes existing automotive brands according to Aaker's (1997) framework. Lastly, the third part aimed to comprehend how ChatGPT rates existing automotive brands as outlined in the framework.

Thematic analysis, a qualitative research approach facilitating pattern and theme identification within datasets, was employed to extract themes relevant to RQ1 and RQ2 from the collected data. Braun and Clarke's (2006) six-step method of thematic analysis guided this process, involving familiarizing oneself with the data, creating initial codes, identifying themes, evaluating themes, defining and labeling themes, and preparing a report. Thematic analysis is widely recognized in qualitative research (Braun and Clarke, 2006; Levac et al., 2010; Malterud et al., 2016). To address RQ3, ChatGPT was asked to score the brand personalities of the selected brands on a numeric scale for each dimension, following Aaker's (1997) framework. Subsequently, the scores assigned by ChatGPT for each dimension were collated and examined using descriptive statistics to generate a comprehensive data summary.

The second objective of the research, that is, testing the perceptions on consumers in comparison with traditional search engines, with the associated two research questions RQ4 and RQ5, was achieved through a quantitative method. Indeed, consumers will be tested in an experimental design setting. A convenience sample of 90 participants will be selected from students at undergraduate and graduate levels. Undergraduate students primarily be from Business, International Business, and Marketing Majors, while the graduate students will come from MBA and Masters in various business disciplines. Participants will be randomly assigned to two groups. Three separate car brands will be selected, one representing luxurious sporty positioning, one premium positioning, and one reliable and affordable positioning. Three diverse brand positioning are chosen to mitigate potential biases that specific typologies of brands may generate in the consumer's mind (Ariel et al., 2022). For example, consumers can perceive that luxurious brands should employ different brand touchpoints compared to affordable ones. Both groups will be presented to a series of brand statements

from these brands, but the first group will be informed that the brand statements originate from ChatGPT, while the second group will be told that the statements are from Google search engine. After one month, the groups will be reversed, the brand statements will be changed, with the first group now informed that the brand statements come from Google search and the second group from ChatGPT. The statements are changed to prevent confounding effects due to familiarity with the previous exposure (Ariel et al., 2002). After the experiment, participants will undergo in-depth interviews to explore and examine meaningful emerging themes (Denzin & Lincoln, 2005; Iphofen & Tolich, 2018; Toomer et al., 1993; Tracy, 2010).

Results. This section provides a summary of the research findings from the initial phase, while awaiting the results of the second phase.

The first phase of the research revealed valuable insights into how ChatGPT perceives and categorizes automotive brands, shedding light on its evaluation of brand personalities for the selected brands. Additionally, descriptive statistics were employed to analyze ChatGPT's ratings for each dimension within Aaker's framework, providing a comprehensive data summary. The findings contribute to the understanding of brand perception and AI-generated insights in the automotive industry, presenting relevant implications for brand strategies in this competitive market landscape.

Figure 1: ChatGPT's Scoring of Automotive Brands Based on Aaker's Dimensions

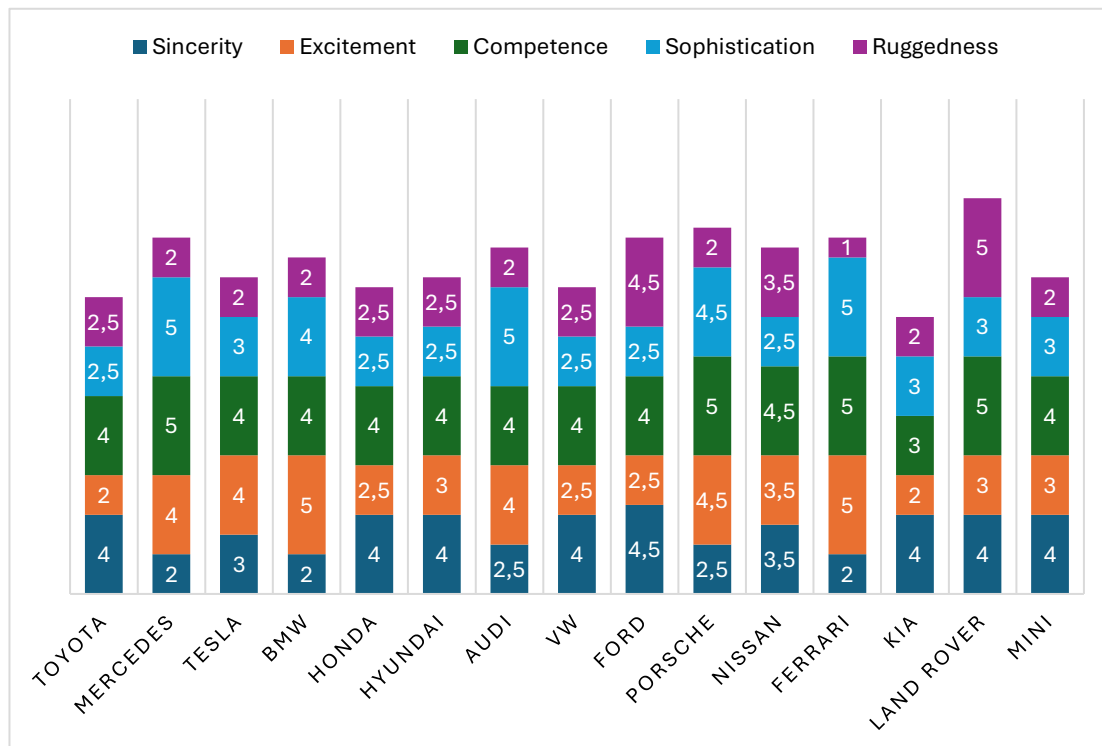


Figure 1 presents a comprehensive summary of the brand personality scores assigned by ChatGPT to fourteen automotive brands, utilizing Aaker's (1997) framework. The results of this study demonstrate clear distinctions among brands according to their distinct degrees of premium positioning and prestige. Luxurious and stylish brands (e.g., Mercedes, BMW, Porsche, Ferrari) are clearly distinguished from the reliable and affordable ones (e.g., Toyota, Honda, Nissan, Ford, Hyundai). Mercedes, BMW, and Audi are designated as exclusive and with sophisticated personality, which confirms the perception that these brands provide superior value propositions. These brands are awarded to this group based on their design and enduring commitment to technology. Yet, Mercedes stands alone in being luxurious, while BMW and Audi uphold a premium perception, but their defining feature revolves around high performance. In a separate premium positioning, Tesla and Land Rover are deemed as exclusive because of entirely different attributes, Tesla prioritizes innovation and environmental sustainability, while Land Rover emphasizes a longstanding tradition of premium SUVs tailored for rugged and adventurous terrains. Iconic sports cars such as Ferrari and Porsche constitute a distinct category as they are linked to a distinct level of social status, with Ferrari being the only brand connected with prestige. Despite Ferrari's notable involvement in Formula 1 and other racing categories, it is not tied to racing heritage, as is in the case of Porsche.

The remaining brands are categorized by ChatGPT as reliable and practical, displaying different levels of brand value attributes. Toyota is the only brand that embodies quality in its branding, similar to more prestigious brands, while Nissan distinguishes itself with stylish design. However, innovation is observed across several car brands despite diverse initiatives in new engine technologies. As an illustration, Toyota has been a pioneer in full hybrid engine technology with its Toyota Prius model. Currently, most Toyota cars feature advanced full hybrid engines, and the brand is making significant strides in hydrogen engine technology. In addition, Nissan introduced its Leaf model early on as a full-electric

product. Nevertheless, Nissan and Toyota are grouped with Ford, which has lagged behind in adopting new engines for its car models. While numerous car brands provide a variety of price ranges for their models, excluding premium brands, only Hyundai, Kia, and Ford are generally perceived as affordable. The term affordability likely refers to value-for-money models, where vehicles come equipped with numerous accessories and additional services and are offered at low or medium prices. Despite providing detailed personality traits for various car brands, ChatGPT showed a notable gap as it did not highlight the primary market segments of these brands. The platform acknowledged that certain brands, such as Ford, were tailored for "everyday use," but it did not focus on the distinct market niches or segments that each brand primarily targets. All the brands classified as reliable, practical, and innovative had no reference to their specific market segments, such as families, commuters, or professionals, for whom these brands design their vehicles. The primary consumers were not explicitly addressed by ChatGPT. This exclusion raises a critical aspect of brand positioning and marketing strategy.

Research limitations. Our study presents several limitations that future research should aim to address. One significant limitation is the methodology applied for the first objective of the research - textual semi-structured interviews coupled with thematic analysis - which was originally designed with human respondents in mind. This approach may not be fully appropriate for analyzing text generated by AI, as it may overlook nuances specific to AI-generated discourse. Therefore, there is a need for methodologies tailored specifically to AI-generated text analysis. Another point to consider is the recent launch of GPT-4, which boasts 500 times more parameters than its predecessor, suggesting potential shifts in AI capabilities that were not accounted for in this study. Additionally, conducting interviews at a single point in time does not account for the AI's evolving learning mechanisms. To gain a deeper understanding of AI-mediated brand evaluation, it would be beneficial to perform analyses at multiple intervals in a longitudinal study. To build on this research, future studies could apply our methodology to GPT-4 to assess any changes in brand personality evaluations within the automotive industry. Finally, future research should consider the perceived intentionality behind ChatGPT's responses, evaluating how the AI addresses commonplace brand-related questions across various industries and regions. This would help clarify the impact of AI on the consumer-brand dynamic and on brand personality as perceived through AI interactions.

Further research should expand the research on consumers and their interaction with ChatGPT. Researchers could explore how consumers connect with the AI platform for branding purposes and understand the most frequent inquiries that they pose. Then, investigating whether consumers use the AI platform during the decision-making process or for post-purchase inquiries and services will contribute to understanding ChatGPT's role in consumer-brand interactions. Future studies can also examine the perceived intentionality of ChatGPT in the context of the human-object relationship by exploring how ChatGPT responds to users' trivial queries about brands in different industries and geographical locations.

Managerial implications. The findings presented in the dataset contribute to the limited academic literature on the newly introduced AI platform and develop valuable insights that brands should consider when managing their online brand personality (Dwivedi et al., 2023; Paul et al., 2023; Teubner et al., 2023; Tsigaris & Teixeira da Silva, 2023). For instance, important themes related to brand personality are completely or partially absent from ChatGPT's outcomes. Themes such as environmentally sustainable strategies, proprietary connections, and extended luxury brands, are not fully considered by the AI platform in its evaluation. Of particular significance is sustainability given the future introduction of new typologies of engines in the market and more restrictive governmental regulations for automotive production. Also, interconnections between umbrella brands and brand extensions are not adequately included in ChatGPT's brand evaluations despite the significant investments in brand development and equity.

Furthermore, this investigation reveals substantial similarities between heterogeneous brands, and, even if the scale width is limited, shows potential cases of misalignment between the conveyed and real brand personalities. In addition, ChatGPT has the potential to enhance the brand's personality by providing a personalized and consistent communication experience that reflects the desired traits. Companies should be nonetheless careful to ensure that the platform optimizes the overall customer experience creating no frustration or confusion, and that the conveyed traits are aligned with those of the brand. Recognizing ChatGPT's potential of showing human-like attitudes, such as perceiving and categorizing brands, has significant theoretical and practical implications because it profoundly influences the possible development of the relationship between humans and this AI platform. For instance, this understanding can lead to more effective human-AI conversations by taking into consideration the specific attributes of the individuals involved. Tailoring messages to comply with the psycho-social profile of the recipient (Carfora et al., 2020) can result in a more human-like performance (Kumar et al., 2022). In addition, understanding the mechanisms by which these perceptions are processed can advance theory and practices in consumer psychology and brand management.

Another important factor to consider is the integration of ChatGPT with other touchpoints. ChatGPT can improve the brand's personality by providing a consistent message across different touchpoints. By using ChatGPT in various channels, such as social media, email, and chatbots, brands can establish a cohesive brand voice and tone that reflects the desired personality traits. Consistency in brand communication can improve brand recognition and reinforce the brand's identity in the consumers' minds (Veloutsou, 2023). If the brand communicates its personality through different media, ChatGPT should be an integral part of the strategy and reflect the personality consistently. If ChatGPT is poorly designed or implemented, it can undermine brand perceptions rather than bolster them. ChatGPT's brand perception can also impact the reputation of the brands employing the model for customer interactions. A positive perception of the brand by ChatGPT can improve the brand equity, conversely, negative or misaligned perceptions can jeopardize long-term brand management efforts. As a result, practitioners in the automotive industry should integrate ChatGPT with other

touchpoints to ensure consistency in brand communication and establish a cohesive brand voice and tone that aligns with the desired personality traits.

Moreover, companies should pay attention to the data sources where ChatGPT gathers information on brand personality and should manage them consistently. An inherent risk associated with ChatGPT and its sources is the dissemination of misinformation (Dwivedi et al., 2023; Huh et al., 2023; Paul et al., 2023; Ray, 2023; Teubner et al., 2023). If the data source is inaccurate or misleading, ChatGPT can generate content that perpetuates false information and distorted perceptions. This circumstance can be particularly problematic when the generated text is shared on social media or other media platforms. If ChatGPT conveys a brand personality that is not aligned with the real one, brands can be portrayed through inaccurate and misleading information and consumers can receive responses that diverge from the intentions and communication efforts of the brand managers. As a consequence, brand strategies that include ChatGPT as a relevant touchpoint reduce the probability of misrepresentation by the AI platform.

According to Lemon and Verhoef (2016), touchpoints encompass all the points of contact between a customer and a company, including physical, human, and technological interactions. ChatGPT serves as a technological touchpoint because it offers customers a digital method of interacting with a company. As a touchpoint, ChatGPT has the potential to enhance the customer experience by providing a convenient and efficient means of communication. Customers can use ChatGPT to ask questions, report issues, or receive personalized recommendations without the need for physical visits or human intermediaries. The efficacy of ChatGPT as a touchpoint however depends on ChatGPT's perceptions of the brand. If ChatGPT fails to convey the brand personality accurately, it can create frustration for customers, and jeopardize both the overall customer experience and the brand equity. As a result, practitioners within the automotive industry should ensure ChatGPT's alignment with the real brand personality because inaccurate information can undermine the brand strategy. ChatGPT can enhance the customer experience as a technological touchpoint, however, its efficacy depends on its perception of the brand. In summary, this study elucidates ChatGPT's adeptness at appraising and differentiating brand personalities within the automotive industry, substantiating its analytical prowess against Aaker's established framework. As the automotive industry evolves, this research points to future directions that include adopting AI to convey and reinforce brand personality and exploring consumer interactions with AI platforms like ChatGPT, to fully leverage their potential in shaping and reinforcing brand perceptions in the digital age.

Originality of the paper. The research explores ChatGPT's ability to perceive brand-specific perceptions in the automotive industry. The findings of the research confirm its capability to discern brand personality, categorize brands according to Aaker's framework, and assign corresponding scores to indicators. This makes a significant contribution to the AI-driven branding literature and addresses a gap in understanding the platform's role in brand management. This study offers valuable insights to practitioners in branding strategies. ChatGPT's has the potential to anthropomorphize due to its human-like conversational abilities, impacting brand perceptions. It advocates for aligning ChatGPT's communication with desired brand personalities and maintaining consistency across various touchpoints, such as social media and email, to enhance brand recognition. It underscores the integration of ChatGPT with other touchpoints for a cohesive brand voice to highlight the impact on brand perceptions and equity. Despite ChatGPT's potential to improve customer experience, the study warns against the risk of misinformation from inaccurate data sources, emphasizing the need for consistent data management to prevent misrepresentation. In particular, the findings offer suggestions to the practitioners in the automotive industry, who should constantly monitor the platform and strive to include environmentally sustainable strategies and brand interconnections in ChatGPT's evaluations, which are essential for the evolving automotive landscape. Acknowledging methodological limitations, the study proposes refining analysis methodologies for AI-generated text. It anticipates improvements with ChatGPT4 and calls for future research to examine brand evaluations with the new version, employing a longitudinal approach to understand evolving responses.

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References

- AAKER J.L. (1997), *Dimensions of Brand Personality*. Source: *Journal of Marketing Research*. Available at: <http://www.jstor.org/URL:http://www.jstor.org/stable/3151897>.
- AKTER S., MCCARTHY G., SAJIB S., ET AL. (2021), "Algorithmic bias in data-driven innovation in the age of AI", *International journal of information management* 60. article. Kidlington: Elsevier Ltd: 102387.
- ALDRICK P. (2023), "ChatGPT Will Be the Calculator for Writing, Top Economist Says. *Bloomberg.com*.
- ARIEL B., BLAND M.P. ET AL. (2005), *Experimental Design, The SAGE Quantitative Research KIT*. Sage Publications.
- BAILEY R. (2023), "A.I. Is Here", *Reason*, vol. 54, n. 11.

- BALAKRISHNAN J., ABED S., JONES P. (2022), "The role of meta-UTAUT factors, perceived anthropomorphism, perceived intelligence, and social self-efficacy in chatbot-based services?", *Technological Forecasting and Social Change*, vol. 180, pp. 121692.
- BASSO K., DUSCHITZ C. DA C., GIACOMAZZI C.M., ET AL. (2019), "Purchase decision and purchase delay of hedonic and utilitarian products in the face of time pressure and multiplicity of options", *Revista de Gestão*, vol. 26, n. 2, pp. 112-125.
- BRAUN V., CLARKE V. (2006), "Using thematic analysis in psychology", *Qualitative Research in Psychology*, vol. 3, n. 2, pp. 77-101.
- BREIDBACH C.F., MAGLIO P. (2020), "Accountable algorithms? The ethical implications of data-driven business models", *Journal of service management*, vol. 31, n. 2, article. Emerald Publishing Limited, pp. 163-185.
- BRIGGS S.R. (1992), "Assessing the Five-Factor Model of Personality Description", *Journal of Personality*, vol. 60, n. 2, pp. 253-293.
- CARFORA V., DI MASSIMO F., RASTELLI R., ET AL. (2020), "Dialogue management in conversational agents through psychology of persuasion and machine learning", *Multimedia Tools and Applications*, vol. 79, pp. 47-48, article. New York: Springer US: 35949-35971.
- CARR C. (2022), *Global Oligopoly: A Key Idea for Business and Society*. 1st ed. Routledge.
- CHINTALAPATI S., PANDEY S.K. (2022), "Artificial intelligence in marketing: A systematic literature review", *International Journal of Market Research*, vol. 64, n. 1, pp. 38-68.
- DENZIN N.K., LINCOLN Y.S. (2005), *The SAGE handbook of qualitative research*. Sage Publications.
- DWIVEDI Y., KSHETRI N., HUGHES L., ET AL. (2023), Multidisciplinary Perspectives on Opportunities, Challenges and Implications of Generative Conversational AI for Research, Practice and Policy.
- DWIVEDI Y.K., HUGHES L., ISMAGILOVA E., ET AL. (2021), "Artificial Intelligence (AI) Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy", *International Journal of Information Management*, vol. 57.
- DWIVEDI Y.K., KSHETRI N., HUGHES L., ET AL. (2023), "So what if ChatGPT wrote it?" Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy", *International journal of information management*, vol. 71, article. OXFORD: Elsevier: 102642.
- EAGLY A.H., STEFFEN V.J. (1984), "Gender stereotypes stem from the distribution of women and men into social roles", *Journal of Personality and Social Psychology*, vol. 46, n. 4, article. Washington, DC: American Psychological Association, pp. 735-754.
- FISKE S.T., CUDDY A.J.C., GLICK P., ET AL. (2002), "A model of (often mixed), stereotype content: Competence and warmth respectively follow from perceived status and competition", *Journal of Personality and Social Psychology*, vol. 82, n. 6, article. Washington, DC: American Psychological Association, pp. 878-902.
- FLORIDI L. (2019), "Establishing the rules for building trustworthy AI", *Nature machine intelligence* 1, n. 6, article. Basingstoke: Nature Publishing Group, pp. 261-262.
- FRELING T.H., CROSNO J.L., HENARD D.H. (2011), "Brand personality appeal: conceptualization and empirical validation", *Journal of the Academy of Marketing Science*, vol. 39, n. 3, pp. 392-406.
- FUSCH P.I., NESS L.R. (2015), "Are we there yet? Data saturation in qualitative research", *Qualitative Report*, vol. 20, n. 9, pp. 1408-1416.
- GEORGE J., ANANDKUMAR V. (2018), "Dimensions of Product Brand Personality", *Vision*, vol. 22, n. 4.
- GURSOY D., LI Y., SONG H. (2023), "ChatGPT and the hospitality and tourism industry: an overview of current trends and future research directions", *Journal of hospitality marketing & management*, vol. 32, n. 5, article. ABINGDON: Routledge, pp. 579-592.
- HA H.Y., JANDA S. (2014), "Brand personality and its outcomes in the Chinese automobile industry", *Asia Pacific Business Review*, vol. 20, n. 2, pp. 216-230.
- HAJRIC V., SHEN M. (2023), "Crypto Fans Pile Into 'Faddish' AI Tokens as ChatGPT Mania Grows. *Bloomberg.com*. Bloomberg, L.P.: N.PAG-N.PAG. Available at: <https://search.ebscohost.com/login.aspx?direct=true&db=buh&AN=161789399&site=ehost-live>.
- HALUZA D., JUNGWIRTH D. (2023), "Artificial Intelligence and Ten Societal Megatrends: An Exploratory Study Using GPT-3", *Systems*, vol. 11, n. 3, article. Basel: MDPI AG, pp. 120.
- HAMZAH M.I., PONTES N. (2022), "What drives car buyers to accept a rejuvenated brand? the mediating effects of value and pricing in a consumer-brand relationship", *Journal of Strategic Marketing*, pp. 1-23.
- HANNAN A. (2015), "Impact of Economic, Social and Environmental Variables on Competitiveness of Automotive Industry: Evidence from Panel Data", *International Journal of Economic Behavior and Organization*, vol. 3, n. 1, Science Publishing Group, pp. 10.
- HANSEN T. (2005), "Perspectives on consumer decision making: an integrated approach", *Journal of Consumer Behaviour*, vol. 4, n. 6, pp. 420-437.
- HEATH C., SOLL J.B. (1996), "Mental Budgeting and Consumer Decisions", *Journal of Consumer Research*, vol. 23, n. 1, pp. 40.
- HUH J., NELSON M.R., RUSSELL C.A. (2023), "ChatGPT, AI Advertising, and Advertising Research and Education", *Journal of advertising ahead-of-print(ahead-of-print)*, article. Routledge, pp. 1-6.
- INTERBRAND (2022), Best Global Brands 2022.
- INTERBRAND (2023), Best Global brands. Available at: <https://interbrand.com/best-global-brands/> (accessed 27 February 2023).
- IPHOFEN, R., TOLICH, M. (2018b), "The SAGE Handbook of Qualitative Research Ethics", In *The SAGE Handbook of Qualitative Research Ethics*. SAGE Publications Ltd.
- KALLIO H., PIETILÄ A-M., JOHNSON M., ET AL. (2016), "Systematic methodological review: developing a framework for a qualitative semi-structured interview guide", *Journal of Advanced Nursing*, vol. 72, n. 12, pp. 2954-2965.
- KERVYN N., FISKE S.T., MALONE C. (2012), "Brands as intentional agents framework: How perceived intentions and ability can map brand perception", *Journal of Consumer Psychology*, vol. 22, n. 2, article. United States: Elsevier Inc: 166-176.
- KING M.R. (2023), "A Conversation on Artificial Intelligence, Chatbots, and Plagiarism in Higher Education", *Cellular and Molecular Bioengineering*, vol. 16, n. 1, pp. 1-2.

- KONYA-BAUMBACH E., BILLER M., VON JANDA S. (2023), "Someone out there? A study on the social presence of anthropomorphized chatbots", *Computers in Human Behavior* 139. article. Elsevier Ltd: 107513.
- KUENZEL S., HALLIDAY S.V. (2010), "The chain of effects from reputation and brand personality congruence to brand loyalty: The role of brand identification", *Journal of Targeting, Measurement and Analysis for Marketing*, vol. 18, n. 3-4, pp. 167-176.
- KUMAR S., CORREA C.G., DASGUPTA I., ET AL. (2022), "Using Natural Language and Program Abstractions to Instill Human Inductive Biases in Machines. article. DOI: 10.48550/arxiv.2205.11558.
- LANGLEY A. (2004), *"Qualitative Researching (Book)"*, 1st ed. Sage.
- LEMON K.N., VERHOEF P.C. (2016), "Understanding customer experience throughout the customer journey", *Journal of marketing*, vol. 80, n. 6, SAGE Publications Sage CA: Los Angeles, CA, pp. 69-96.
- LEVAC D., COLQUHOUN H., O'BRIEN K.K. (2010), "Scoping studies: advancing the methodology", *Implementation Science*, vol. 5, n. 1, pp. 69.
- LUND B.D., WANG T. (2023), "Chatting about ChatGPT: how may AI and GPT impact academia and libraries? *Library Hi Tech News*, vol. 40, n. 3, article. Bradford: Emerald Publishing Limited, pp. 26-29.
- MALTERUD K., SIERSMA V.D., GUASSORA A.D. (2016), "Sample Size in Qualitative Interview Studies", *Qualitative Health Research*, vol. 26, n. 13, Journal of the Academy of Marketing Science, pp. 1753-1760.
- MANIS K.T., MADHAVARAM S. (2023), "AI-Enabled marketing capabilities and the hierarchy of capabilities: Conceptualization, proposition development, and research avenues", *Journal of Business Research*, vol. 157, 113485.
- MICH L., GARIGLIANO R. (2023), "ChatGPT for e-Tourism: a technological perspective", *Information technology & tourism*, vol. 25, n. 1, article. Berlin/Heidelberg: Springer Berlin Heidelberg, pp. 1-12.
- MURRAY J. (2010), "Qualitative Research Methods", In: *Principles of Social Psychiatry*. 1st ed. Chichester, UK: John Wiley & Sons, Ltd, pp. 77-87.
- NIKHASHEMI S.R., DELGADO-BALLESTER E. (2022), "Branding antecedents of consumer need for uniqueness: a behavioural approach to globalness vs. localness", *Journal of Marketing Communications*, vol. 28, n. 4, pp. 392-427.
- PAUL J., UENO A., DENNIS C. (2023), "ChatGPT and consumers: Benefits, Pitfalls and Future Research Agenda", *International journal of consumer studies*, vol. 47, n. 4, article. HOBOKEN: Wiley, pp. 1213-1225.
- PAVLIK J. v. (2023), "Collaborating with ChatGPT: Considering the Implications of Generative Artificial Intelligence for Journalism and Media Education", *Journalism & Mass Communication Educator*, vol. 78, n. 1, pp. 84-93.
- PONCIANO J. (2023), "Buy the Hype? AI Frenzy Has Stocks Surging and Plunging-But Morgan Stanley Calls The Technology A 'Serious Contender'", *Forbes.com.*, pp. 1-1.
- PUCCINELLI N.M., GOODSTEIN R.C., GREWAL D., ET AL. (2009), "Customer Experience Management in Retailing: Understanding the Buying Process", *Journal of Retailing*, vol. 85, n. 1, Elsevier BV, pp. 15-30.
- RADLER V.M. (2018), "20 Years of brand personality: A bibliometric review and research agenda", *Journal of Brand Management*. DOI: 10.1057/s41262-017-0083-z.
- RAY P.P. (2023), "ChatGPT: A comprehensive review on background, applications, key challenges, bias, ethics, limitations and future scope", *Internet of Things and Cyber-Physical Systems*, vol. 3, pp. 121-154.
- REPORTLINKER (2022), *Global automotive industry 2022-2026*.
- SACINO A., COCCHELLA F., DE VITA G., ET AL. (2022), "Human- or object-like? Cognitive anthropomorphism of humanoid robots", *PLOS ONE* Bongard J (ed.), vol. 17, n. 7, article. San Francisco: Public Library of Science: e0270787.
- SAEED M.R., BURKI U, ALI R., ET AL. (2022), "The antecedents and consequences of brand personality: a systematic review", *EuroMed Journal of Business*. DOI: 10.1108/EMJB-12-2020-0136.
- TEUBNER T., FLATH C.M., WEINHARDT C., ET AL. (2023), "Welcome to the Era of ChatGPT et al", *Business & information systems engineering*, vol. 65, n. 2, article. Wiesbaden: Springer Fachmedien Wiesbaden, pp. 95-101.
- THOMAS J., HARDEN A. (2008), "Methods for the thematic synthesis of qualitative research in systematic reviews", *BMC Medical Research Methodology*, vol. 8, n. 1, pp. 45.
- THORP H.H. (2023), "ChatGPT is fun, but not an author", *Science*, vol. 379, n. 6630, pp. 313-313.
- TOOMER E., BOWEN K., GUMMESSON E. (1993), "Qualitative Methods in Management Research", *The Journal of the Operational Research Society*, vol. 44, n. 7, pp. 735.
- TRACY S.J. (2010), "Qualitative Quality: Eight "Big-Tent" Criteria for Excellent Qualitative Research", *Qualitative Inquiry*, vol. 16, n. 10, pp. 837-851.
- TROTTER R.T. (2012), "Qualitative research sample design and sample size: Resolving and unresolved issues and inferential imperatives", *Preventive Medicine*, vol. 55, n. 5, Elsevier Inc., pp. 398-400.
- VELOUTSOU C. (2023), "Enlightening the brand building-audience response link", *The journal of brand management*. article. DOI: 10.1057/s41262-023-00331-y.
- YOO C.Y. (2014), "Branding potentials of keyword search ads: The effects of ad rankings on brand recognition and evaluations", *Journal of Advertising*, vol. 43, n. 1, pp. 85-99.

Understanding the potentialities of metaverse for marketers. Insights from Italy

ANNARITA SORRENTINO¹ MICHELE SIMONI² LUCA VENTURINI³ MYRIAM CARATU⁴

Abstract

The current study presents an empirical analysis of the metaverse, contributing to the initial literature on this topic. Specifically, the research examines the implications and potential of the metaverse for both consumers and firms by investigating its impact on marketing opportunities. The research aim is achieved through a qualitative analysis. A case study approach was used to explore the practical opportunities related to using the Metaverse servicescape as a marketing enabler. Main results reveal the metaverse as an evolution of technologies (metatech) and the evolution of the experience environment (metascape). It also enriches the existing literature by offering an in-depth qualitative study in a context where scholars have mostly applied conceptual methods. Moreover, it proposes theoretical and practical implications that advance knowledge of the subject and offer ideas for future research and managers.

Key words: Metaverse; Metascape, Metatech; Qualitative analysis; Alterside

Framing of the research. *The rapid development of immersive technologies and metaverse applied to marketing has created new environments where consumers can find novel experiences to learn, enjoy, and escape, and firms may experiment with new ways to communicate their brand and achieve a more qualified audience (Batat, 2024; Ahn et al., 2022). The concept of the metaverse is not new (Stephenson, 1992); however, in the last two years, both academic (Barrera & Shah, 2023; Buhalis et al., 2023; Hajian et al., 2024; Taylor, 2022) and entrepreneurial attention has grown tremendously on this issue.*

From a theoretical point of view, research on the metaverse has intensified in recent months by trying primarily to codify a definition. Despite the general lack of consensus on the precise scope or definition of the metaverse and how it will evolve (Dwivedi et al., 2022), the term “metaverse”, a union of “meta” (beyond) and “verse” (short for “universe”), indicates a three-dimensional virtual world (Park & Kim, 2022): an immersive space within which individuals can move, share and interact through personalized avatars (Cunningham, 2014; Duan et al., 2021). The compound of “meta and “universe” concepts has also been utilized by (Choi & Kim, 2017) who define the metaverse as a space created by merging virtual reality and augmented reality with the real world. Barrera and Shah (2023) define Metaverse “as a technology-mediated network of scalable and potentially interoperable extended reality environments merging the physical and virtual realities to provide experiences characterized by their level of immersiveness, environmental fidelity, and sociability.” This definition of metaverse as a blend of different realities is reinforced by Siyaev and Jo (2021) and Ryskeldiev et al. (2018) who said that with the metaverse physical and digital objects co-exist and interact in live-time through mixed reality and by Buhalis et al. (2023) who specify that convergence of the physical with the digital in the metaverse experience will offer new opportunities to fascinate, involve, and keep consumers.

This study attempts to extend the metaverse management literature by conducting a novel empirical study that considers the metaverse from different perspectives. Firstly, Metaverse is a holistic immersive technology named metatech; Secondly, Metaverse is an experiential space for consumers in terms of a new way to learn, escape, entertain and for companies as a marketing enabler for brand experience, advertising, product placement, named metascape.

The metaverse has the potential to be a marketing enabler by supporting the creation of new forms of sponsorship, organic and paid advertising, product placement, and brand experiences that integrate with those already present in the physical world. Once the potential of the Metaverse as the next big communication channel has been identified, marketers should focus on successfully promoting products and services through it. The Metaverse platforms will present an ever-increasing number of immersive marketing tools designed to target specific demographic audiences as

¹ University of Napoli Parthenope
e-mail: annarita.sorrentino@uniparthenope.it

² University of Napoli Parthenope
e-mail: michele.simoni@uniparthenope.it

³ University of Napoli Parthenope
e-mail: luca.venturini@studenti.uniparthenope.it

⁴ e-mail: myriam.caratu@unint.eu

it establishes itself as a new 3D channel worthy of integration (Hollensen et al., 2022). Through Metaverse marketing, brands can communicate their brand universe to young consumers in digital spaces, increasing brand desirability and merging the online experience with the offline characteristics of the purchase. This can include physically touching the product to verify its quality, which has been shown to drive willingness to purchase even in augmented environments (Serravalle et al., 2022). However, selecting the right Metaverse platform and developing a marketing communication strategy without causing brand damage can be challenging due to the platform's developmental stage. Therefore, marketers should first identify their marketing objectives for entering the Metaverse and then choose the appropriate platform to promote their brands, products, or services. The goal of this study is to distinguish the concrete differences between the holistic experiences provided by current metaverse platforms, which will aid marketers in their decision-making process and assist scholars in defining their future research. According to Jooyoung Kim (2021), there will be a need to set an agenda for marketers and advertisers when the metaverse becomes massive populated. This is because the advertising models will differ from those of traditional mass media and will be more like the ads in video games. To comprehend the advertising models that will dominate the metaverse, it is crucial to first understand the motivations that drive users to enter it. These reasons are not solely economic, unlike those of advertisers. While the possibility of experiencing a virtual world of events and socializing is attractive to most consumers, the primary motivation remains the enjoyment of gaming. Numerous companies have recently entered the Metaverse as advertisers, including Nike and Disney. Their goal is to maintain a presence in the virtual world of consumers' 'second live'. These companies are aligning their marketing and communication strategies with the characteristics of the metaverse. They are creating immersive brand experiences that promote their ideas and values, while fostering a sense of community that transcends boundaries.

Purpose of the paper. We contribute to extant research by proposing an empirical study in an area where academics have mainly used theoretical approaches by providing a meaning of the metaverse and its current forms of use, as well as defining the trajectories that will characterize consumer experiences in the coming years. The results bring to light a metaverse that represents a "third dimension" where innovative technologies coexist, where the real merges with the virtual in the so-called "second life" and this produces interesting implications for companies and marketers. From a theoretical perspective, this study contributes to the marketing and management literature by integrating the characteristics of new technologies offered by the metaverse with the opportunities for marketing with empirical evidence which adds novelty to our research because literature can be compared with the point of view of entrepreneurs and experts. Managerial implications emerge that support the managers who want to understand what the development trajectories are and consequently how to take advantage of the metaverse's opportunities. This research extends the embryonic literature on metaverse by applying a two-step analysis, by revealing how the holistic technologies within the metaverse may create new opportunities for marketing.

Methodology. To provide a clear definition of the metaverse from a practical perspective, this study follows an empirical-based approach that excludes subjective evaluations and aims to understand the marketing opportunities related to the usage of these immersive platforms by conducting an in-depth qualitative analysis. Several semi-structured interviews were conducted with the first Italian marketing agency in the metaverse named 'Alterside'.

To achieve our research aim, we use the case study method as a research approach (Eisenhardt, 2020; Rashid et al., 2019) to understand the meaning of the metaverse and how it will change the paradigms of the consumer experience and the advertising opportunities for companies. Regarding the choice of the case, we respected the criteria of the research purpose.

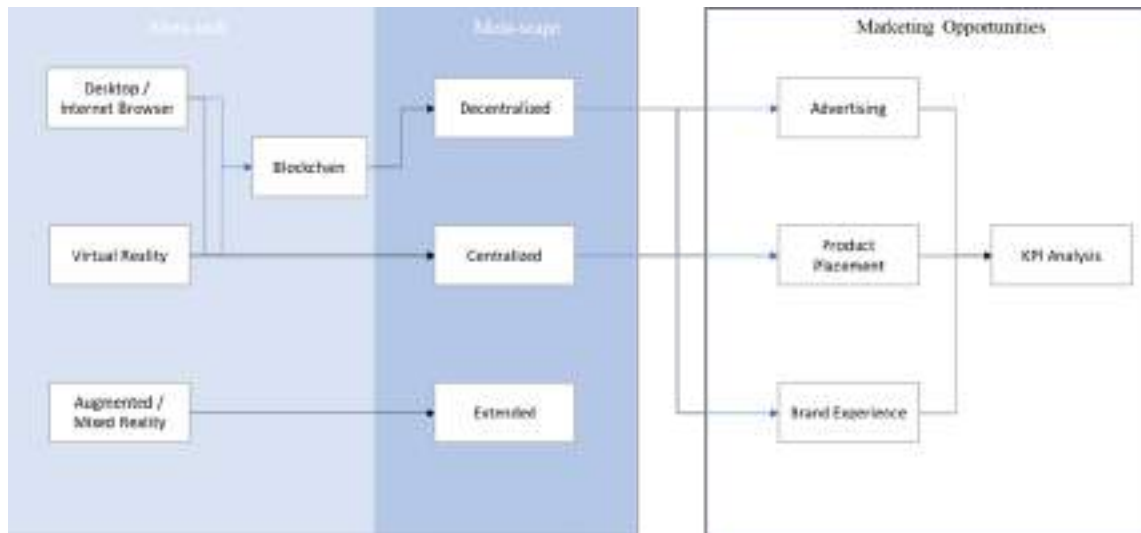
Alterside is a marketing agency specializing in creating Virtual Reality, Augmented Reality and NFT experiences, services and content within the metaverse. The case study method is convenient when the form of the research question is "How?" (Yin, 2009). Because of the peculiarity of the case and the absence of a pre-existing theoretical framework, an exploratory research design was structured (Meredith, 1998; Yin, 2013); furthermore, we do not create propositions and hypotheses (Mills et al., 2009). The exploratory nature of case studies can also reveal new facets of the phenomenon under analysis (Dubois & Gadde, 2014; Eisenhardt & Graebner, 2007).

Through a qualitative research approach based on primary and secondary data, we used multiple sources of evidence for the triangulation of data (Yin, 2009), and we organized the case study analysis into two phases. We collected information from personal interviews and online documentation such as reports, statistical data, and specialized press articles. As a primary source of data, we conducted 10 interviews with the various actors involved in the company Alterside. Through a semi-structured questionnaire, we requested information on the main Alterside actors (the founder, the key account manager, the marketing manager, and the different project managers). The personal interviews comprised open-ended questions to collect the perceptions about the definition and meaning of metaverse and the current and future opportunities for advertisers. Each conversation typically took 60 minutes. All interviews were audio-recorded, transcribed verbatim to facilitate the analysis, and anonymized. As secondary sources, several media publications, and official reports from January 2023 to December 2023 were also analyzed to understand the state of the art of the metaverse. The analysis practiced an iterative and inductive approach. Inductive theory based on qualitative data is appropriate in an understudied empirical environment in which there is relatively little prior work (Bansal et al., 2018). The multiple data elements furnish a stronger demonstration and consistency of the key objectives of the case study. Although multiple sources of evidence (e.g., personal interviews and online documentation) are different and independent, their combination can be fundamental to scholars as complementary perspectives of the phenomenon may be produced. Therefore, personal interviews, official company data, media publications and other evidence were triangulated and analysed through a thematic analysis (Braun and Clarke, 2006).

Results. In this paper, we try to enrich the marketing literature by talking about the metaverse, the metaverse has been framed as a new holistic consumption space where all the most innovative technologies (e.g. NFT, VR, AR, blockchain, cryptocurrencies) able to coexist to create a third dimension that adds to the physical and digital one.

Indeed, the first interesting thing that emerged from our study is the holistic dimension of the metaverse, that brings all the emerging technologies together (AR and VR, NFT, blockchain, cryptocurrencies) to create what happens in reality in a virtual way. This phenomenon has been called the third dimension that will not replace the physical or digital life that you already live, but will add to it, creating more effectively usable opportunities in the metaverse and others more appropriate for real or digital life. According to Alterside, the metaverse is a new environment where some existing technologies coexist creating a new dimension of fruition, in addition to the offline and online one, the experience of a virtual second life.

Fig. 1 – The opportunities of metaverse for marketers



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Indeed, the first interesting thing that emerged from our study is the holistic dimension of the metaverse, that brings all the emerging technologies together (AR and VR, NFT, blockchain, cryptocurrencies) to create what happens in reality in a virtual way. This phenomenon has been called third dimension that will not replace the physical or digital life that you already live, but will add to it, creating more effectively usable opportunities in the metaverse and others more appropriate for real or digital life.

As emerged from the results, going to the metaverse to buy a dress does not exclude that I will go shopping in stores, nor will I no longer go on e-commerce, the third dimension is halfway between the two. So, if today we are unconsciously used to living in these two dimensions online and offline, tomorrow we will live in three dimensions online and offline and in a hybrid one in between, which should unite what we do offline and what we do online, giving us a third way of interacting.

An interesting, emerged result is related to the opportunities for advertisers. Indeed, what we imagine today is that advertising in the metaverse will be much more like what we experience offline today. The difference is that advertising in physical space has limits. As an entrepreneur interviewed explained to us, you can put a billboard on the wall of a building and it ends up there, in the metaverse, however, you can put a billboard that changes according to the user who looks at it. The interesting thing is that in the metaverse a billboard becomes interactive, if there is a call to action, the avatar can touch it and continue the experience elsewhere, in another environment, for example, directly in a shop. Product placement will be used a lot as a form of advertising and the innovation will be that the user will be able to buy both the digital version of the avatar (the so-called digital twin) and the real one that arrives at home with the courier of that product and businesses they can measure the returns of that advertising because the behaviors are tracked by the data. This means that the metaverse opens a series of new opportunities for companies, still a bit skeptical today and waiting for the metaverse to become accessible. In fact, what will make these practices more concrete will be the diffusion of the metaverse experience among consumers and this will only happen when viewers spread in an accessible way.

Research limitations. The paper contributes to the literature on the metaverse with an empirical exploration of the meaning and opportunities, by using a qualitative approach. Our study is a first attempt to explore the current state-of-art about the metaverse and for identifying some key aspects of its future implementation. Although this paper represents an important informative contribution for companies and academics, it should be emphasized that it is defocused on specific aspects that will certainly be the subject of a second research step.

Future research may be conducted by interviewing firms that have already experienced service in the metaverse and, on the other hand, it could be also important to capture the consumers perceptions on the metaverse.

Managerial implications. Managerial implications emerge that support the managers who want to understand what the metaverse is and what the development trajectories are and consequently how to take advantage of the metaverse's opportunities. Our study has practical and academic implications in the field of technology applied to marketing. Our qualitative investigation incorporates both customer and company perspectives, thus increasing the understanding of the subject and providing meaningful contributions for marketers who want to investigate the mechanism of promotional strategies with reality-enhancing technologies (Hilken et al., 2022). From the firm's point of view, the identification of the meaning and the future development of the metaverse within a marketing strategy should be useful. The third dimension offered by the metaverse allows understanding that they will not replace the current marketing activities but rather it will represent an extra option where place the most appropriate brand experiences. The element of second life, from a marketing point of view, offers opportunities to recreate everything that exists in real life, in virtual, thus increasing sales opportunities for the so-called digital twin. Finally, the surprising finding that metaverse may perceive and keep the biometric data has important practical implications.

First, it makes it possible to monitor marketing actions also through perceived data, which is the most important in consumer purchasing behaviour. Furthermore, it gives the possibility of profiling consumers based on biometric variables and making advertising even less invasive than it is now in the two-dimensional internet.

Originality of the paper. We contribute to extant research by proposing an empirical study in an area where academics have mainly used theoretical approaches by providing a meaning of the metaverse and its current forms of use, as well as defining the trajectories that will characterize consumer experiences in the coming years. The results bring to light a metaverse that represents a "third dimension" where innovative technologies coexist, where the real merges with the virtual in the so-called "second life" and this produces interesting implications for companies, and marketers.

References

- AHN S.J., KIM J., KIM J. (2022), "The bifold triadic relationships framework: A theoretical primer for advertising research in the metaverse", *Journal of Advertising*, vol. 51, n. 5, pp. 592-607.
- BANSAL P., SMITH W.K., VAARA E. (2018), "New ways of seeing through qualitative research", *Academy of management journal*, vol. 61, n. 4, pp. 1189-1195.
- BARRERA K.G., SHAH D. (2023), "Marketing in the Metaverse: Conceptual understanding, framework, and research agenda", *Journal of Business Research*, vol. 155, 113420.
- BATAT W. (2024), "Phygital customer experience in the metaverse: A study of consumer sensory perception of sight, touch, sound, scent, and taste", *Journal of Retailing and Consumer Services*, vol. 78, 103786.
- BRAUN V., CLARKE V. (2006), "Using thematic analysis in psychology", *Qualitative research in psychology*, vol. 3, n. 2, pp. 77-101.
- BUHALIS D., LEUNG D., LIN M. (2023), "Metaverse as a disruptive technology revolutionising tourism management and marketing", *Tourism Management*, vol. 97, 104724.
- CHOI H.S., KIM S.H. (2017), "A content service deployment plan for metaverse museum exhibitions—Centering on the combination of beacons and HMDs", *International Journal of Information Management*, vol. 37, n. 1, pp. 1519-1527.
- CUNNINGHAM T.C. (2014), *Marching toward the metaverse: strategic communication through the new media*. CreateSpace Independent Publishing Platform.
- DUAN H., LI J., FAN S., LIN Z., WU X., CAI W. (2021), "Metaverse for social good: A university campus prototype", *Proceedings of the 29th ACM international conference on multimedia*.
- DUBOIS A., GADDE L.-E. (2014), "Systematic combining"—A decade later", *Journal of Business Research*, vol. 67, n. 6, pp. 1277-1284.
- DWIVEDI Y.K., HUGHES L., BAABDULLAH A.M., RIBEIRO-NAVARRETE S., GIANNAKIS M., AL-DEBEI M.M., DENNEHY D., METRI B., BUHALIS D., CHEUNG C.M.K., CONBOY K., DOYLE R., DUBEY R., DUTOT V., FELIX R., GOYAL D.P., GUSTAFSSON A., HINSCH C., JEBABLI I., JANSSEN M., KIM Y.G., KIM J., KOOS S., KREPS D., KSHETRI N., KUMAR V., OOI K.B., PAPAGIANNIDIS S., PAPPAS I.O., POLYVIOU A., PARK S.M., PANDEY N., QUEIROZ M.M., RAMAN R., RAUSCHNABEL P.A., SHIRISH A., SIGALA M., SPANAKI K., WEI-HAN TAN G., TIWARI M.K., VIGLIA G., WAMBA S.F. (2022), "Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy", *International Journal of Information Management*, vol. 66, 102542.
- EISENHARDT K.M. (2020), Theorizing from cases: A commentary. Research methods in international business, pp. 221-227.
- EISENHARDT K.M., GRAEBNER M.E. (2007), "Theory building from cases: Opportunities and challenges", *Academy of management journal*, vol. 50, n. 1, pp. 25-32.
- HAJIAN A., DANESHGAR S., SADEGHI K., OJHA D., KATIYAR G. (2024), "From theory to practice: Empirical perspectives on the metaverse's potential", *Technological Forecasting and Social Change*, vol. 201, 123224.
- HILKEN T., KEELING D.I., CHYLINSKI M., DE RUYTER K., GOLF PAPEZ M., HELLER J., MAHR D., ALIMAMY S. (2022), "Disrupting marketing realities: A research agenda for investigating the psychological mechanisms of next-generation experiences with reality-enhancing technologies", *Psychology & Marketing*, vol. 39, n. 8, pp. 1660-1671.
- HOLLENSSEN S., KOTLER P., OPRESNIK M.O. (2022), "Metaverse—the new marketing universe", *Journal of Business Strategy*, (ahead-of-print).
- KIM J. (2021), "Advertising in the metaverse: Research agenda", *Journal of Interactive Advertising*, vol. 21, n. 3, pp. 141-144.
- MEREDITH J. (1998), "Building operations management theory through case and field research", *Journal of operations management*, vol. 16, n. 4, pp. 441-454.

- MILLS A.J., DUREPOS G., WIEBE E. (2009), *Encyclopedia of case study research*. Sage publications.
- PARK S.M., KIM Y.-G. (2022), "A metaverse: Taxonomy, components, applications, and open challenges", *IEEE Access*, vol. 10, pp. 4209-4251.
- RASHID Y., RASHID A., WARRAICH M.A., SABIR S.S., WASEEM A. (2019), "Case study method: A step-by-step guide for business researchers", *International journal of qualitative methods*, vol. 18, 1609406919862424.
- RYSKELDIEV B., OCHIAI Y., COHEN M., HERDER J. (2018), "Distributed metaverse: creating decentralized blockchain-based model for peer-to-peer sharing of virtual spaces for mixed reality applications", *Proceedings of the 9th augmented human international conference*,
- SERRAVALLE F., VIASSONE M., DEL CHIAPPA G. (2022), "Sensory disclosure in an augmented environment: memory of touch and willingness to buy", *Italian Journal of Marketing*, vol. 2022, n. 4, pp. 401-417.
- SIYAEV A., JO G.S. (2021), "Towards aircraft maintenance metaverse using speech interactions with virtual objects in mixed reality", *Sensors*, vol. 21, n. 6, pp. 2066.
- STEPHENSON N. (1992), *Snow crash: A novel* (2003rd ed.), Spectra.
- TAYLOR C.R. (2022), *Research on advertising in the metaverse: a call to action*. In (Vol. 41, pp. 383-384): Taylor & Francis.
- YIN R.K. (2009), *Case study research: Design and methods* (Vol. 5), sage.
- YIN R.K. (2013), "Validity and generalization in future case study evaluations", *Evaluation*, vol. 19, n. 3, pp. 321-332

“The influence of individual values on purchase intention of fair-trade products: An analysis on Italian consumers”

NOHAILA KARTTI¹ GIUSEPPE FRANZESE² CHIARA CANNAVALE³

Abstract

This paper examines how individual values influence the purchase intentions of fair-trade products among Italian consumers. Fair-trade initiatives promote fair and sustainable practices, aiming to empower marginalized communities.

By focusing on consumers' individual values, this research seeks to uncover the underlying motivations driving fair-trade purchasing decisions. A survey-based methodology will be employed to explore consumers' values and the impact of values on fair-trade purchase intentions. Consumers' values will be investigated using the Schwartz value theory (1992).

Data will be collected using an online survey submitted to Italian consumers. The survey will be developed from sources already used and validated in the literature. An exploratory factor analysis (EFA) will be performed on the ten Schwartz metavalues measured using the portrait values questionnaire (PVQ) method. Also, a confirmatory factor analysis (CFA) will be performed to assess the psychometric properties of the scales. Finally, multiple regressions will be carried out to determine if there are significant associations between specific cultural values and the intention to buy fair-trade products. Research is ongoing, but early results suggest a positive effect between some individual values of (SVT) and intention to purchase fair-trade products, with implications on marketing strategies and policy making. The originality of this paper lies in its focus on Italian consumers and their individual values, contributing to a deeper understanding of fair-trade consumption patterns and promoting ethical and sustainable consumer behavior in the Italian market.

Keywords: Schwartz value theory; individual value, fair-trade product; purchase intention; ethics of consumption

Framing of the research. *The tension connected to globalization and the focus on profitability and efficiency have limited the development of fair-trade between manufacturers and retailers (Fiedoruk, 2021), and small-scale producers and labourers frequently struggle to strengthen their negotiating position in both local and international markets (Ncube, 2020). Fair-trade organisations (FTOs) promote different business relationships with farmers and craftsmen in developing countries and rural regions that frequently experience social and economic marginalization to alleviate this gap (Krier, 2006). These collaborations emphasize sustainable environmental practices, safe working conditions, and fair compensation to empower underprivileged communities and promote fair-trade practices. Therefore, creating sustainable and people-centred business models is the main goal of fair-trade (FT) practices (Bhavsar et al., 2021). Hence, fair-trade could be considered as an alternative to international conventional trade. It is a kind of trading partnership that promotes marginalized or disadvantaged producers through sustainable development (Śliwińska, 2023).*

The promotion of fair trade chains becomes even more critical when considering policymakers' global social and environmental sustainability goals. In particular, delving deeper into issues related to fair-trade products could help achieve some of the goals outlined in the 2030 agenda concerning the 17 Sustainable Development Goals (SDGs) defined by the United Nations. Specifically, these goals include points 1 (No poverty), 8 (Decent work and economic growth), and 16 (Peace, justice, and strong institutions).

From this standpoint, fair-trade provides consumers with a variety of products that adhere to elevated social and ecological criteria (Sellare et al., 2020), aligning with the increasing consumers' awareness of the environmental and social impacts of their purchasing decisions. The consumer's desire to address social injustices and inequality while aiding firms in their “transition away” from the conventional, unsustainable economic model is reflected in this tendency (White et al., 2019; Ethical Consumer, 2021). Based on these considerations, understanding and analyzing the factors that most influence consumers' purchase intentions of fair-trade products can be important for fair-trade firms, NGOs

¹ University of Napoli Parthenope
e-mail: nohaila.kartti001@studenti.uniparthenope.it

² University of Napoli Parthenope
e-mail: giuseppe.franzese3@studenti.uniparthenope.it

³ University of Napoli Parthenope
e-mail: chiara.cannavale@uniparthenope.it

and retailers involved in the fair-trade to attract more customers and improve this business with a positive impact on local farmers and artisans.

Several scholars conducted over the last 20 years have examined the variables that affect customers' decisions to buy fair-trade goods (Chatzidakis et al., 2016; Beldad & Hegner, 2018). Customers' inclinations to buy fair-trade products are significantly influenced by their views on these products, societal norms, and moral obligations (Robichaud & Yu, 2021). Moreover, several research investigations highlighted that individuals with heightened environmental awareness tend to prefer purchasing fair-trade and environmentally sustainable products. (Haj-Salem et al., 2022; Kirmani et al., 2022). Furthermore, attitudes are widely acknowledged in the literature on social marketing and cognitive psychology as having a substantial role in determining customers' altruistic and ethical behavior (White et al., 2019). Indeed, several studies examining fair-trade purchasing have found a clear association between consumers' opinions toward fair-trade and their inclination to purchase fair-trade goods (Kossmann & Gomez-Suarez, 2019; Pinna, 2020; Robichaud & Yu, 2021; Shaw & Shiu, 2002; Wang & Chou, 2020). However, these studies didn't consider that individual values strongly impact the attitude and the intention to buy (Rohan, 2000). Previous research has shown that values significantly impact beliefs and attitudes, typically influencing intentions to act in specific ways (Grankvist et al., 2007; Joireman and Duell, 2007). According to Rokeach (1973, p.5), individual values are "enduring beliefs that a specific mode of conduct or end-state of existence is personally or socially preferable to opposite or converse modes of conduct or end-state". Hence, values represent an individual's fundamental principles or overarching beliefs that lead their actions, judgments, and decisions (Rokeach, 1973; Williams, 1979). They encompass directional, cognitive, and affective dimensions, serving as criteria for evaluating behaviors and events (Williams, 1979). However, it's crucial to understand how each individual's values differ in nature and importance (Grankvist et al., 2007). Schwartz (1992) already assumed that individuals have a set of values that shape their lives and establish their preference patterns. According to Schwartz (1992), 56 value elements correspond to ten distinct metavalues: achievement, power, hedonism, self-direction, stimulation, security, conformity, tradition, benevolence, and universalism. These ten metavalues are arranged in a circular pattern consistent with the Schwartz value theory (1992), where values that correlate positively are closer or next to one another, while values that correlate negatively are farther away or opposite. According to Jimenez et al. (2020), the most often used value scale in contemporary human/individual values research is the Schwartz Value Theory (SVT).

By identifying the wants and desires of customers, an understanding of their values may improve the effectiveness of marketing. A multitude of nations, including Belgium, the US, Sweden, Greece, the UK, and Spain, have carried out substantial studies on personal values and socially conscious consumption (Steenhaut and Kenhove, 2006; Grankvist et al., 2007; Krystallis et al., 2008; Pepper et al., 2009). In Italy, there is a lack of studies considering the individual values' impact on fair-trade purchasing intention. Thus, it could be fascinating to understand how the individual values of Italian consumers impact their decision to purchase fair-trade products.

Purpose of the paper. The research aims to delve into the individual values of Italian consumers and how these values influence their decision-making process when purchasing fair-trade products. This investigation arises within the framework of fair-trade principles, emphasizing equitable treatment, fair compensation, safe working conditions, and environmental sustainability.

This study addresses a gap in the existing literature by narrowing its focus to Italian consumers and their value systems. Focusing on Italian consumers, the research aims to provide insights into the unique factors driving their intention to buy fair-trade. Thus, through an in-depth analysis of Italian consumers' values, attitudes, and behaviors, this research aims to uncover the underlying motivations behind their fair-trade purchasing decisions. Specifically, it will explore how individual values shape consumers' preferences and actions in the fair-trade marketplace. Accordingly, the research question of this work is:

RQ. How do individual values influence the purchase intentions of fair-trade products among Italian consumers?

Methodology. To fulfill the aim of this study and address the research question posed, a survey will be conducted. The survey will be developed from sources already used and validated in the literature (Tobón & Luna-Nemecio, 2021). The advantage of relying on already validated sources increases the possibility of obtaining a reliable and valid questionnaire (Sürücü & Maslakçı, 2020).

The survey will be divided into three sections. The first section will measure the ten individual values defined by Schwartz's model to determine how relevant each value is to respondents. To carry out this measurement, the 21-item PVQ of Schwartz will be used. This tool is widely used and accepted in the literature to predict the attitudes and behaviors of individuals (Jimenez et al., 2020). The importance of the values will be rated on a Likert scale between 1 and 7. One indicates "not at all like me", and seven indicates "very similar to me".

The second section will collect data about the purchase intention of fair-trade products. The first part of this section will provide respondents with a brief definition of these products. In particular, a fair-trade business relationship is one in which employees receive a fair salary, labor is performed in hygienic and safe circumstances, and environmental protection is prioritized. (Binion, 2020). Haj-Salem et al.' adapted scale (2022) will be used to measure intention to purchase fair-trade products, while items evaluating attitudes about fair-trade products will be produced based on Zerbinì et al. (2019). Using a seven-point Likert-type scale, (1) = strongly disagree and (7) = strongly agree, these scales will be tested. Finally, in the third section, demographic and socioeconomic information such as age, gender, education, occupation, and income level will be collected.

The two-step data analysis method proposed by Anderson and Gerbing (1988) will be used. To determine the personal values (meta-values), an exploratory factor analysis (EFA) will be conducted in the first stage on the ten Schwartz values derived from the answers to the portrait values questionnaire (PVQ); in the second stage, a confirmatory factor analysis

(CFA) will be conducted to evaluate the psychometric qualities of the scales. Lastly, multiple regression analysis will be performed to ascertain the connections between certain cultural values and the intention to buy fair-trade goods.

Additionally, respondents will be advised that all of their answers are anonymous and confidential, and they are urged to provide as truthful an answer as possible. We'll send emails and post links to the poll on social media. This strategy may assist in guaranteeing respondents' anonymity and lowering social disability prejudice based on a convenience sample (Ming et al., 2021).

Expected Results. Understanding in depth how Schwartz's values may help understanding how consumers develop their purchase intention, and what are the factors that organizations can use to facilitate the emergence of the intention and the translation of the intention into action. The use of fair-trade products is important in a world where attention to the environment, sustainability, and the well-being of individuals has become crucial in addressing current global challenges. In the context of growing environmental and social awareness, consumers are increasingly taking an active role in reducing the environmental impact of their consumption choices and supporting ethical business practices (Busalim et al., 2022). As identified by Schwartz's value theory, individual values guide people's preferences, decisions, and behaviors in various contexts, including consumption. These values reflect an individual's fundamental beliefs about what is essential in life and influence perceptions of the world and actions taken (Schwartz & Bilsky, 1990).

As observed by other scholars in contexts related to the purchase of green, sustainable products and taking into account the conditions of workers, it is expected to observe a positive correlation between specific individual values of participants and their propensity to purchase fair-trade goods (Haj-Salem, 2024; Shaver & Yan, 2022; Li et al., 2021). Consumers who give more importance to ethical and social values, such as equality, benevolence, and universalism, may be more inclined toward issues related to social justice and environmental sustainability (Sarid & Goldman, 2021). This inclination should drive individuals toward purchasing products that adhere to these principles. Furthermore, it is expected that consumers who find an alignment between their values and the fair-trade products principles will be more likely to use them, even if the price is higher (Musa & Gopalakrishna, 2021). On the other hand, it is also expected to encounter notable variations between demographic categories and individual values' influence on consumer intentions. For instance, purchasing habits may differ based on age, income, education, and cultural background.

Higher-educated people or those from more environmentally conscious cultural origins may indicate a greater inclination to buy fair-trade goods than people from other backgrounds (Berki-Kiss & Menrad, 2022).

Since the degree of knowledge and instruction about sustainability and fairness themes strongly impact how individual beliefs affect consumer behaviors (Hosta & Zabkar, 2021), a better-informed customer about fair-trade and production concerns may be more inclined to act responsibly while purchasing.

However, discrepancies between expressed values and customers' purchase patterns may arise, among other outcomes. For instance, a customer may claim to support social justice and the environment, but at the moment of purchase, they may be swayed by other considerations like availability or price. This could cause a distance between expressed intentions and practical actions.

Finally, this research will deeply understand how consumers' individual beliefs impact their attitudes and intentions to buy fair-trade products.

Research limitations. Despite the interesting possible results of the study regarding the relationship between individual values and intention to buy and purchase fair-trade products, it could still suffer from several limitations. First, the survey may not have a representative sample of the Italian population, which could influence the results. Also, undermining the validity of the work could be responses provided by participants influenced by many factors, such as a desire to provide socially acceptable answers or a lack of awareness of their cultural values. Consider also that the study will adopt a cross-sectional perspective and not a longitudinal perspective so data will be collected at a given time. Furthermore, the results obtained will be specific to the Italian context and may not be generalizable to other populations or cultural contexts, limiting the applicability of the research findings. For these reasons, future studies should consider these limitations and possibly increase the reference sample and replicate the analysis in other countries to improve the generalizability of the results.

Managerial implications. Understanding the impact of consumers' individual values on the intention to buy fair-trade products and the purchase of these products could be helpful to several subjects. A comprehensive analysis of the correlation between individual cultural values and inclinations towards fair-trade products may shed lights on the factors affecting consumers' intentions and help promoting products in the most effective way. This knowledge can increase the significance of multicultural marketing tactics, which mostly consider country or collective culture, with the weak assumption of a diirect influence of it on consumers' individual choices and behaviors. Researchers can forecast people's attitudes and behavior by identifying the values that are significant to them (Kamakura and Novak, 1992). This knowledge could be particularly useful in the fair-trade business, as marketers may achieve a competitive edge by offering fair-trade products (Strong, 1997). These findings' practical uses would be in marketing campaigns, as companies are better able to spark interest in their goods when they are aware of the values of their customers (Durgee et al., 1996). Since customers use values to guide their purchasing decisions, marketers should use this knowledge to shape their communications better (Allen, 2001; Blackwell et al., 2001). Therefore, by understanding the impact of individual values on fair-trade purchase intention, marketers can customize their messaging and positioning better to align with these values.

The study's results can also guide product development efforts within fair-trade organizations. Understanding what values are most important to consumers can help develop new fair-trade products that align with these values. For

example, consider environmental sustainability critical to fair-trade consumers' purchase intentions. In that case, organizations can focus on developing environmentally friendly packaging or expanding the range of environmentally sustainable products. Moreover, there are important implications also for NGOs engaged in fair-trade programs. These organizations can improve their outreach and advocacy activities by utilizing the knowledge gathered from this research. Thus, NGOs can effectively communicate the social and environmental benefits of fair-trade practices by customizing their communication tactics based on an understanding of the specific values that influence the purchasing intentions of Italian consumers toward fair-trade products.

On the other hand, this study could be helpful for policymakers. Examining cultural values and fair-trade purchase trends may help policymakers shape initiatives to highlight the importance of buying these products.

Governments may play a critical role in encouraging ethical consumerism through subsidies, tax incentives, or regulatory frameworks encouraging fair-trade practices and environmental sustainability.

Moreover, governments may foster an environment that encourages firms to adopt responsible practices and empowers consumers to make conscious decisions by coordinating legislative objectives with cultural values and consumer preferences. To sum up, a comprehensive examination of individual cultural values and fair-trade consumption may educate various stakeholders, such as governments, corporations, and marketers.

Originality of the paper. The originality of this paper lies in its focus on understanding how individual values influence the purchase intentions of fair-trade products among Italian consumers. While previous research has extensively explored factors influencing fair-trade consumption, such as attitudes, societal norms, and environmental awareness, few studies have considered the effects of individual values on consumer behavior in the fair-trade context (Robichaud & Yu, 2021; Zerbini et al., 2019; O'Connor et al., 2017). Although environmental awareness has been identified as a significant factor driving fair-trade consumption, the influence of individual values, such as personal beliefs and overarching principles, has been largely overlooked (Haj-Salem et al., 2022; Kirmani et al., 2022; Konuk, 2019). By focusing on individual values, this paper aims to fill a gap in the existing literature and provide insights into the underlying motivations behind Italian consumers' fair-trade purchasing decisions. It recognizes the importance of understanding consumer values in enhancing marketing efficacy and tailoring strategies to meet consumer needs and desires (Shaw et al., 2005; Grankvist et al., 2007).

Furthermore, even while studies on personal values and socially conscious consumption have been carried out in several nations, in Italy there is a lack of studies that intensely focus on the individual values' impact on the intention of purchasing FT products. Therefore, this paper offers a novel perspective by exploring how Italian consumers' individual values impact their fair-trade purchasing behavior, contributing to a deeper understanding of fair-trade consumption patterns within the Italian context. In conclusion, this study aims to fill this research gap and offer insightful results that might improve customized marketing plans and encourage moral and sustainable consumer behavior in the Italian market.

References

- AJZEN I. (1991), "The theory of planned behavior", *Organizational Behavior and Human Decision Processes*, vol. 50, n. 2, pp. 179-211.
- ALLEN M.W. (2001), "A Practical Method for Uncovering the Direct and Indirect Relationships Between Human Values and Consumer Purchases", *The Journal of Consumer Marketing*, vol. 18, 102
- ANDERSON J.C., GERBING D.W. (1988), "Structural equation modeling in practice: A review and recommended two-step approach", *Psychological Bulletin*, vol. 103, n. 3, pp. 411-423.
- ANDORFER V.A., LIEBE U. (2012), "Research on fair trade consumption- a review", *Journal of Business Ethics*, vol. 106, n. 4, pp. 415-435.
- BHAVSAR A., DIALLO C., ÜLKÜ M.A. (2021), "Towards sustainable development: Optimal pricing and sales strategies for retailing fair trade products", *Journal of Cleaner Production*, vol. 286, 124990.
- BELDAD A., HEGNER S. (2018), "Determinants of fair trade product purchase intention of Dutch consumers according to the extended theory of planned behaviour: The moderating role of gender", *Journal of consumer policy*, vol. 41, pp. 191-210.
- BERKI-KISS D., MENRAD K. (2022), "Ethical consumption: Influencing factors of consumer's intention to purchase Fairtrade roses", *Cleaner and Circular Bioeconomy*, vol. 2, pp. 100008.
- BINION S. (2020), "Social Protection Availability in Fair Trade: A Mixed Methods Approach", *Doctoral dissertation, Tulane University, Payson Center for International Development*.
- BLACKWELL R.D. MINIARD P.W., ENGEL J.F. (2001), *Consumer Behavior*, 9th Edition (Harcourt, New York).
- BUSALIM A., FOX G., LYNN T. (2022), "Consumer behavior in sustainable fashion: A systematic literature review and future research agenda", *International Journal of Consumer Studies*, vol. 46, n. 5, pp. 1804-1828.
- CHATZIDAKIS A., HIBBERT S., SMITH A.P. (2007), "Why people don't take their concerns about fair trade to the supermarket: the role of neutralisation", *Journal of Business Ethics*, vol. 74, n. 1, pp. 89-100.
- DE PELSMACKER P., DRIESEN L., RAYP G. (2005), "Do consumers care about ethics? Willingness to pay for fair-trade coffee", *Journal of Consumer Affairs*, vol. 39, n. 2, pp. 363-385.
- DICKSON M.A. (2000) "Personal values, beliefs, knowledge, and attitudes relating to intentions to purchase apparel from socially responsible businesses", *Clothing and Textiles Research Journal*, vol. 18, pp. 19-30
- DURGEE J.F., CONNOR G.C.O., VERYZER R.W. (1996), "Observations: Translating Values into Product Wants", *Journal of Advertising Research* Jan-Feb, pp. 90-100.
- ETHICAL CONSUMER. (2021), *Ethical consumerism report 2021: Can we consumer back better?* from: https://www.ethicalconsumer.org/sites/default/files/inline-files/EC_Market_Report_2021.pdf

- FIEDORUK M. (2021), "Fair Trade: Shortcomings and contemporary challenges", *Ekonomia-Wroclaw Economic Review*, vol. 27, n. 4, pp. 37-51.
- GOIG R.L. (2007) "Fair trade and global cognitive orientation: a focus on Spanish fair trade consumer". *International Journal of Consumer Studies*, vol. 31, pp. 468-477
- GRANKVIST G., LEKEDAL H., MARMENDAL M. (2007), "Values and eco- and fair-trade labelled products", *British Food Journal*, vol. 109, n. 2, pp. 169-181.
- HAIJ-SALEM N., AL-HAWARI M.A. (2021), "Predictors of recycling behavior: The role of self-conscious emotions". *Journal of Social Marketing*, vol. 11, n. 3, pp. 204-223.
- HAIJ-SALEM N. (2024), "Determinants of Consumer Intention to Purchase Fair Trade Products in the Middle East: Does Gender Matter?", *Social Marketing Quarterly*, 15245004241233837.
- HAIJ-SALEM N., ISHAQ M.I., RAZA A. (2022), "How anticipated pride and guilt influence green consumption in the Middle East: The moderating role of environmental consciousness", *Journal of Retailing and Consumer Services*, vol. 68, 103062.
- HOSTA M., ZABKAR V. (2021), "Antecedents of environmentally and socially responsible sustainable consumer behavior", *Journal of Business Ethics*, vol. 171, n. 2, pp. 273-293.
- JIMENEZ J.J.M., SCHWARTZ S., VINGERHOEDS R., GRABOT B., SALAÜN M. (2020), "Towards multi-model approaches to predictive maintenance: A systematic literature survey on diagnostics and prognostics", *Journal of manufacturing systems*, vol. 56, pp. 539-557.
- JOIREMAN J., DUELL B. (2007) "Self-transcendent values moderate the impact of mortality salience on support for charities". *Personality and Individual Differences*, vol. 43, pp. 779-789
- KAMAKURA W.A., NOVAK T.P. (1992), "Value-System Segmentation: Exploring the Meaning of LOV", *Journal of Consumer Research*, vol. 19, pp. 119-132.
- KIM S., LITTRELL M.A., OGLE J.L.P. (1999) "The relative importance of social responsibility as a predictor of purchase intentions for clothing" *Journal of Fashion Marketing and Management*, vol. 3, pp. 207-218
- KOSSMANN E., GOMEZ-SUAREZ M. (2019), "Words-deeds gap for the purchase of fairtrade products: A systematic literature review". *Frontiers in Psychology*, vol. 10 (December), 27005
- KRIER J.M. (2005), 'Fair Trade in Europe 2005', The Heinrich Boll Foundation, Retrieved August 1, 2006
- KRYSTALLIS A., VASSALLO M., CHRYSOHOIDIS G., PERREA T. (2008) "Societal and individualistic drivers as predictors of organic purchasing revealed through a portrait value questionnaire (PVQ)-based inventory", *Journal of Consumer Behaviour*, vol. 7, pp. 164-18
- LI G., YANG L., ZHANG B., LI X., CHEN F. (2021), "How do environmental values impact green product purchase intention? The moderating role of green trust", *Environmental Science and Pollution Research*, vol. 28, pp. 46020-46034.
- LITTRELL M., DICKSON M.A. (1997), "Alternative Trading Organizations: Shifting Paradigm in a Culture of Social Responsibility", *Human Organization*, vol. 56, pp. 344-351.
- LOWE A.C.T., CORKINDALE D.R. (1998), 'Differences in "Cultural Values" and Their Effects on Responses to Marketing Stimuli', *European Journal of Marketing*, vol. 32, pp. 843-867.
- MING J., HEUNG S., AZENKOT S., VASHISTHA A. (2021), "Accept or address? Researchers' perspectives on response bias in accessibility research". In *Proceedings of the 23rd International ACM SIGACCESS Conference on Computers and Accessibility*, pp. 1-13.
- MUSA S., GOPALAKRISHNA P. (2021), "An empirical study identifying Fair Trade consumer attributes of compassion and sustainability awareness", *Journal of Fair Trade*, vol. 3, n. 1, pp. 32-43.
- NCUBE D. (2020), "The importance of contract farming to small-scale farmers in Africa and the implications for policy: A review scenario", *The Open Agriculture Journal*, vol. 14, n. 1.
- O' CONNOR I.J. (1997), 'Using Attitudinal Segmentation to Target the Consumer', in L. R. Kahle and L. Chiagouris (eds.), *Values, Lifestyles and Psychographics* (Lawrence Erlbaum Associates, NY), pp. 231-246.
- PINNA M. (2020), "Do gender identities of femininity and masculinity affect the intention to buy ethical products?", *Psychology & Marketing*, vol. 37, n. 3, pp. 384-397.
- RAYNOLDS L.T.D. MURRAY, TAYLOR P.L. (2004), "Fair Trade Coffee: Building Producer Capacity Via Global Networks", *Journal of International Development*, vol. 16, pp. 1109-1121.
- ROBICHAUD Z., YU H. (2021), "Do young consumers care about ethical consumption? Modelling gen Z's purchase intention towards fair trade coffee", *British Food Journal*, vol. 124, n. 9, pp. 2740-2760.
- ROHAN M. J. (2000), 'A Rose by any Name? The Values Construct', *Personality and Social Psychology Review*, vol. 4, pp. 255-277
- ROKEACH M. (1973), *The Nature of Human Values*. Free Press, New York.
- SARID A., GOLDMAN D. (2021), "A value-based framework connecting environmental citizenship and change agents for sustainability - Implications for education for environmental citizenship", *Sustainability*, vol. 13, n. 8, pp. 4338.
- SCHWARTZ S.H., BILSKY W. (1990), "Toward a theory of the universal content and structure of values: Extensions and cross-cultural replications", *Journal of personality and social psychology*, vol. 5, n. 5, pp. 878.
- SCHWARTZ S.H. (1992), "Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries", in Zanna M. (Ed.), *Advances in Experimental Social Psychology*, vol. 25, Academic Press, New York, NY, pp. 1-65.
- SELLARE J., MEEMKEN E.M., QAIM M. (2020), "Fairtrade, agrochemical input use, and effects on human health and the environment", *Ecological economics*, vol. 176, 106718.
- SHAVER J., YAN R.N. (2022), "Examining sustainable consumption behaviors through the mass customization context: emotional product attachment and environmental attitude perspectives", *Journal of Sustainability Research*, vol. 4, n.3.
- SHAW D., SHIU E. (2002), "The role of ethical obligation and self-identity in ethical consumer choice", *International Journal of Consumer Studies*, vol. 26, n. 2, pp. 109-116.
- SHAW D., GREHAN E., SHIU E., HASSAN L., THOMSON J. (2005), "An exploration of values in ethical consumer decision making", *Journal of Consumer Behaviour*, vol. 4, n. 3, pp. 185-200.
- STEENHAUT S., KENHOVE P.V. (2006) "An empirical investigation of the relationship among a consumer's personal values, ethical ideology and ethical beliefs". *Journal of Business Ethics*, vol. 64, pp. 137-155

- STRONG C. (1997), "The Problems of Translating Fair Trade Principles into Consumer Purchase Behavior", *Marketing Intelligence and Planning*, vol. 15, n. 32.
- SÜRÜCÜ L., MASLAKÇI A. (2020), "Validity and reliability in quantitative research", *Business & Management Studies: An International Journal*, vol. 8, n. 3, pp. 2694-2726.
- TOBON S., LUNA-NEMECIO J. (2021), "Complex thinking and sustainable social development: Validity and reliability of the complex-21 scale", *Sustainability*, vol. 13, n. 12, pp. 6591.
- WANG E.S.T., CHOU C.F. (2020), "Norms, consumer social responsibility and fair trade product purchase intention", *International Journal of Retail & Distribution Management*.
- WILLIAMS R. (1983), *Culture & Society: 1790-1950*, Columbia University Press, New York, NY
- ZERBINI C., VERGURA D.T., LATUSI S. (2019), "A new model to predict consumers' willingness to buy fair-trade products", *Food research international*, vol. 122, pp. 167-173.

The story that only circular products can tell: Empowering consumers through background information

SHRIPATHY SWAMINATHAN¹ VINICIO DI IORIO² FRANCESCO TESTA³

Abstract

Used clothes have a story to tell, carrying with them the essence of their previous lives. Whether second-hand or remanufactured, clothes passed down from someone else entail something special, embodying not just a product, but a narrative. Literature suggests the need for more value-based studies on consumer behavior, such as satisfaction and perceived quality, especially in the post-purchase stage of circular economy products. One less-explored value-based attribute is the concept of provenance, where the impact of the prior owner of an item remains largely unexplored. Hence, the primary objective of this study is to analyze the impact of provenance effect on consumers' purchase intentions, focusing on its inherent value in used clothing, such as remanufactured or second-hand products. To study these effects, two between-subject experiments were conducted in consecutive years. The first part looked at how product circularity and provenance interact with the presence of blockchain technology. The second part, inspired by the initial findings, focused solely on the relationship between product circularity and the provenance effect. Our analysis from both studies offers insights into consumer purchase intentions and how they perceive the value of circular products. Through the insights gained, this study aims to provide guidance for developing a new strategy to enhance the longevity and circularity of used products in the market.

Keywords: circular economy; sustainable consumption; fast fashion; provenance effect; consumer purchase intention; second-hand products

Framing of the research. Over the years, there has been a growing focus on the Circular Economy as a solution to replace the linear consumption model. However, with each market advancement comes new challenges. Despite progress in technology and economic production, consumption rates have paradoxically increased, particularly evident in the fast fashion phenomenon, doubling the industry's size in the past decade. Various solutions have been proposed, but more consumer focused strategies are needed to achieve sustainability goals. This study addresses the need for value-based solutions to enhance circularity, especially on the consumer side. It ventures into the heart of the circular economy, pivoting from the traditional emphasis on technical qualities such as material composition and product durability (Machado et al., 2019; Testa et al., 2021) to explore the profound, intangible aspects imbued within circular goods. Highlighting the unique value propositions that Kirchherr, Reike, & Hekkert (2017) noted, it investigates the environmental benefits, the influence of brand image (Kim & Jang, 2016), the power of product history, and the innovative transparency offered by blockchain technology (Morkunas et al., 2019). Through recognizing the regenerative nature of circular products, the study delves into how various elements—including brand recognition, perceived uniqueness (Tian et al., 2001; Franke & Schreier, 2008), meaningfulness (Im et al., 2013), and the stories of previous ownership—inform consumer preferences and purchase intentions. Drawing on insights from Confente, Scarpi, & Russo (2020) and Magnier, Mugge, & Schoormans (2019), it seeks to elucidate the complex motivations that draw consumers towards circular products, proposing hypotheses on the profound impacts of product type (remanufactured vs. second-hand) and the depth of information available on consumer perceptions and intentions.

Purpose of the paper. The primary objective of this study is to transcend the conventional linear model of consumption and facilitate the transition towards circularity within the fast-growing market. While extant research predominantly delves into the production facet to promote circularity, it's time to spin the wheel towards exploring the consumption side of the cycle. Recognizing consumers as pivotal actors, we have undertaken to delve into the multifaceted motivations underpinning consumption decisions of emotion-valuing primates. The subsequent paragraphs delineate and explains the chosen parameters of this study, contextualized within existing relevant scholarly discourse.

¹ Sant'Anna School of Advanced Studies, Pisa
e-mail: shripathy.swaminathan@santannapisa.it

² Sant'Anna School of Advanced Studies, Pisa
e-mail: vinicio.diiorio@santannapisa.it

³ Sant'Anna School of Advanced Studies, Pisa
e-mail: francesco.testa@santannapisa.it

Beyond technical aspects of circular products

The circular economy promotes the principles of reducing, reusing, recycling, and recovering materials in both production and consumption processes to minimize environmental harm (Kirchherr, Reike, & Hekkert, 2017). In essence, the regenerative approach of the circular economy posits that items that are repurposed or recycled offer unique value propositions to consumers. While some studies have delved into what drives consumer interest in such products (Confente, Scarpi, & Russo, 2020; Magnier, Mugge, & Schoormans, 2019; Testa, Gusmerotti, Corsini, & Bartoletti, 2022), the focus has predominantly been on their perceived technical qualities, including the composition of materials, perceived quality, and attractiveness (Machado, Almeida, Bollick, & Bragagnolo, 2019; Testa, Di Iorio, Cerri, & Pretner, 2021). For example, recent findings suggest that while consumers highly value and are inclined to buy second-hand items made from recycled plastics, concerns about plastic reduce the perceived value of these products (Testa et al., 2022). There is an ongoing interest in researching second-hand products, particularly those of well-known brands (De Angelis et al., 2017; Testa et al., 2022), as a brand embodies the beliefs and perceptions that significantly influence consumer behavior (Kim & Jang, 2016). Specifically, a favorable brand image can motivate consumers to prefer its products or services over those of competitors, even if the products are constructed from recycled materials (Testa et al., 2022). However, the effect on final purchasing decision of products entailing different types of regenerative approaches is yet to be assessed.

H1: The type of circular product (remanufactured vs. second-hand) has a significant positive effect on consumers' purchase intention.

Uniqueness, meaningfulness, and purchase intention of circular products: uncharted waters

The decision-making process of consumers is swayed by deeper, non-tangible elements such as uniqueness and meaningfulness. Recognizing their role in shaping purchase intentions can enable companies to fine-tune their marketing approaches and product line-ups. Uniqueness pertains to how a product or service stands out; it is defined as "the extent to which a consumer perceives a product as being distinct from others in the same category" (Tian et al. 2001, p.95). Studies on perceived uniqueness in tailor-made products suggest that beyond just aesthetic and functional suitability, perceived uniqueness adds distinctly to the utility experienced by customers, particularly for those seeking a sense of uniqueness (Franke & Schreier, 2008). Additionally, Hagtvæd and Patrick (2008) demonstrated that products perceived as unique could elevate their perceived value and spur greater purchase intent. Their findings indicated that between two options, consumers showed a preference for the unique item over the commonplace one, even at a higher cost, underscoring uniqueness as a potent strategy for product differentiation and enhancing purchase intentions.

Meaningfulness, on the other hand, relates to how personally significant or relevant a product feels to a consumer in terms of its suitability and utility (Im et al., 2013). Research into meaningfulness suggests that creating distinction through meaningfulness leads to higher customer satisfaction, as products that are more meaningful more effectively meet consumers' needs and expectations (Im and Workman, 2004; Kim et al., 2013). Further studies into the role of consumption-supportive packaging functionality indicate that perceived product meaningfulness is a key factor in understanding its positive influence on purchase intention (Im et al., 2013). Therefore, products that strike a chord of both uniqueness and meaningfulness with consumers are seen as more valuable and fulfilling, increasing the likelihood of purchase. Yet, the academic community has not extensively explored these aspects in the context of circular products, including both second-hand and remanufactured items.

H2: The type of circular product (remanufactured vs. second-hand) has a significant positive effect on meaningfulness and uniqueness.

Leveraging blockchain technology to securing product's information

Conveying information to the final consumer is a delicate endeavor. Akin to a drug prescription, its effectiveness largely depends on providing the right amount of information and trust towards such information. Regarding the former aspect, literature is adamant in highlighting the risk of information overload (Gross, 2014; Hu and Krishen, 2019). On the other hand, trust is much more subtle and challenging to convey effectively, as much as requiring third-party, independent certifications (Testa et al., 2020). Especially when dealing with sustainable, circular products, the risk of greenwashing looms on the horizon (Garrido et al., 2020). Therefore, companies strive to catch up with the latest technology to show accountable information. Blockchain technology (BT) serves this purpose admirably. Specifically, high-end companies, whose products' value comes primarily from the unseen—such as the quality of the materials involved, the craftsmanship, etc.—are secured and then provided through a specific product ID (Morkunas et al., 2019). An example of this is how LVMH, Prada, and Cartier (part of Richemont) have collaborated to create the Aura Blockchain Consortium, a global luxury blockchain initiative designed to enhance transparency and traceability for luxury items. This platform matches product IDs with client IDs, allowing consumers to access a product's history and proof of authenticity at every step of its lifecycle. Brands like Hublot, Bvlgari, and Louis Vuitton are already active on Aura, each developing unique experiences tailored to their products and customer expectations, while ensuring the highest standards of data privacy and security (LVMH, 2021). Nonetheless, background information might be relevant even when purchasing second-hand or remanufactured products (Kessous et al., 2019). Specifically, its benefits are twofold: pragmatic and emotional. The former refers to concerns over scams, so it can mitigate scams and connect the past and next owner in a sort of intelligible human bond, the value of which, though, remains largely unexplored.

H3a: The encryption of owner information using blockchain technology can affect the perceived meaningfulness and uniqueness of circular clothing.

H3b: The encryption of owner information using blockchain technology can have a significant positive effect on consumers' purchase intention.

Uncovering the hidden value of used products

It is somewhat unexpected that research has yet to delve into a unique characteristic of handcrafted items that are neither remade nor recycled: the history of their previous ownership. Apart from technical attributes, there's a compelling case to be made that a product's backstory—its provenance—might influence its perceived worth. The significance of provenance is well-acknowledged in the realm of antiques and artwork purchases, as outlined by Feigenbaum and others (2012). Typically, such items accrue value through their historical lineage and the narratives of their past owners. Yet, the impact of provenance on more everyday consumer goods remains ambiguous. Conventional wisdom often posits that resale items depreciate in value. However, preliminary findings suggest that even ordinary products can appreciate in value, as observed in studies of the secondary sneaker market (Slaton & Pookulangara, 2022). This inconsistency within scholarly discussions warrants further exploration. We posit that an underappreciated aspect lending significance to remanufactured goods is the story of their origin—essentially, the narrative of provenance they carry. Storytelling is a fundamental human experience that adds perceived value to objects. Thus, we investigate the intrinsic value circular products may hold, focusing on items with a history of previous ownership, including both second-hand and remanufactured goods. These items have been part of someone else's life—worn, experienced, and imbued with personal memories. In essence, they bear a connection that extends beyond the physical, crafting a personal narrative. Our research then is dedicated to revealing the intrinsic worth embedded in pre-owned apparel.

H4a: Information about the provenance of a product, specifically the status of the previous owner, significantly affects consumers' purchase intentions when purchasing circular products.

H4b: Only specific types of provenance information, relating to the previous owner's altruism or self-centeredness, influence the perceived value and purchase intention of circular products.

Methodology. Through a funnel process, we designed two key studies to test our hypotheses. Study 1 focuses on a broad, cross-country sample of respondents, covering more generic aspects related to second-hand products, blockchain technology (BT), and the provenance effect, over a few dependent variables such as meaningfulness, uniqueness, and eventually purchase intention. Study 2 delves into background information by exploring on a smaller yet still cross-country scale, different connotations of this kind of information over the same dependent variables.

Study 1

Setup

The main purpose of Study 1 was to examine how the embedded value of circular clothing influences consumers' purchase intention when the owner's information is encrypted using blockchain technology. In order to do so, we employed a cross-sectional design by conducting a 3x2 between-subject experiment with different information settings. We used a three-factor design: Factor 1 focused on status provenance (socialite v/s no-frills previous owner), Factor 2 on the type of circular product (remanufactured v/s second-hand), and Factor 3 on the blockchain technology (encrypted v/s no encrypted information). Each factor was manipulated using two similar short vignettes featuring a simple scarf but with distinct information. Thus, six different information settings were presented based on the factors considered. Participants were randomly assigned to one of the scenarios, and their responses were observed. To ensure the study's robustness, each treatment was assigned to a comparable number of respondents in a proportional manner.

3.1.2 Variables and data collection instruments

A multi-section survey served as the data collection instrument, initially gathering respondents' demographic data and general information about their clothing purchases. Tailored to the specific experiment shown, the survey included four different questions for assessing the manipulation conducted in the experiment. It followed sections with items related to uniqueness (Franke & Schreier, 2008), meaningfulness (Vogt, Jenny, & Bauer, 2013), and purchase intention (Chen & Chang, 2013). Respondents rated these statements on a 5-point Likert scale for agreement. All items were adapted to suit the study's purpose.

3.1.3 Sample

The sample population consists of consumers from five European countries: France, Germany, Italy, Poland, and Spain. Administered in January 2022, the survey was conducted through an independent online survey company to minimize sampling errors and reach a broader respondent base. The survey targeted pre-registered users on the platform, inviting them based on established socio-demographic quotas and meeting initial filters. Invitations were sent via email, providing participants with a link to the online platform for questionnaire completion. The compilation process included automatic checks to prevent missing, inconsistent, low-quality, or suspiciously rapid responses, potentially from bots. Respondents received incentives in the form of accumulated points, which can later be converted into digital rewards. At the end, we received 5124 complete responses as our random sample considered in this study. Table 1 represents the descriptive details of the sample population.

Table 1: Descriptive Statistics of Study 1

Description	Total
Total Responses	5124
Country	
Denmark	1018
Spain	1016
France	1012
Italy	1053
Poland	1025
Gender	
Male	2577
Female	2547
Age	
18 - 24	556
25 - 34	918
35 - 44	1034
45 - 54	1083
55 - 70	1533
Relationship Status	
In Relationship - LiveIn	1518
In Relationship - Non LiveIn	439
Single	861
Marriage - LiveIn	447
Marriage - Non LiveIn	1859
Education	
No	129
Degree or higher	545
Elementary diploma or nothing	375
Middle school	1941
Middle school without diploma	702
University without degree	1432
Presence of Senior citizen	1558
No Senior Citizen in house	3566
Presence of Junior citizen	2152
No Junior Citizen in house	2972

Study 2 Setup

The purpose of Study 2 was to validate, endorse, and explore more on the results obtained from Study 1. With respect to the results of study 1, study 2 was designed focusing specifically on the first two factors namely, type of circularity and status provenance. A slight modification was made to the presentation of Factor 1, which now specifically centers on comparing altruistic and self-centered previous owner (status provenance). Factor 2 remains unchanged, focusing on comparing the remanufactured and second-hand (type of circular product). The rest of the experimental setup remained consistent.

Variables and data collection instruments

Similar to Study 1, a multi-section survey was employed to gather necessary data. In addition to the variables from Study 1—uniqueness (Franke & Schreier, 2008), meaningfulness (Vogt, Jenny, & Bauer, 2013), and purchase intention (Chen & Chang, 2013)—three additional sections were included. These new sections covered word of mouth (Skarmeas, D., & Leonidou, C. N., 2013), perceived quality (Yoo, B., & Donthu, N., 2001), and consumer's intention to examine the property (Di Iorio et al., 2023). Furthermore, manipulations were verified with respective checks. Respondents rated these statements on a 5-point Likert scale for agreement, with all items adapted to suit the study's purpose.

Sample

Following the same protocols, Study 2 was conducted in January 2023 with random samples from Germany and Italy. We received a total of 2046 complete responses, with 1027 from Germany and 1019 from Italy. Table 2 provides descriptive details about the sample population.

Table 2: Descriptive Statistics of Study 2

	Responses
Total	2046
Country	
Germany	1027
Spain	1019
Gender	
Male	1000
Female	1046
Age	
18-24	188
25-34	380
35-44	381
45-54	438
55-70	659
Minors	
Yes	796
No	1250
Education	
Elementary license or none at all	13
Junior high school diploma	233
Middle-school diploma	984
Degree	651
Master's degree/postgraduate doctorate	165
Income	
Highest	70
High	135
Medium-high	321
Media	751
Medium-low	394
Low	209
Very low	90
Don't know/prefer not to indicate	76
Zone	
zone1	321
zone2	435
zone3	259
zone4	369
zone5	101
zone6	21
zone7	105
zone8	235
zone9	62
zone10	74
zone11	64

Results

Study 1 Results

As a first step, manipulation checks were conducted to verify the obtained sample. A contingency table was formed with respect to the manipulation check questions and each of the experiments and ANOVA was performed. The ANOVA results ($p < 0.00$) showed significant differences among the levels of the experiment factor. Hence, it appears to be effective in distinguishing between the experimental conditions.

Following the manipulation check, a series of validations are performed on the obtained sample in order to proceed with the factorial analysis. It included Bartlett's Sphericity Test to check the correlation between variables for factorial analysis ($p\text{-value} < 0.05$), Kaiser-Meyer-Olkin Test to evaluate the data suitability (overall MSA 0.97), Cronbach's alpha to measure the internal consistency reliability ($\alpha = 0.953$), Composite Reliability to evaluate the reliability of latent constructs (0.95), and finally, VIF to measure the multicollinearity among the considered variables (< 5) (Tabachnick & Fidell, 2007). Based on the results obtained, the data were clearly suitable for factor analysis. In general, the factor loadings ranged from 0.75 to 0.93 which is above the required threshold of 0.6 (Field, 2009; Yong, A. G., & Pearce, S., 2013) and their Cronbach alpha above 0.9.

Further, with respect to the latent constructs of the study, a model was created for Confirmatory Factorial Analysis. The fit of the model was verified which provided significant results to conclude ($CFI=0.981$, $TLI=0.978$, $RMSEA=0.048$). Table 3 represents the CFA results of the fitted model.

Table 3: Confirmatory Factorial Analysis Results of Study 1

Estimator						ML
Optimization method						NLMINB
Number of model parameters						39
Number of observations						5124
Model Test User Model:						
Test statistic						1710.474
Degrees of freedom						132
P-value (Chi-square)						0
Model Test Baseline Model:						
Test statistic						83022.698
Degrees of freedom						153
P-value						0
User Model versus Baseline Model:						
Comparative Fit Index (CFI)						0.981
Tucker-Lewis Index (TLI)						0.977
Loglikelihood and Information Criteria:						
Loglikelihood user model (H0)						-121616.362
Loglikelihood unrestricted model (H1)						-120761.125
Akaike (AIC)						243310.724
Bayesian (BIC)						243565.85
Sample-size adjusted Bayesian (SABIC)						243441.921
Root Mean Square Error of Approximation:						
RMSEA						0.048
90 Percent confidence interval - lower						0.046
90 Percent confidence interval - upper						0.05
P-value H_0: RMSEA <= 0.050						0.912
P-value H_0: RMSEA >= 0.080						0
Standardized Root Mean Square Residual:						
SRMR						0.031
Parameter Estimates:						
Standard errors						Standard
Information						Expected
Information saturated (h1) model						Structured
Latent Variables:						
	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
m =~						
m1	1.324	0.019	68.816	0	1.324	0.803
m2	1.358	0.018	76.743	0	1.358	0.861
m3	1.342	0.018	74.359	0	1.342	0.844
m4	1.345	0.018	75.362	0	1.345	0.851
m5	1.348	0.018	74.304	0	1.348	0.844
m6	1.353	0.018	76.144	0	1.353	0.857
m7	1.315	0.019	70.546	0	1.315	0.816
m8	1.182	0.019	62.78	0	1.182	0.754
m9	1.248	0.018	68.145	0	1.248	0.798
u =~						
u1	1.084	0.014	79.024	0	1.084	0.885
u2	1.045	0.014	73.808	0	1.045	0.848
u3	1.004	0.014	73.533	0	1.004	0.846
u4	0.937	0.014	69.159	0	0.937	0.813
pint =~						
pi1	1.138	0.014	81.111	0	1.138	0.891
pi2	1.107	0.014	76.648	0	1.107	0.861
pi3	1.134	0.014	79.998	0	1.134	0.884
pi4	1.136	0.014	80.971	0	1.136	0.89
pi5	1.148	0.014	82.749	0	1.148	0.902
Covariances:						
	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
m =~						
u	0.581	0.01	56.562	0	0.581	0.581
pint	0.595	0.01	60.855	0	0.595	0.595
u =~						
pint	0.721	0.008	92.603	0	0.721	0.721
Variances:						
	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.m1	0.966	0.021	46.161	0	0.966	0.355
.m2	0.643	0.015	43.553	0	0.643	0.259
.m3	0.726	0.016	44.509	0	0.726	0.287
.m4	0.686	0.016	44.129	0	0.686	0.275
.m5	0.735	0.017	44.529	0	0.735	0.288
.m6	0.662	0.015	43.811	0	0.662	0.266
.m7	0.866	0.019	45.713	0	0.866	0.334
.m8	1.06	0.022	47.387	0	1.06	0.432
.m9	0.891	0.019	46.321	0	0.891	0.364
.u1	0.325	0.009	34.504	0	0.325	0.217
.u2	0.426	0.011	39.208	0	0.426	0.281
.u3	0.4	0.01	39.404	0	0.4	0.284
.u4	0.449	0.011	42.002	0	0.449	0.339
.pi1	0.337	0.008	40.432	0	0.337	0.206
.pi2	0.427	0.01	43.076	0	0.427	0.259
.pi3	0.361	0.009	41.203	0	0.361	0.219
.pi4	0.338	0.008	40.534	0	0.338	0.208
.pi5	0.303	0.008	39.12	0	0.303	0.187
M	1				1	1
U	1				1	1
pint	1				1	1

*M = Meaningfulness, U = Uniqueness, pi & pint = Purchase Intention

As the final step, Ordinal Logistic Regression was performed to understand the influence and interaction of the considered variables. Table 3 shows that the model fits well for purchase intention and uniqueness, but only Lipsitz test results are significant for meaningfulness. Table 4 displays the Pseudo R-square since R-square isn't applicable in OLR. Table 5 presents parameter estimates, crucial for understanding the association between variables. The type of circular

product is significant for meaningfulness ($p < 0.00$), uniqueness ($p < 0.001$), and purchase intention ($p < 0.00$). Status provenance is significant only for purchase intention ($p < 0.00$), while blockchain encryption isn't significant for any variables. However, the interaction term of provenance and type of circularity is significant for all response variables: purchase intention ($p < 0.03$), meaningfulness ($p < 0.03$), and uniqueness ($p < 0.005$).

Considering the control variables of study 1, among the different countries, Spain, Italy, and Poland show significance with all three response variables, while France is significant only for uniqueness. Gender and Education level are significant only for meaningfulness. The presence of senior family members isn't significant, but the presence of junior members is significant for all response variables.

Table 4: Goodness of fit of study 1

	DV1 - Purchase Intention	DV2 - Meaningfulness	DV3 - Uniqueness
Lipsitz goodness of fit test for ordinal response models			
LR statistics	4.0808	20	7.3589
df	9	9	9
p-value	0.906	0.1791	0.5998
Hosmer and Lemeshow test (multinomial model)			
X-squared	21.559	43.419	21.47
df	16	16	16
p-value	0.158	0.0002416	0.1612
Pulkstenis-Robinson chi-squared test			
X-squared	35.287	45.285	34.925
df	26	26	26
p-value	0.1056	0.01095	0.1133

Table 5: Pseudo R Square of Study 1 models

	DV1 - Purchase Intention	DV2 - Meaningfulness	DV3 - Uniqueness
McFadden	2.62E-02	2.86E-02	2.86E-02
Cox and Snell	4.93E-02	4.54E-02	4.54E-02
Nagelkerke	5.77E-02	5.65E-02	5.65E-02

Table 6: OLR results of study 1

STUDY 1 - DV1 - Purchase Intention				
	Value	Std. Error	t value	p value
Secondhand	-0.60928028	0.11419533	-5.3354222	9.53E-08
Provenance	-0.41967678	0.11452164	-3.6646068	2.48E-04
No-Encryption	-0.15830146	0.11676839	-1.3556876	1.75E-01
Country				
Spain	0.55069896	0.09087276	6.0601107	1.36E-09
France	-0.14489078	0.08699274	-1.6655502	9.58E-02
Italy	0.43000293	0.0873328	4.923728	8.49E-07
Poland	0.47301886	0.09017816	5.2453816	1.56E-07
Gender				
Female	0.07523932	0.05570849	1.3505897	1.77E-01
Age				
25 - 34	-0.10059665	0.1091351	-0.9217626	3.57E-01
35 - 44	-0.42653669	0.10722555	-3.9779388	6.95E-05
45 - 54	-0.39521059	0.10780547	-3.6659603	2.46E-04
55 - 70	-0.20369364	0.10665149	-1.9098997	5.61E-02
Relationship Status				
In Relationship - Non LiveIn	-0.13363412	0.10511968	-1.271257	2.04E-01
Single	0.13250966	0.08685736	1.5256008	1.27E-01
Marriage - LiveIn	0.33330108	0.11078185	3.0086254	2.62E-03
Marriage - Non LiveIn	0.28030458	0.07563477	3.7060281	2.11E-04
Education				
Degree or higher	-0.20153625	0.19498979	-1.0335733	3.01E-01
Elementary diploma or nothing	0.05503027	0.20417714	0.2695222	7.88E-01
Middle school	-0.05627324	0.18254151	-0.3082764	7.58E-01
Middle school without diploma	0.07158394	0.19161315	0.3735857	7.09E-01
University without degree	-0.04042073	0.1846262	-0.2189328	8.27E-01
No Senior Citizen in house	-0.01104519	0.06244903	-0.1768673	8.60E-01
No Junior Citizen in house	-0.32705466	0.06461598	-5.0615138	4.16E-07
Secondhand:Provenance	0.34566556	0.15855099	2.1801539	2.92E-02
Secondhand: No-Encryption	0.20620213	0.15970782	1.291121	1.97E-01
Provenance: No-Encryption	0.19603545	0.16064791	1.2202801	2.22E-01
Secondhand:Provenance: No-Encryption	-0.21417368	0.22262124	-0.9620541	3.36E-01
Low Medium	-2.06599068	0.23133187	-8.9308517	0.00E+00
Medium High	-0.81285702	0.22965339	-3.5394949	4.01E-04

STUDY 1 - DV2 - Meaningfulness				
	Value	Std. Error	t value	p value
Secondhand	-0.55906	0.112718	-4.95982	7.06E-07
Provenance	-0.1687	0.11305	-1.49227	1.36E-01
No-Encryption	-0.16717	0.112595	-1.48468	1.38E-01
Country				
Spain	0.208046	0.091387	2.276541	2.28E-02
France	-0.0876	0.090339	-0.96964	3.32E-01
Italy	0.215863	0.089355	2.415789	1.57E-02
Poland	0.303984	0.091915	3.307223	9.42E-04
Gender				
Female	-0.1997	0.056467	-3.5366	4.05E-04
Age				
25 - 34	0.161783	0.108382	1.492708	1.36E-01
35 - 44	0.051745	0.107566	0.48105	6.30E-01
45 - 54	0.23159	0.108226	2.139874	3.24E-02
55 - 70	0.680782	0.108095	6.297976	3.02E-10
Relationship Status				
In Relationship - Non LiveIn	-0.14057	0.108425	-1.29648	1.95E-01
Single	0.022686	0.087999	0.257801	7.97E-01
Marriage - LiveIn	-0.16114	0.109998	-1.46492	1.43E-01
Marriage - Non LiveIn	0.193222	0.077464	2.494347	1.26E-02
Education				
Degree or higher	0.486679	0.201656	2.413407	1.58E-02
Elementary diploma or nothing	0.449881	0.209319	2.149265	3.16E-02
Middle school	0.735865	0.188739	3.898841	9.67E-05
Middle school without diploma	0.653219	0.197246	3.311701	9.27E-04
University without degree	0.953954	0.190918	4.996668	5.83E-07
No Senior Citizen in house	0.000626	0.06364	0.009844	9.92E-01
No Junior Citizen in house	-0.19378	0.065457	-2.96048	3.07E-03
Secondhand:Provenance	0.496463	0.159701	3.108695	1.88E-03
Secondhand: No-Encryption	0.475089	0.159064	2.986774	2.82E-03
Provenance: No-Encryption	0.195143	0.159345	1.224658	2.21E-01
Secondhand:Provenance: No-Encryption	-0.571	0.225351	-2.53384	1.13E-02
Low Medium	-2.72057	0.242276	-11.2292	0.00E+00
Medium High	0.624853	0.233458	2.676512	7.44E-03

STUDY 1 - DV3 - Uniqueness				
	Value	Std. Error	t value	p value
Secondhand	-0.6921	0.112182	-6.16947	6.85E-10
Provenance	-0.06531	0.115885	-0.56359	5.73E-01
No-Encryption	-0.10634	0.114907	-0.9254	3.55E-01
Country				
Spain	0.427318	0.09296	4.596816	4.29E-06
France	-0.1784	0.089071	-2.00294	4.52E-02
Italy	0.288739	0.088959	3.245737	1.17E-03
Poland	0.228529	0.090967	2.512227	1.20E-02
Gender				
Female	-0.03861	0.056556	-0.68263	4.95E-01
Age				
25 - 34	0.114083	0.110884	1.028853	3.04E-01
35 - 44	-0.08121	0.109304	-0.74302	4.57E-01
45 - 54	-0.21449	0.108955	-1.96862	4.90E-02
55 - 70	0.006771	0.108234	0.062562	9.50E-01
Relationship Status				
In Relationship - Non LiveIn	-0.15021	0.107663	-1.39514	1.63E-01
Single	0.028141	0.088383	0.318392	7.50E-01
Marriage - LiveIn	0.171232	0.112419	1.523159	1.28E-01
Marriage - Non LiveIn	0.188256	0.076787	2.451655	1.42E-02
Education				
Degree or higher	-0.24475	0.203772	-1.20112	2.30E-01
Elementary diploma or nothing	0.057772	0.213614	0.270449	7.87E-01
Middle school	-0.05843	0.191531	-0.30506	7.60E-01
Middle school without diploma	-0.06075	0.200224	-0.30342	7.62E-01
University without degree	-0.05703	0.193588	-0.29459	7.68E-01
No Senior Citizen in house	-0.01542	0.063579	-0.24249	8.08E-01
No Junior Citizen in house	-0.31129	0.065926	-4.72174	2.34E-06
Secondhand:Provenance	0.473794	0.160181	2.957868	3.10E-03
Secondhand: No-Encryption	0.245753	0.157406	1.561269	1.18E-01
Provenance: No-Encryption	0.154379	0.163535	0.944012	3.45E-01
Secondhand:Provenance: No-Encryption	-0.27064	0.226161	-1.19667	2.31E-01
Low Medium	-2.31222	0.239418	-9.65769	0.00E+00
Medium High	-0.78268	0.236964	-3.30295	9.57E-04

To summarize the obtained results, the findings of the study imply that secondhand products and status provenance relates to higher purchase intention among the consumers. Secondhand products entail higher perceived values among

consumers in terms of both meaningfulness and uniqueness, no matter the provenance status. Meanwhile, the third factor of the study - encryption using blockchain technology - seems to have no impact in any of the attributes. Interestingly, results obtained from the interaction terms reveal that the customers' purchase intention and the perceived uniqueness and meaningfulness of the circular product depends on both the type of circular product as well as the provenance information shared.

Study 2 Results

Similar to study 1, ANOVA was performed for manipulation check which provided effective ($p < 0.00$). Following the manipulation check, a series of validations were performed including Bartlett's Sphericity Test to check the correlation between variables for factorial analysis ($p\text{-value} < 0.00$), Kaiser-Meyer-Olkin Test to evaluate the data suitability (overall MSA 0.97), Cronbach's alpha to measure the internal consistency reliability ($\alpha = 0.971$), Composite Reliability to evaluate the reliability of latent constructs (0.97), and finally, VIF to measure the multicollinearity among the considered variables (< 5). As the results were positive, an exploratory factorial analysis was performed on the considered items resulting in factor loadings ranging from 0.6 to 1 above the required threshold of 0.6 (Field, 2009; Yong, A. G., & Pearce, S., 2013). Further, with respect to the latent constructs of the study, a model was created for Confirmatory Factorial Analysis. The fit of the model was verified which provided significant results to conclude ($CFI=0.958$, $TLI=0.953$, $RMSEA=0.062$). Table 7 represents the CFA results of the fitted model.

Table 7: Confirmatory Factorial Analysis Results of Study 2

Estimator	ML					
Optimization method	NLMINB					
Number of model parameters	71					
Number of observations	2046					
Model Test User Model:						
Test statistic	2940.696					
Degrees of freedom	335					
P-value (Chi-square)	0					
Model Test Baseline Model:						
Test statistic	62508.221					
Degrees of freedom	378					
P-value	0					
User Model versus Baseline Model:						
Comparative Fit Index (CFI)	0.958					
Tucker-Lewis Index (TLI)	0.953					
Loglikelihood and Information Criteria:						
Loglikelihood user model (H0)	-64831.32					
Loglikelihood unrestricted model (H1)	-63360.972					
Akaike (AIC)	129804.641					
Bayesian (BIC)	130203.919					
Sample-size adjusted Bayesian (SABIC)	129978.347					
Root Mean Square Error of Approximation:						
RMSEA	0.062					
90 Percent confidence interval - lower	0.06					
90 Percent confidence interval - upper	0.064					
P-value H_0: RMSEA <= 0.050	0					
P-value H_0: RMSEA >= 0.080	0					
Standardized Root Mean Square Residual:						
SRMR	0.041					
Parameter Estimates:						
Standard errors	Standard					
Information	Expected					
Information saturated (h1) model	Structured					
Latent Variables:						
	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
meaning =~						
c1	0.805	0.021	38.38	0	0.805	0.74
c2	0.879	0.019	45.569	0	0.879	0.832
c3	0.912	0.02	46.287	0	0.912	0.84
c4	0.88	0.02	43.336	0	0.88	0.805
c5	0.911	0.021	43.099	0	0.911	0.802
c6	0.9	0.02	44.88	0	0.9	0.824
c7	0.852	0.021	40.561	0	0.852	0.77
c8	0.741	0.022	33.165	0	0.741	0.664
unique =~						
u1	1.226	0.024	52.041	0	1.226	0.898
u2	1.22	0.023	51.92	0	1.22	0.897
u3	1.267	0.023	55.663	0	1.267	0.933
u4	1.228	0.023	52.36	0	1.228	0.901
purchInt =~						
pi1	1.266	0.024	53.055	0	1.266	0.906
pi2	1.249	0.023	53.533	0	1.249	0.911
ni3	1.272	0.023	55.056	0	1.272	0.926

pi4	1.269	0.023	55.312	0	1.269	0.928
pi5	1.274	0.024	53.733	0	1.274	0.913
Covariances:						
	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
meaning ~~						
unique	0.631	0.015	42.875	0	0.631	0.631
purchInt	0.643	0.014	45.203	0	0.643	0.643
unique ~~						
purchInt	0.838	0.008	109.646	0	0.838	0.838
Variances:						
	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
.c1	0.534	0.018	29.334	0	0.534	0.452
.c2	0.345	0.013	27.06	0	0.345	0.308
.c3	0.347	0.013	26.721	0	0.347	0.294
.c4	0.421	0.015	27.953	0	0.421	0.352
.c5	0.461	0.016	28.035	0	0.461	0.357
.c6	0.384	0.014	27.36	0	0.384	0.322
.c7	0.499	0.017	28.806	0	0.499	0.408
.c8	0.695	0.023	30.262	0	0.695	0.559
.u1	0.361	0.014	25.862	0	0.361	0.194
.u2	0.363	0.014	25.95	0	0.363	0.196
.u3	0.238	0.011	22.015	0	0.238	0.129
.u4	0.349	0.014	25.621	0	0.349	0.188
.pi1	0.349	0.013	27.212	0	0.349	0.179
.pi2	0.32	0.012	26.916	0	0.32	0.17
.pi3	0.271	0.011	25.752	0	0.271	0.143
.pi4	0.26	0.01	25.515	0	0.26	0.139
.pi5	0.325	0.012	26.783	0	0.325	0.167
Meaningfulness	1				1	1
Uniqueness	1				1	1
Purchase Intention	1				1	1

*M = Meaningfulness, U = Uniqueness, pi & pint = Purchase Intention

Ultimately, Ordinal Logistic Regression was performed on the study model. Similar to study 1, tests to understand the model fit and to obtain their Pseudo R Square values were performed and represented in Table 8 and 9 respectively. Finally, the estimate values to understand the relationship between the response and explanatory variables are highlighted in Table 10.

Confirming the results of study 1, study 2 also proves that the type of circular product factor is statistically significant with meaningfulness ($p < 0.00$), uniqueness ($p < 0.001$), and purchase intention ($p < 0.00$). Contrastingly, status provenance factor showed no significant effects. In addition, the interaction between these factors was also not significant. Considering the control variables of the study, gender showed significance to purchase intention and uniqueness but not for meaningfulness. Age group is strongly related only to meaningfulness. Similarly, family size has strong significance in purchase intention but with less impact on meaningfulness and uniqueness. The presence of minors in the family shows significance with purchase intention and uniqueness. Lastly, respondent's income level has a strong relationship with all the response variables.

Table 8: Goodness of fit of study 2

	DV1 - Purchase Intention	DV2 - Meaningfulness	DV3 - Uniqueness
Lipsitz goodness of fit test for ordinal response models			
LR statistics	15.008	10.917	19.814
df	9	9	9
p-value	0.907	0.2815	0.0191
Hosmer and Lemeshow test (multinomial model)			
X-squared	22.361	14.791	22.402
df	16	16	16
p-value	0.1319	0.54	0.1307
Pulkstenis-Robinson chi-squared test			
X-squared	11.427	15.933	12.506
df	11	11	11
p-value	0.4082	0.1436	0.3269

Table 9: Pseudo R Square of Study 2 models

	DV1 - Purchase Intention	DV2 - Meaningfulness	DV3 - Uniqueness
McFadden	8.03E-02	5.92E-02	8.07E-02
Cox and Snell	1.56E-01	8.55E-02	1.56E-01
Nagelkerke	1.78E-01	1.10E-01	1.77E-01

Table 10: OLR results of study 2

STUDY 2 - DV1 - Purchase Intention				
	Value	Std. Error	t value	p value
Secondhand	-0.77096222	0.12085369	-6.3793021	1.78E-10
Selfish_Info	-0.12974446	0.12697086	-1.0218444	3.07E-01
Country				
Italy	0.16037981	0.1323633	1.2116637	2.26E-01
Gender				
Female	0.17431612	0.08814744	1.9775517	4.80E-02
Zone				
zone2	0.1459839	0.14699921	0.9930931	3.21E-01
zone3	0.1498541	0.17110107	0.8758222	3.81E-01
zone4	0.27819695	0.15594258	1.7839704	7.44E-02
zone5	0.26197013	0.24037674	1.0898314	2.76E-01
zone6	0.2501186	0.43863186	0.5702244	5.69E-01
zone7	0.02389448	0.24295389	0.0983499	9.22E-01
zone8	0.18497579	0.19465327	0.9502835	3.42E-01
zone9	0.32194378	0.29833791	1.0791246	2.81E-01
zone10	-0.32616814	0.26899241	-1.2125552	2.25E-01
zone11	0.04909987	0.29507937	0.1663955	8.68E-01
Age				
25-34	0.38206991	0.18767498	2.0358063	4.18E-02
35-44	0.29793116	0.18688945	1.5941572	1.11E-01
45-54	0.11144605	0.17762087	0.6274379	5.30E-01
55-70	0.09332182	0.17236124	0.5414316	5.88E-01
Number of habitants				
10 thousand-30 thousand	0.2722572	0.13928614	1.9546612	5.06E-02
30 thousand-100 thousand	0.11715518	0.13573186	0.8631369	3.88E-01
100 thousand-250 thousand	0.34928924	0.16873119	2.0700929	3.84E-02
250 thousand-500 thousand	0.31209018	0.20258363	1.5405499	1.23E-01
>500 thousand	0.41597734	0.14784568	2.8135914	4.90E-03
Family size in numbers				
2	0.27988916	0.13197218	2.1208194	3.39E-02
3	0.48818314	0.15369596	3.1762913	1.49E-03
4	0.34757625	0.16287265	2.1340369	3.28E-02
5	0.48815287	0.2384764	2.0469651	4.07E-02
6	0.91196804	0.43900858	2.0773354	3.78E-02
7	0.38800915	0.66961212	0.5794536	5.62E-01
8+	0.24109706	0.61631589	0.3911907	6.96E-01
Minors				
No	0.33368863	0.12194108	2.7364743	6.21E-03
Education				
Junior high school diploma	-0.21184061	0.54505313	-0.3886605	6.98E-01
Middle-school diploma	-0.27058496	0.53422791	-0.5064972	6.13E-01
Degree	0.03706448	0.53868729	0.0688052	9.45E-01
Master's degree/postgraduate doctorate	-0.54652175	0.55705411	-0.9810928	3.27E-01
Income				
High	-0.72868993	0.44550241	-1.6356588	1.02E-01
Medium-high	-1.76941988	0.41152182	-4.2996988	1.71E-05
Media	-1.99693743	0.40920517	-4.8800396	1.06E-06
Medium-low	-1.84480473	0.41792245	-4.4142274	1.01E-05
Low	-2.06763714	0.4290575	-4.8190211	1.44E-06
Very low	-2.26084196	0.45667819	-4.9506239	7.40E-07
Don't know/prefer not to indicate	-2.42277405	0.45978603	-5.2693512	1.37E-07
Secondhand:Selfish_Info	0.01322838	0.17523349	0.07549	9.40E-01
Low/Medium	-2.31847088	0.68161508	-3.4014372	6.70E-04
Medium/High	-1.17183324	0.68070719	-1.7214938	8.52E-02

STUDY 2 - DV2 - Meaningfulness				
	Value	Std. Error	t value	p value
Secondhand	-0.53776	0.140647	-3.82344	1.32E-04
Selfish_Info	0.074512	0.154164	0.483328	6.29E-01
Country				
Italy	0.002012	0.151768	0.013257	9.89E-01
Gender				
Female	0.093665	0.101234	0.925232	3.55E-01
Zone				
zone2	-0.01523	0.167346	-0.09102	9.27E-01
zone3	0.177662	0.201497	0.881711	3.78E-01
zone4	0.011914	0.178216	0.066852	9.47E-01
zone5	-0.07343	0.272188	-0.26979	7.87E-01
zone6	-0.37082	0.517449	-0.71663	4.74E-01
zone7	-0.1211	0.267661	-0.45245	6.51E-01
zone8	-0.15537	0.221466	-0.70156	4.83E-01
zone9	0.528165	0.383007	1.378995	1.68E-01
zone10	-0.57495	0.288415	-1.9935	4.62E-02
zone11	-0.41884	0.32068	-1.3061	1.92E-01
Age				
25-34	0.621642	0.213811	2.90744	3.64E-03
35-44	0.622161	0.211107	2.947143	3.21E-03

45-54	0.659459	0.200148	3.294862	9.85E-04
55-70	0.595374	0.192321	3.095728	1.96E-03
Number of habitants				
10 thousand-30 thousand	-0.02224	0.156442	-0.14215	8.87E-01
30 thousand-100 thousand	0.227597	0.158409	1.436771	1.51E-01
100 thousand-250 thousand	0.004411	0.189348	0.023298	9.81E-01
250 thousand-500 thousand	0.085111	0.230467	0.369299	7.12E-01
>500 thousand	0.062299	0.16567	0.376042	7.07E-01
Family size in numbers				
2	0.104763	0.146343	0.715871	4.74E-01
3	0.342947	0.175189	1.957584	5.03E-02
4	0.240112	0.185073	1.297393	1.94E-01
5	0.979205	0.30986	3.160149	1.58E-03
6	1.135536	0.55077	2.061726	3.92E-02
7	1.783766	1.113073	1.60256	1.09E-01
8+	0.036771	0.725785	0.050664	9.60E-01
Minors				
No	-0.09586	0.141782	-0.6761	4.99E-01
Education				
Junior high school diploma	-0.4443	0.607104	-0.73184	4.64E-01
Middle-school diploma	0.009341	0.597	0.015647	9.88E-01
Degree	0.143462	0.603019	0.237906	8.12E-01
Master's degree/postgraduate doctorate	-0.45544	0.623035	-0.731	4.65E-01
Income				
High	-1.02349	0.590149	-1.73429	8.29E-02
Medium-high	-1.92696	0.54997	-3.50376	4.59E-04
Media	-2.05646	0.549154	-3.74478	1.81E-04
Medium-low	-2.05039	0.557771	-3.67604	2.37E-04
Low	-2.1298	0.565468	-3.76644	1.66E-04
Very low	-2.36935	0.589095	-4.02202	5.77E-05
Don't know/prefer not to indicate	-2.55641	0.591871	-4.3192	1.57E-05
Secondhand:Selfish_Info	-0.34766	0.202632	-1.71572	8.62E-02
Low/Medium	-4.46642	0.827987	-5.39431	6.88E-08
Medium/High	-2.40098	0.823126	-2.9169	3.54E-03

STUDY 2 - DV3 - Uniqueness				
	Value	Std. Error	t value	p value
Secondhand	-0.86736	0.121503	-7.13863	9.43E-13
Selfish_Info	-0.13919	0.12865	-1.08196	2.79E-01
Country				
Italy	-0.16854	0.133736	-1.26021	2.08E-01
Gender				
Female	0.233407	0.088744	2.630113	8.54E-03
Zone				
zone2	0.114147	0.148216	0.77014	4.41E-01
zone3	-0.0561	0.17287	-0.3245	7.46E-01
zone4	0.36242	0.158037	2.293257	2.18E-02
zone5	0.307038	0.244908	1.253689	2.10E-01
zone6	0.453281	0.477846	0.948594	3.43E-01
zone7	0.078488	0.245649	0.319511	7.49E-01
zone8	0.044443	0.195437	0.227404	8.20E-01
zone9	0.259456	0.299408	0.866563	3.86E-01
zone10	-0.27087	0.266855	-1.01505	3.10E-01
zone11	-0.1604	0.28417	-0.56445	5.72E-01
Age				
25-34	0.343268	0.190153	1.805215	7.10E-02
35-44	0.37893	0.190577	1.988328	4.68E-02
45-54	0.172863	0.18073	0.956469	3.39E-01
55-70	0.14611	0.174417	0.837703	4.02E-01
Number of habitants				
10 thousand-30 thousand	0.130414	0.139956	0.931824	3.51E-01
30 thousand-100 thousand	-0.05286	0.136649	-0.38684	6.99E-01
100 thousand-250 thousand	0.166572	0.168249	0.990031	3.22E-01
250 thousand-500 thousand	0.171024	0.201346	0.849402	3.96E-01
>500 thousand	0.231682	0.14834	1.561828	1.18E-01
Family size in numbers				
2	0.150908	0.132082	1.142534	2.53E-01
3	0.346485	0.154747	2.239041	2.52E-02
4	0.3366	0.163979	2.05271	4.01E-02
5	0.316484	0.244127	1.296389	1.95E-01
6	0.930942	0.471673	1.973701	4.84E-02
7	0.161956	0.64081	0.252736	8.00E-01
8+	0.192982	0.663294	0.290945	7.71E-01
Minors				
No	0.37084	0.123362	3.006121	2.65E-03
Education				
Junior high school diploma	0.03339	0.547298	0.061008	9.51E-01
Middle-school diploma	0.051313	0.536818	0.095588	9.24E-01
Degree	0.141333	0.541575	0.260967	7.94E-01
Master's degree/postgraduate doctorate	-0.50789	0.559091	-0.90842	3.64E-01
Income				
High	-0.86391	0.46597	-1.85401	6.37E-02
Medium-high	-1.9596	0.432763	-4.52812	5.95E-06
Media	-2.04533	0.431008	-4.74546	2.08E-06

Medium-low	-2.1448	0.439174	-4.8837	1.04E-06
Low	-2.23394	0.44894	-4.97604	6.49E-07
Very low	-2.45796	0.477568	-5.14681	2.65E-07
Don't know/prefer not to indicate	-2.77954	0.479079	-5.80183	6.56E-09
Secondhand:Selfish_Info	-0.04176	0.176124	-0.23711	8.13E-01
Low Medium	-2.75376	0.69787	-3.94595	7.95E-05
Medium High	-1.59337	0.696639	-2.28723	2.22E-02

The findings of this study support that the purchase intention of consumers and its perceived meaningfulness is influenced by circularity of the product. But it fails to support the main hypotheses regarding the influence of provenance effect on consumer's purchase intention. Further, there is no other influence in the perceived meaningfulness and uniqueness.

Table 11: Summary of hypotheses and results

Hypotheses	Results
H1: The type of circular product (remanufactured vs. second-hand) has a significant positive effect on consumers' purchase intention.	Supported
H2: The type of circular product (remanufactured vs. second-hand) has a significant positive effect on meaningfulness and uniqueness.	Supported
H3a: The encryption of owner information using blockchain technology can affect the perceived meaningfulness and uniqueness of circular clothing.	Not supported
H3b: The encryption of owner information using blockchain technology can have a significant positive effect on consumers' purchase intention.	Not supported
H4a: Information about the provenance of a product, specifically the status of the previous owner, significantly affects consumers' purchase intentions when purchasing circular products.	Supported
H4b: Only specific types of provenance information, relating to the previous owner's altruism or self-centeredness, influence the perceived value and purchase intention of circular products.	Not supported

Research limitations. *It's interesting that we obtained two contrasting results by using the same experimental setup. In the first study, adding provenance information to second-hand circular products was impactful. However, when provenance details were limited to selfishness and altruism in study 2, there was no effect. This contrasting results rises two questions: Does only a specific type of provenance information influence buying intentions? And if so, what kind of provenance information is effective? Thus, we need more clarity on the results obtained, which further opens up the path for future research direction in this field.*

Furthermore, in both studies, circular products were inherently viewed as unique and meaningful by consumers. This suggests that circular products have inherent value for consumers. Adding previous owner information can enhance perceived meaningfulness and uniqueness of the circular product. However, considering the results from study 2, the specific type of ownership information that can have a significant relationship remains unanswered. Hence, future research should focus on these aspects while considering the intangible values of the products studied.

Managerial implications. For practitioners, the knowledge that circular products contain superior value can be a valuable marketing tool. Especially for second-hand market and its business players, it can directly help in boosting their sales and business by incorporating provenance information in their marketing strategy. Besides private reselling markets, companies can appeal to consumers who are looking for more sustainable and ethical purchasing options by promoting the fact that their products have been re-crafted. This can help companies differentiate themselves in the market and attract consumers by providing them with products with greater meaning and value. Furthermore, this study also suggests that companies may benefit from investing in the development of new business models that emphasize the value of remanufactured and reused products. By adopting circular business models, companies can capture more value from their products and create new revenue streams, while also contributing to a more sustainable economy.

Originality of the paper. *Our attempt to explore the provenance of used products in terms of circularity is novel, yet further studies focusing on this aspect are necessary for a better understanding. Previous research on provenance mainly focuses on the origin of raw materials and production processes, involving people (B. Luceri et al., 2016, M. Spence et al., 2018, SK. Prathap et al., 2022). Yet, there hasn't been any research on provenance concerning previous ownership and its link to circular products. To our knowledge, this is the first study to investigate how provenance, product circularity, and their perceived values are interconnected.*

References

- CHEN Y.S., CHANG C.H. (2013), "Towards green trust: The influences of green perceived quality, green perceived risk, and green satisfaction", *Management Decision*, vol. 51, n. 1, pp. 63-82.
- CONFENTE I., SCARPI D., RUSSO I. (2020), "Marketing a new generation of bio-plastics products for a circular economy: The role of green self-identity, self-congruity, and perceived value", *Journal of Business Research*, vol. 112, n. October 2019, pp. 431-439.
- FEIGENBAUM G., REIST I., REIST I.J. (Eds.), (2012), *Provenance: An alternate history of art*. Getty Publications.

- FRANKE N., SCHREIER M. (2008), "Product uniqueness as a driver of customer utility in mass customization", *Marketing Letters*, vol. 19, n. 2, pp. 93-107.
- GARRIDO D., ESPINOLA-ARREDONDO A., MUNOZ-GARCIA F. (2020), "Can mandatory certification promote greenwashing? A signaling approach", *Journal of Public Economic Theory*, vol. 22, n. 6, pp. 1801-1851.
- GROSS R. (2014), "A theoretical consumer decision making model: The influence of interactivity and information overload on consumers intent to purchase online", *International Journal of Business Management & Economic Research*, vol. 5, n. 4, pp. 64-70.
- HAGTVEDT H., PATRICK V.M. (2008), "Art infusion: The influence of visual art on the perceived value and purchase intention of consumer products", *Journal of Marketing Research*, vol. 45, n. 3, pp. 379-389.
- HU H.F., KRISHEN A. S. (2019), "When is enough, enough? Investigating product reviews and information overload from a consumer empowerment perspective", *Journal of Business Research*, vol. 100, pp. 27-37.
- IM S., MONTOYA M.M., WORKMAN J.P. (2013), "Antecedents and consequences of creativity in product innovation teams", *Journal of Product Innovation Management*, vol. 3, n. 1, pp. 170-185.
- KESSOUS A., VALETTE-FLORENCE P. (2019), "'From Prada to Nada': Consumers and their luxury products: A contrast between second-hand and first-hand luxury products", *Journal of Business Research*, vol. 102, pp. 313-327.
- KIRCHHERR J., REIKE D., HEKKERT M. (2017), "Conceptualizing the circular economy: An analysis of 114 definitions", *Resources, Conservation and Recycling*, vol. 127, n. September, pp. 221-232.
- MACHADO M.A.D., ALMEIDA S.O. DE, BOLLIICK L C., BRAGAGNOLO G. (2019), "Second-hand fashion market: consumer role in circular economy", *Journal of Fashion Marketing and Management*, vol. 23, n. 3, pp. 382-395.
- MAGNIER L., MUGGE R., SCHOORMANS J. (2019), "Turning ocean garbage into products - Consumers' evaluations of products made of recycled ocean plastic", *Journal of Cleaner Production*, vol. 215, pp. 84-98.
- MORKUNAS V.J., PASCHEN J., BOON E. (2019), "How blockchain technologies impact your business model", *Business Horizons*, vol. 62, n. 3, pp. 295-306.
- SLATON K., POOKULANGARA S. (2022), "Collaborative consumption: An investigation into the secondary sneaker market", *International Journal of Consumer Studies*, vol. 46, n. 3, pp. 763-780.
- TABACHNICK B.G., FIDELL L.S. (2007), "Experimental designs using ANOVA (Vol. 724)", Belmont, CA: Thomson/Brooks/Cole.
- TESTA F., DI IORIO V., CERRI J., PRETNER G. (2021), "Five shades of plastic in food: Which potentially circular packaging solutions are Italian consumers more sensitive to", *Resources, Conservation and Recycling*, vol. 173, n. June, 105726.
- TESTA F., GUSMEROTTI N., CORSINI F., BARTOLETTI E. (2022), "The role of consumer trade-offs in limiting the transition towards circular economy: The case of brand and plastic concern", *Resources, Conservation and Recycling*, vol. 181, n. January, 106262.
- TIAN K.T., BEARDEN W.O., HUNTER G.L. (2001), "Consumers' need for uniqueness: Scale development and validation", *Journal of Consumer Research*, vol. 28, n. 1, pp. 50-66.
- VOGT K., JENNY G.J., BAUER G.F. (2013), "Comprehensibility, manageability and meaningfulness at work: Construct validity of a scale measuring work-related sense of coherence", *SA Journal of Industrial Psychology*, vol. 39, n. 1, pp. 1-8.
- YONG A.G., PEARCE S. (2013), "A beginner's guide to factor analysis: Focusing on exploratory factor analysis", *Tutorials in quantitative methods for psychology*, vol. 9, n. 2, pp. 79-94.

Websites

<https://www.lvmh.com/news-documents/news/lvmh-partners-with-other-major-luxury-companies-on-aura-the-first-global-luxury-blockchain/>

Reshaping customers' lifelong journey in the health and wellness contexts

LAURA GRAZZINI¹ SABINA DE ROSIS² RAFFAELE FRUSTACI³ VALENTINA SBROLLI⁴
GAETANO AIELLO⁵

Abstract

Nowadays, the boundaries between healthcare and wellness are blurring, leading to a convergence phenomenon across these industries. While previous works mainly focused on the convergence between healthcare and technology, this study aims to integrate this perspective, including the wellness domain. In doing so, the present research will focus on the consumer point of view, trying to identify the actual journey across the health and wellness industries. In order to understand the structure and the touchpoints of this path, we will conduct a focus group involving healthcare and wellness consumers. Theoretically, the study contributes to the existing literature by exploring this new scenario of convergence. From a managerial standpoint, the research provides guidelines for companies within healthcare and wellness industries, supporting them in building strategies funded on consumer behavior knowledge.

Key words: health, wellness, convergence, lifelong journey, touchpoints

Framing of the research. Health and Wellness are two industries typically considered as two separate entities (Greenberg, 1985). However, several changes, both from the demand and offer side, are reshaping the current scenario towards a single widespread sector where boundaries are blurred. In 2022, in Italy, healthcare expenditure amounted to 171.9 billion Euros, with private expenditure accounting for 21% and steadily increasing over the past ten years (ISTAT, 2023). Between 2010 and 2017, the healthcare system experienced a depletion in staff, number of hospitals, and beds, leading to increased reliance on partnerships with the private healthcare sector (Buzelli & Boyce, 2021). In this scenario, there is also a constantly growing wellness market worth \$5.6 trillion globally (GWI, 2023), with Italy ranking fourth among European countries in market size in 2020 (GWI, 2021). Consumers move within the health and wellness sectors to balance their lives and achieve their optimal selves by taking care of themselves in intangible ways as well (Grénman et al., 2019).

From Patients to Customers

From the demand point of view, integration can be examined through the lens of consumer behavior, a consumer who is increasingly informed and aware of health, wellness and well-being (McKinsey, 2021). Nowadays consumers are more conscious and sensitive about their health-related issues (Rathna & Sumathy 2022) and this pushes them towards the adoption of healthy behaviors and towards the search for diet, exercise, better sleep and energy levels and stress management (KPMG, 2018). Indeed, today, an increasingly large percentage of individuals pay great attention to health and wellness (Suleman, 2021), leading to the development of a more holistic approach to medicine (Global Wellness Summit, 2021). The traditional notion of the passive patient is thus replaced with that of a health and well-being consumer involved and proactive in the design and management of his or her own care (Crié & Chebat, 2013), in fact it should be considered just as an individual, in line with the person-centered approach, that views body systems as interrelated (Starfield, 2011) and implies a focus on the totality of the person, considering the human-being rather than the patient (De Maeseneer, 2012).

This new, more involved and empowered consumer adopts a behavior that is expressed on three fronts: 1) self-monitoring, also using new digital tools (François et al., 2023); 2) healthy habits, as avoid smoking, eat well or exercise

¹ University of Firenze
e-mail: laura.grazzini@unifi.it
² Sant'Anna School of Advanced Studies, Pisa
e-mail: Sabina.DeRosis@santannapisa.it
³ University of Firenze
e-mail: raffaele.frustaci@unifi.it
⁴ University of Firenze
e-mail: valentina.sbroli@unifi.it
⁵ University of Firenze
e-mail: gaetano.aiello@unifi.it

(Anderson, 2019); 3) shared decision-making process, through which the individual becomes involved in choices that affect his or her state of well-being (Stiggelbout, 2012). This is also confirmed by Zhao (2016), who states that the individual should be involved in every decision or behavior that affects his life.

This approach, also supported by the spread of modern information technologies, leads to new consumer expectations (Simonse, Albayrak & Starre, 2019), which health and wellness companies must take into account to increase their satisfaction. These include the centrality of experience, the pursuit of accessibility, the transparency in communication in terms of procedures, treatments and costs and a special attention to privacy, looking for a balance between exploiting data for personalization purposes and safeguarding the security of confidential information (Agarwal et al., 2020).

Offer integration

Industrial convergence can be defined as the process of boundaries blurring through the convergence of value propositions, technologies and markets (Bröring, & Leker, 2007).

The current meaning of “health” goes beyond mere absence of illness, encompassing aspects of wellness and wellbeing (Hughner & Kleine, 2004; Wang et al., 2010; Kantar, 2021). In fact, following the definition of health provided by the World Health Organization, health can be defined as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (World Health Organization, 2024). Therefore, we can assess that the process of convergence between health and wellness is an established concept. Moreover, scholars have studied the process of convergence between healthcare and technology (Schiavone et al., 2021), identifying a digital health innovation ecosystem, in which several actors, like digital health communities, healthcare stakeholders and institutions, interact through multiple touchpoints within a digital health environment, to monitor and improve the wellbeing and health of patients, to empower patients in the management of their health and that of their families (Iyawa et al., 2016; Singhal et al., 2020). Enhancing wellness, achieving better health results, and generating broader individual and collective benefits through preventive measures necessitate an approach guided by principles such as people education, activation, engagement, and empowerment (Pennucci et al., 2022).

Within this scenario, many initiatives in health promotion and prevention are underway in response to evolving societal needs, such as an aging population and the rise of chronic diseases. Healthcare organizations are placing growing emphasis on primary care, encouraging healthy lifestyles, and supporting individuals in overseeing their overall well-being, health, and diseases (Pennucci et al., 2022). In addition to integrating within individual providers’ offerings, the integration among the offerings of various providers is also a crucial aspect in this scenario. The collaboration of public healthcare organizations with the private sector aimed for the adoption of hybrid and collaborative governance structures during the pandemic, which appeared a crucial strategy for healthcare entities seeking proactive measures against future shocks (Da Ros et al., 2024), and can be crucial in the (new) normal times as well.

A lifelong journey

A recent definition of customer experience incorporates the idea of the “customer’s journey” across various touchpoints (Lemon and Verhoef, 2016, p. 6). To establish and sustain strong, positive, and enduring relationships between providers and users, the overall experience needs enhancement, by taking into account the entire user pathway across all touchpoints within a service experience (Bolton et al., 2014; McColl-Kennedy et al., 2015). A positive care experience is essential for building trust not only in private, but also in public healthcare institutions, ensuring access to care, and promoting well-being and good health (Pennucci et al., 2018). However, healthcare organizations often lack a comprehensive understanding of these journeys, which are often fragmented among different providers and settings (Nutti et al., 2017). Additionally, the design process of healthcare services frequently neglects the identification of stakeholder groups and their needs, inadequately involving them whether they are already diagnosed patients (c) or individuals with needs and preferences related to wellbeing and wellness (De Rosis et al., 2019b, Bonciani et al., 2020).

This shift towards wellbeing and wellness underscores the importance of the framework of Pennucci and colleagues (2022) revolves around education, activation, engagement, and empowerment principles, by building on the crucial role of providers, individual and communities (Huang & Lee, 2022) in enabling “health care preventive behaviors” (Jayanti & Burns, 1998). The focus on prevention is particularly intriguing in the realm of healthcare marketing (Anderson et al., 2019). It involves empowering individuals to play an active role within their personal wellbeing and health condition as well as towards the community, covering aspects from promoting health and wellbeing to daily health-related behaviors and extending to lifelong journeys, including digital landscapes and the commoditization of health goods and services (Cavusoglu & Demirbag-Kaplan, 2017). In this context, engagement becomes pivotal, emphasizing collaborative processes involving both providers and users throughout a multifaceted, lifelong health journey (Berkowitz, 2021). This holistic viewpoint not only fosters improved health outcomes but also enables individuals to assume responsibility for their well-being, aligning with the evolving understanding of health in contemporary paradigms. In this scenario, patients are engaged by the possibility of influencing their own decisions and increasing their knowledge through easier access to information facilitated by new technologies (Osei et al., 2018; François, J. et al., 2023).

Purpose of the paper. Drawing from Pennucci et al. (2022) framework, the present study aims to investigate the integration between these two industries, by exploring how individuals interact with different touchpoints provided by health and wellness providers when it comes to their daily health and wellness-related behaviors. In doing so, a

qualitative methodology based on a focus group study will be adopted, to have a deeper understanding of such phenomenon.

This study contributes to the literature on health and wellness consumers. It also offers practical insights to understand the consumer journey across healthcare and wellness industries.

Methodology and Expected Results. The aim of the present study is to explore the recent evolution of the integration between health and wellness sectors from the individuals' point of view. Given the limited insights provided by the literature on such phenomenon, we adopt an inductive qualitative approach drawing on the focus group method as an effective means of exploratory data collection (Calder, 1977; Stewart and Shamdasani, 2014; Fern and Fern, 2001). The focus group enables us to observe group interaction, which is the hallmark of this method (Belzile and Öberg 2012). This enhanced level of interaction helps participants offer multiple facets compared to one-on-one interviews (Krueger, 2014), which is especially beneficial given the complexity of the topic under investigation.

Drawing from Pennucci et al. (2022) framework, the focus group is designed to deepen understanding of how individuals experience their lifelong journey by interacting across different touchpoints in their daily health and wellness-related behaviors. As suggested by Pennucci and colleagues (2022) to make people able to improve their health and well-being, healthcare services should educate, activate, engage and empower them. According to this holistic approach, other providers such as private organizations promoting people's wellness and well-being can thus implement specific interventions to sustain them and to contribute to redesign their lifelong journey.

Following Fern and Fern's (2001) guidelines, with facilitation by a moderator and a common discussion protocol prepared prior to the research team (Bell et al., 2018), a sample between 10 and 15 participants will take part in the focus group. Specifically, a purposive sample through referrals (Arnold and Reynolds, 2003) will be used. Participants who had at least one experience with health and wellness providers through different touchpoints will be recruited, because the aim is to understand their experiences with such services.

The focus group will last around 2 h. We will start by developing a portrait of people's willingness to promote their health and wellness behaviors. We will then explore the main factors that affect this process, by focusing on those that inhibit or facilitate their education, activation, engagement and empowerment when interacting with different touchpoints. Before the focus group begins, the moderator will explain the procedure and the purpose of the session. A substantive portion of the focus group will be then developed through the use of questions such as "How do you behave with regards to your health or wellness? Have you ever interacted with health or wellness providers? How have you interacted with them? When did it occur?; What touchpoints do you usually use to interact with these services?". The session will be then transcribed. The study will adopt an interpretive methodology to identify themes emerging from the analysis of the data. According to Yin (2013), the analytic framework comprised three stages: (1) analysis of transcripts; (2) identification of common recurrent themes; and (3) analysis of shared themes. A coding team of two researchers independently will read and analyze the transcripts to ensure the internal validity of the coding process (Weber, 1990); subsequently, the results will be compared, leading to interrater reliability (Cohen, 1960), and they will be measured with Cohen's kappa coefficient (0.83). A thematic analysis will be carried out based upon themes that will emerge from the focus group.

Research limitations. Two main issues may represent limitations for this research. The first limitation may be related to validity and reliability of data collected, as results may be affected by the number and characteristics of individuals who will attend the focus group. A careful selection of participants and the conduction of the focus group by expert researchers will contribute to minimizing these limitations of the methodology. The second limitation is that, from a theoretical point of view, the topic of the study is quite new and comparing the result of the research with the existing literature may be complex.

Managerial implications. From a managerial standpoint, this research will provide valuable information to companies and organizations following this process of convergence between industries. The expected results will help managers to understand the individuals' path through the lens of consumer behavior, and to realize the person-centred approach taking into account multiple events and conditions throughout an individual's life (Starfield, 2011).

Originality of the paper. The originality of this research lies in the cutting-edge topic under study, namely the Customer Lifelong Journey across health and wellness contexts. The research thus contributes to a scarce domain in the literature, aiming to address existing gaps in the topic of convergence between health and wellness and the new lifelong customer journey.

References

- AGARWAL R., DUGAS M., GAO G., KANNAN P.K. (2020), "Emerging technologies and analytics for a new era of value-centered marketing in healthcare", *Journal of the Academy of Marketing Science*, vol. 48, pp. 9-23.
- ANDERSON S., RAYBURN S.W., SIERRA J.J. (2019), "Future thinking: the role of marketing in healthcare", *European Journal of Marketing*, vol.53, n. 8, pp. 1521-1545.
- ARNOLD M.J., REYNOLDS K.E. (2003), "Hedonic shopping motivations", *Journal of retailing*, vol. 79, n. 2, pp. 77-95.
- BELL J., WATERS S. (2018), *Doing Your Research Project: A guide for first-time researchers*. McGraw-hill education (UK).
- BELZILE J.A., ÖBERG G. (2012), "Where to begin? Grappling with how to use participant interaction in focus group design", *Qualitative research*, vol. 12, n. 4, pp. 459-472.

- BERKOWITZ E.N. (2021), *Essentials of health care marketing*. Jones & Bartlett Learning.
- N. BOLTON R., GUSTAFSSON A., MCCOLL-KENNEDY J., J. SIRIANNI N., K. TSE D. (2014), "Small details that make big differences: A radical approach to consumption experience as a firm's differentiating strategy", *Journal of Service Management*, vol. 25, n. 2, pp. 253-274.
- BRÖRING S., LEKER J. (2007), "Industry convergence and its implications for the front end of innovation: a problem of absorptive capacity", *Creativity and innovation management*, vol. 16, n. 2, pp. 165-175.
- BUZELLI M.L., BOYCE T. (2021), "The privatization of the Italian national health system and its impact on health emergency preparedness and response: the COVID-19 case", *International Journal of Health Services*, vol. 51, n. 4, pp. 501-508.
- CALDER B.J. (1977), "Focus groups and the nature of qualitative marketing research", *Journal of Marketing research*, vol. 14, n. 3, pp. 353-364.
- CAVUSOGLU L., DEMIRBAG-KAPLAN M. (2017), "Health commodified, health communified: Navigating digital consumptionscapes of well-being", *European Journal of Marketing*, vol. 51, n. 11/12, pp. 2054-2079.
- CHOPRA M., PIONE A., FALARDEAU E., HAYTON S., MOULTON J. (2021), *The future of wellness: Connected and Customized*. McKinsey & Company.
- COHEN, . (1960), "A coefficient of agreement for nominal scales", *Educational and psychological measurement*, vol. 20, n. 1, pp. 37-46.
- CRIÉ D., CHEBAT J.C. (2013), "Health marketing: Toward an integrative perspective", *Journal of Business Research*, vol. 66, n. 2013, pp. 123-126.
- DA ROS A., PENNUCCI F., DE ROSIS S. (2024), "Unlocking organizational change: a deep dive through a data triangulation in healthcare", *Management Decision*.
- DE MAESENEER J., VAN WEEL C., DAEREN L., LEYNS C., DECAT P., BOECKXSTAENS P., WILLEMS S. (2012), "From" patient" to" person" to" people": the need for integrated, people centered health care", *International Journal of Person Centered Medicine*, vol. 2, n. 3, pp. 601-614.
- FRANÇOIS J., AUDRAIN-PONTEVIA A.F., MENVIELLE L., CHEVALIER N. (2023), "Empowering health care consumers in the era of Internet of Things", *International Journal of Consumer Studies*, vol. 47, n. 3, pp. 1060-1075.
- DE ROSIS S., PENNUCCI F., SEGHERI C. (2019), "Segmenting adolescents around social influences on their eating behavior: findings from Italy", *Social Marketing Quarterly*, vol. 25, n. 4, pp. 256-274.
- FERN E.F., FERN E.E. (2001), *Advanced Focus Group Research*, Thousand Oaks, CA: Sage Publication.
- FRANÇOIS J., AUDRAIN-PONTEVIA A.F., MENVIELLE L., CHEVALIER N. (2023), "Empowering health care consumers in the era of internet of things", *International Journal of Consumer Studies*, vol. 47, n. 3, pp. 1060-1075.
- GREENBERG J.S. (1985), "Health and Wellness: A Conceptual Differentiation", *Journal of School Health*, vol. 55, n. 10, pp. 403-406.
- GRÉNMAN M., HAKALA U., MUELLER B. (2019), "Wellness branding: insights into how American and Finnish consumers use wellness as a means of self-branding", *Journal of Product & Brand Management*, vol. 28, n. 4, pp. 462-474.
- HUANG S., LEE L. (2022), "The 5S's of consumer health: a framework and curation of JCR articles on health and medical decision-making", *Journal of Consumer Research*, vol. 49, n. 5, pp. 926-939.
- HUGHNER R.S., KLEINE S.S. (2004), "Views of health in the lay sector: A compilation and review of how individuals think about health", *Health*, vol. 8, n. 4, pp. 395-422.
- IYAWA G.E., HERSELMAN M., BOTHA A. (2016), "Digital health innovation ecosystems: From systematic literature review to conceptual framework", *Procedia Computer Science*, vol. 100, pp. 244-252.
- JAYANTI R.K., BURNS A.C. (1998) The antecedents of preventive health care behavior: An empirical study", *Journal of the Academy of Marketing Science*, vol. 26, n. 1, pp. 6-15.
- KANTAR (2021) Wellbeing Segments.
- KPMG (2018), *Healthcare reimagined; Innovation trends, predictions and actions for healthcare leaders*.
- KRUEGER R.A. (2014), *Focus groups: A practical guide for applied research*. Sage publications.
- LEMON K.N., VERHOEF P.C. (2016), "Understanding customer experience throughout the customer journey", *Journal of marketing*, vol. 80, n. 6, pp. 69-96.
- MCCOLL-KENNEDY J.R., GUSTAFSSON A., JAAKKOLA E., KLAUS P., RADNOR Z.J., PERKS H., FRIMAN M. (2015), "Fresh perspectives on customer experience", *Journal of Services Marketing*, vol. 29, n. 6/7, pp. 430-435.
- NUTI S., DE ROSIS S., BONCIANI M., MURANTE A.M. (2017), "Rethinking Healthcare Performance Evaluation Systems towards the People-Centredness Approach: Their Pathways, their Experience, their Evaluation", *Healthcare Papers*.
- OSEI-FRIMPONG K., WILSON A., LEMKE F. (2018), "Patient co-creation activities in healthcare service delivery at the micro level: The influence of online access to healthcare information", *Technological Forecasting and Social Change*, vol. 126, pp. 14-27. p. 18.
- PENNUCCI F., DE ROSIS S., NUTI S. (2018), "Quando promuovere stili di vita sani diventa un'esperienza professionale per gli adolescenti: il progetto 'beFood'", *Politiche Sanitarie*, vol. 19, n. 1, pp. 10-22.
- PENNUCCI F., DE ROSIS S., MURANTE A.M., NUTI S. (2022), "Behavioural and social sciences to enhance the efficacy of health promotion interventions: Redesigning the role of professionals and people", *Behavioural Public Policy*, vol. 6, n. 1, pp. 13-33.
- RATHNA G.A., SUMATHY M. (2022), "Consumers' Attitude Towards Organic Products -The Moderating Role of Health Consciousness", *Sri Lanka Journal of Marketing*, vol. 8, n. 1.
- SCHIAVONE F., SABETTA A., LEONE D., CHIAO B. (2021), "Industrial convergence and industrial crisis: a situational analysis about precision medicine during the COVID-19 pandemic", *IEEE Transactions on Engineering Management*, vol. 70, n. 4, pp. 1456-1467.
- SIMONSE L., ALBAYRAK A., STARRE S. (2019), "Patient journey method for integrated service design", *Design For Health*, vol. 3, n. 1, pp. 82-97.
- SINGHAL S., KAYYALI B., LEVIN R., GREENBERG Z. (2020), The next wave of healthcare innovation: The evolution of ecosystems How healthcare stakeholders can win within evolving healthcare ecosystems. no. June, pp. 1-21.
- STARFIELD B. (2011), "Is Patient-Centered Care the Same As Person-Focused Care?", *The Permanente Journal*, vol. 15, n. 2, pp. 63-69.
- STEWART D.W., SHAMDASANI P.N. (2014), *Focus groups: Theory and practice* (Vol. 20), Sage publications.

- STIGGELBOUT A.M., VAN DER WEIJDEN T., DE WIT M.P., FROSCH D., LÉGARÉ F., MONTORI V.M., ELWYN G. (2012), “Shared decision making: really putting patients at the centre of healthcare”, *Bmj*, vol. 344.
- SULEMAN A. (2021), *Innovative Health & Wellness Marketing Trends For Digital Sapiens*. Zilion Designs Blog.
- ZHAO J., GAO S., WANG J., LIU X., HAO Y. (2016), “Differentiation between two healthcare concepts: Person-centered and patient-centered care”, *J Nurs*, vol. 2352, n. 0132, pp. 10-1016.
- WANG W., KEN H.T., BOLTON L. E. (2010), “Lay theories of medicine and a healthy lifestyle”, *Journal of Consumer Research*, vol. 37, n. 1, pp. 80-97.
- WEBER R.P. (1990), *Basic Content Analysis*, Sage Publication, CA.
- YIN R.K. (2013), “Validity and generalization in future case study evaluations”, *Evaluation*, vol. 19, n. 3, pp. 321-332.

Websites

<https://globalwellnessinstitute.org/>
<https://www.istat.it/>
<https://www.who.int/>

A Well Mind, A Wise Choice: A Systematic Review of Wellness and its Influence on Food Decision-Making

SIMONA DEL CORE¹ ALESSIO DI LEO² FABIOLA SFODERA³

Abstract

Wellness is an individual state of mind that promote optimal health and well-being through personal responsibility, intentions, and actions. The dynamic nature of wellness is expressed through an active process of self-empowerment and choices, including the physical dimension associated with a lifestyle that also involves nutrition. Although the association between wellness, well-being, and health has been studied in the literature, the existing body of knowledge appears fragmented and lacks consolidation regarding the role of wellness and its dimensions in the food purchase decision-making process. A systematic literature review was conducted and a sample of 85 articles relevant to the investigation was selected. The analysis found that wellness plays a mediating function in consumer purchase decision-making, and it is represented by dimensions that relate to health: motivation to feel better, motivation for preventive health, and healthy lifestyle.

Keywords: wellness; health; consumer behavior; decision-making process; food.

Framing of the research. *The Food Marketing Institute (2023) recently confirmed the power of health and wellness in the food industry. This is supported by the continuous evolution of consumer choice of food consumption, and from the increased focus on selecting healthy and nutritious options (Petrescu et al., 2020; Van Loo et al., 2020). At the same time, food stores are becoming key venues for health and wellness by carrying out initiatives to meet consumers' expectations and needs (Cao et al., 2020). Examining the key factors that drive food choice is necessary to frame the food consumption perspective. According to previous studies, health-related motivations are one of the main factors driving consumers' food purchasing decisions (Ali & Ali, 2020), and elements such as high nutritional value and the potential to reduce the risk of cancer or heart disease, play a vital role in consumers' purchasing intentions (Darian & Tucci, 2011). Food choices can impact overall evaluations of life by influencing fulfillment and satisfaction, whilst recognizing that domain satisfaction can influence individual health (World Health Organization, 2011).*

Some authors have begun to develop and study the "Food well-being (FWB)" concept, defined as a positive psychological, physical, emotional, and social relationship with food at both the individual and societal levels. They highlight the critical relationship between food and subjective well-being in contributing to a better understanding of consumer food choices (Ares et al., 2014; Block et al., 2011; Hémar-Nicolas & Ezan, 2019). In the current context of changing health paradigms, leads to the conclusion that the transition from a medical disease paradigm to a paradigm based on well-being and wellness, in which dietary practice continues to evolve, and it is recognized that lifestyle-related behaviors, such as choosing healthy foods, play an essential role in achieving optimal health (McMahon, 2013).

Traditionally, the concept of well-being refers essentially to psycho-physical health (McFadden, 2014); it involves experiencing health, happiness, and prosperity, including good mental health and high life satisfaction (McMahon et al., 2010). As the scenario evolved, it began to take on a different meaning, enriched with other aspects that Mogilner et al. (2018) identified as physical, emotional, mental, social, spiritual, organizational, material, economic, cultural, and environmental. The countless fields of application and definitions of well-being have led to considerable definitional ambiguity, which also extends to the use and its functions.

The World Health Organization tended to attribute the concept of health an additional value to well-being of the mere absence of disease (WHO, 1946), defining it as a state of absolute physical, mental, and social well-being.

Previous studies have observed the importance of keeping well-being and wellness distinct, especially in the food sector (McMahon et al., 2010). This distinction is crucial for understanding how nutrition can impact these two dimensions and

¹ Sapienza University of Roma
e-mail: simona.delcore@uniroma1.it

² Sapienza University of Roma
e-mail: alessio.dileo@uniroma1.it

³ Sapienza University of Roma
e-mail: fabiola.sfodera@uniroma1.it

developing interventions for more effective and healthier food choices. Their value is recognized in the health market as a sales opportunity for nutrition-conscious and health-conscious consumers (Short, 2005; Smith, 2005).

According to the Global Wellness Institute's definition (2023), wellness is an active and individual state of mind rather than a passive or static state, driven by personal responsibility, and associated with intentions, choices, and actions promoting optimal health and well-being. Based on this definition, wellness is positive and affirmative, a conscious, self-directed, and evolving process (Stoewen, 2015) that aims to improve well-being. Therefore, while well-being represents an achieved state, wellness is described as an ongoing journey. In light of this, wellness encompasses a holistic approach to living a fulfilling life across several dimensions such as mental, emotional, spiritual, social, and physical (Kobrin, 2017). Although there are similarities between them, wellness is distinguished by its dynamic nature, which does not represent a fixed state of being such as happy, healthy, or achieved well-being (Oliver et al., 2018). Instead, wellness involves an active process of awareness and choices, including the physical dimension consumers associate with healthy lifestyles, choices, and market offering (Wickramaratne et al., 2020).

A key difference is how the state transition dynamics lead to wellness as a change toward a new or regenerated state (Morganti et al., 2021). Therefore, wellness is upbeat and affirmative and can be considered a conscious, self-directed, and evolving process (Stoewen, 2015) aimed at improving well-being. It is definable as a state of static well-being achieved at a given time. Studies (e.g., Meiselman, 2016) have established that the concept of wellness emerges when the transition from "being healthy" to "feeling better" occurs.

Wellness appears to be more relevant for investigating the food decision-making process precisely because of the field of application of food consumption (Nunes et al., 2020). Food consumption is a continuous activity over time, and a healthy diet confers longevity due to its body's effects (Moosavi-Movahedi et al., 2021).

Some studies have observed that during the food purchasing process consumers are susceptible to a wide range of socio-psychological and cultural models that influence consumer decision-making (Bublitz et al., 2010). Therefore, the ways in which consumers make decisions are influenced by wellness-related factors such as the propensity to longevity and being in good health (Nunes et al., 2020).

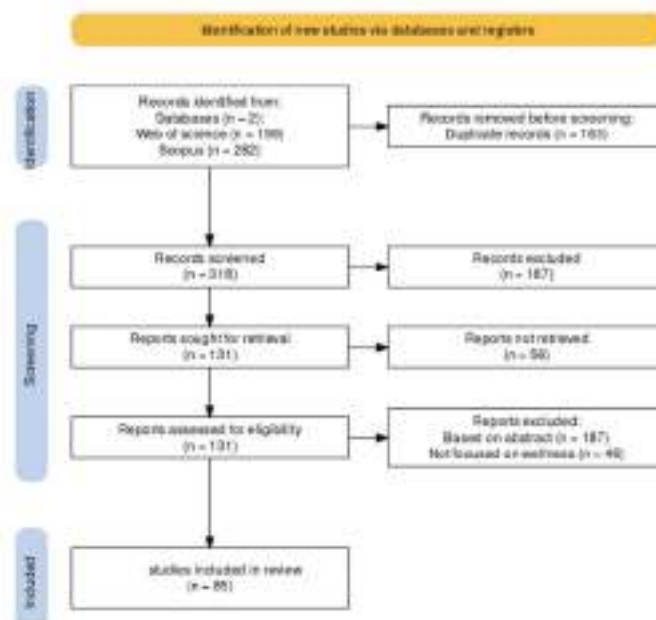
During the evaluation of alternatives phase, the consumer evaluates product's attributes, making comparisons and at the same time looking for benefits deriving from the specific product (Puth et al., 1999). Previous research (Van Der Merwe et al., 2010) stated that the healthiness of the products is evaluated in a phase prior to the evaluation called "pre-purchase search"; in the evaluation phase, however, consumers pay attention to nutritional information and information regarding ingredients which have to do with overall quality. The product attributes that consumers positively evaluated during purchasing decisions appear to be quality (Ali et al., 2021) and health benefits, followed by nutritional content, hygiene, certification of the food product, and the natural content of the product.

Understanding the differences between well-being as an achieved state and wellness as an ongoing process focused on improvement allows researchers to delve deeper into how consumers make decisions influenced by factors like longevity and perceived health benefits.

Purpose of the paper. The study aimed to explore the scientific literature to identify how wellness and related health dimensions influence food purchasing decision-making. Specifically, the aim is to delineate the dimensions that explain wellness and their influence on consumer decision-making.

Methodology. This work examines research related to the food decision making complex by applying the Preferred Reporting Items for Systematic Reviews (PRISMA) guidelines (Moher et al., 2015).

Figure 1: PRISMA Protocol



To achieve a comprehensive overview of the previous research in food decision making we searched on Scopus and Web of Science databases. We chose these databases for the reliability of their selection standards and their diffusion within the academic community (Singh et al., 2021). The total number of articles identified on the databases amounted to 481 articles, of which 199 on Web of Science and 282 on Scopus.

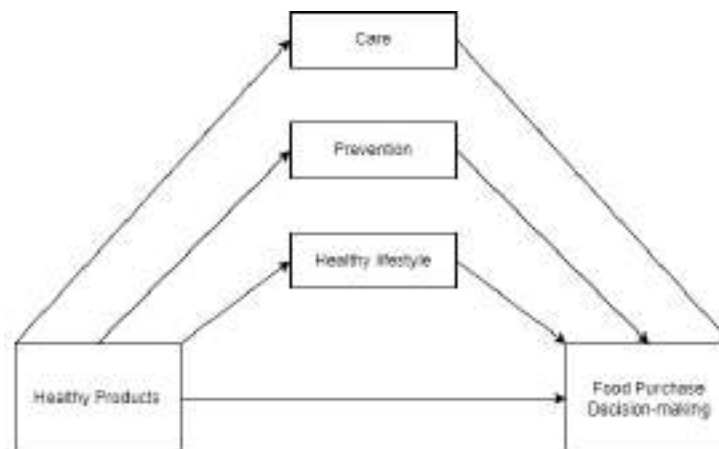
“Food decision making”, “food choice” as well as “health”, “wellness” and “wellbeing” are often used interchangeably to describe the behavior of individuals depending on the discipline in which food consumption is analyzed, and on the background of the researcher. In the initial stage of this study, we identified the most common terms by conducting preliminary searches and by evaluating references in sample articles. The search terms had to appear in the title, in the abstract, or in the keywords of the article.

To ensure that only relevant articles are included in the final analysis, we identified as exclusion criteria publication and content. Only academic peer review journals were considered. Non-academic articles, opinions, experience papers, books or book sections, and conference proceedings were excluded. Then, articles which do not focus on food decision-making, and are published out of English have been eliminated. This process resulted in the selection of a total of 85 items (Fig. 1).

Since the DONE framework (Stok et al., 2017) is an interdisciplinary approach to classifying research efforts on food decision-making, we sought to reveal relationships between disciplines. To operationalize the disciplines in which studies on food decision-making are published, we used the journal as a proxy. The scope of an individual journal was derived from the journal description on the respective website. Two researchers independently analyzed the titles, abstracts, and full texts to identify the primary results of the studies examined. In case of doubts about the classification of a publication or disagreement between researchers, categories have been added, expanded, or changed. This led to the identification of 5 categories: medicine/health sciences, psychology, marketing and consumer research, business economics, and sociology.

Results. The work is still in progress, but some reflections have already been identified. The factors that influenced consumers' decision-making can be categorized in: (i) motivations such as the desire to improve well-being (care), (ii) preventive health measures, and (iii) commitment to a healthy lifestyle. Wellness intended as “path of improvement” is achievable through food therapy. It is represented by these dimensions referring to health motivations (i; ii; iii). Scholars have investigated the connection between health and wellness (Schuster et al., 2004; Martino et al., 2017; Oliver et al., 2018). Some indicators of health, healthy lifestyle (Lucini et al., 2015), care and prevention (Pappalardo et al., 2016) can be a proxy for wellness representing its maximization (Dunn, 1959). This research hypothesizes that wellness mediate effects of products' healthy dimensions on purchase decision-making process. The independent variable (healthy dimension) refers mainly to organic products and functional foods. The mediation relationships between variables are expressed in the figure below (fig. 2). These findings are corroborated by previous studies that confirm wellness as a mediating variable in the decision-making process (Green et al., 2020; Patel & Wolfe, 2020; Choi et al., 2015) and evaluate the desire for health and wellness as an important driver in purchase decision (Kareklas et al., 2014), especially in the food market (Irene Goetzke & Spiller, 2014).

Figure 2: The Care–Prevention–Healthy lifestyle Dimensions of Wellness Mediate Food Purchase Decision-making



Care motivation refers to behaviors that improve people's physical wellness (Pappalardo et al., 2016). It thus signals the motivation of individuals with an impaired health status to take action to achieve a subsequent improved health status. The difference between this motivational type and the health-preventive type is inherent in the finding that the former may be outside of self-determined needs but is rather driven by health needs. The motivation to feel better has a significant influence on purchasing decisions (Li et al., 2014), and scientific research has investigated the relationship between dietary behavior to comply with and certain abnormal health conditions. For example, previous studies have explored reducing salt intake to combat obesity (Bolha et al., 2020), or diagnosed conditions such as diabetes led to an increased propensity to choose sugar-free and no-added-sugar labels (Albuobaid & Al-Mahish, 2022). Referring to the impact on

purchasing decisions, scholars have observed that diabetic consumers are twice as likely to purchase sugar-free and no-added-sugar labels as non-diabetic consumers (Albuobaid & Al-Mahish, 2022).

There seems to be consensus in the scientific literature that health problems influence food choice (Madeira & Goldman, 1989). Previous research (e.g., O'Brien et al., 2015) explored the role of health in consumers' decisions regarding food purchases, offering insights into how the motivation to enhance well-being influenced the selection of specific food varieties to address nutritional needs or conditions.

Conversely, preventive health motivation refers to the direct intention of consumers to engage in preventive health behaviors (Moorman & Matulich, 1993; MacInnis et al., 1991; Jayanti & Burns, 1998). Health motivation - especially in the form of a high trend towards prevention - is an important predictor of involvement in purchasing decisions and information use (Kamrath et al., 2019). For preventive reasons to health, therefore, refers to the motivation that is activated to achieve through nutrition a state of wellness that can act in advance on an abnormal state, going to prevent diseases. Previous studies have analyzed the purchase of healthier foods to increase the health and immunity of the body during the pandemic (Yusmarni et al., 2021) or the reduction of iodine for health benefits (De Melo et al., 2022), the purchase of functional foods for health support and to eliminate the risk of developing different diseases (Predanócyová et al., 2023), highlighting the influence of food safety on decision-making. Therefore, as confirmed by previous studies (e.g., Pappalardo et al., 2016), consumers would be looking for foods that have healthy characteristics that can prevent disease and improve people's physical wellness. The motivation for health translates into a preference for purchasing organic products and functional foods. The reasons why consumers buy organic products is because they believe they are better for their health (Suphaskuldamrong et al., 2021).

Healthy lifestyle refers to healthy behaviors that individuals adopt to move from an already favorable condition to an improvement condition. The prevailing orientation concerns the intention to live in a healthy way (Setiyaningrum & Batu, 2019). Research has observed a significant effect (Setiyaningrum & Batu, 2019) between the intention to live healthily and purchasing decisions. Consumers guided by a healthy lifestyle are projected towards improving and conscious food choices. This attitude leads them to food products not distinctly designated to represent certain relationships (e.g., spinach to prevent iron deficiency), but towards healthy lifestyles (Seal & Bag, 2022; Urbonavičius et al., 2010) encouraging consumers to pay attention to all the characteristics of products (e.g. proteins to improve muscle mass).

Research limitations. The lack of validation of the dimensions detected by the literature review is a limitation of this study. Therefore, the use of quantitative and qualitative methodologies will be envisaged to resolve this limit. As we used the journal as a proxy to code the disciplines, future studies could code previous research efforts according to the discipline of the study itself or according to the affiliation of the authors. This might be helpful to gain new insights into the cross-disciplinary collaboration of researchers.

Managerial implications. As consumers increasingly integrate health-related values into their decision-making, marketers must comprehend how these belief systems impact the entire consumers' experiences. Having a clearer vision of the dimensions that represent wellness has not negligible managerial implications. Based on recognized consumer segments and the motivation that arises, whether curative, preventive or improvement, consumers should receive tailored information to aid them in their decisions regarding food consumption. In addition, understanding the factors influencing the decision-making process for purchasing healthy food is valuable for manufacturers in the design and development of new and healthier food products and will guide them to properly segment their markets in terms of choice of where and how to market these products.

Originality of the paper. To the best of our knowledge, no study has attempted to synthesize the literature on food decision-making across different disciplines. The research considers the relationship between wellness nutrition and consumer decision-making, to understand how the wellness and the underlying motivations that guide him can be inserted and activated in the decision-making process by grasping the differentiations resulting from the type of motivation activated: curative, preventive, improving.

References

- ALBUOBAID A.A., AL-MAHISH M.A. (2022), "Factors affecting Saudi consumers' decision to purchase food products containing food labels", *Food Research*, vol. 6, n. 5, pp. 349-356.
- ALI T., ALI J. (2020), Factors affecting the consumers' willingness to pay for health and wellness food products. *Journal of Agriculture and Food Research*, vol. 2, 100076.
- ARES G., DE SALDAMANDO L., GIMÉNEZ A., DELIZA R. (2014), "Food and well-being. Towards a consumer-based approach", *Appetite*, vol. 74, 61-69.
- BLOCK L.G., GRIER S.A., CHILDERS T.L., DAVIS B., EBERT J.E.J., KUMANYIKA S., LACZNIK R.N., MACHIN J.E., MOTLEY C.M., PERACCHIO L., PETTIGREW S., SCOTT M., VAN GINKEL BIESHAAR M.N.G. (2011), "From nutrients to nurturance: A conceptual introduction to food well-being", *Journal of Public Policy & Marketing*, vol. 30, n. 1, pp. 5-13.
- BOLHA A., BLAZNIK U., KOROŠEC M. (2020), "Influence of intrinsic and extrinsic food attributes on consumers' acceptance of reformulated food products: a systematic review", *Slovenian Journal of Public Health*, vol. 60, n. 1, pp. 72-78.
- BUBLITZ M.G., PERACCHIO L.A., BLOCK L.G. (2010), "Why did I eat that? Perspectives on food decision making and dietary restraint", *Journal of Consumer Psychology*, vol. 20, n. 3, pp. 239-258.
- CAO F., WANG X., WANG Z. (2020), "Effects of awe on consumer preferences for healthy versus unhealthy food products", *Journal of Consumer Behaviour*, vol. 19, n. 3, pp. 264-276.
- CHOI Y., KIM J., LEE C.K., HICKERSON B. (2015), "The role of functional and wellness values in visitors' evaluation of spa experiences", *Asia Pacific Journal of Tourism Research*, vol. 20, n. 3, pp. 263-279.

- DARIAN J.C., TUCCI L. (2011), "Perceived health benefits and food purchasing decisions", *Journal of Consumer Marketing*, vol. 28, n. 6, pp. 421-428.
- DE MELO L.R.B., TORRES F.R., GUIMARÃES J.T., SOUTELINO M.E.M., CRUZ A.G., CORTEZ M.A.S. (2022), "Study of consumer perception about low-sodium foods and characteristics related to perception and purchase of low-sodium spreadable processed cheese". *Journal of Sensory Studies*, vol. 37, n. 2, pp. e12732.
- GLOBAL WELLNESS INSTITUTE (2023), Global Wellness Economy Monitor 2023. Available at: https://globalwellnessinstitute.org/wp-content/uploads/2023/11/GWI-WE-Monitor-2023_FINAL.pdf
- GREEN Z.A., NOOR U., AHMED F. (2020), "The body-mind-spirit dimensions of wellness mediate dispositional gratitude and life satisfaction", *Journal of Happiness Studies*, vol. 21, pp. 3095-3119.
- HÉMAR-NICOLAS V., EZAN P. (2019), "How do children make sense of food well-being? Food for thought for responsible retailers", *International Journal of Retail & Distribution Management*, vol. 47, n. 6, pp. 605-622.
- IRENE GOETZKE B., SPILLER A. (2014), "Health-improving lifestyles of organic and functional food consumers", *British Food Journal*, vol. 116, n. 3, pp. 510-526.
- JAYANTI R.K., BURNS A.C. (1998), "The antecedents of preventive health care behavior: An empirical study", *Journal of the academy of marketing science*, vol. 26, n. 1, pp. 6-15.
- KAMRATH C., BIDKAR S., BRÖRING S. (2019), "Is food involvement in purchasing decisions always low? A consumer study from Germany", *PharmaNutrition*, 9, 100157.
- KAREKLAS I., CARLSON J.R., MUEHLIN D.D. (2014), "I eat organic for my benefit and yours: Egoistic and altruistic considerations for purchasing organic food and their implications for advertising strategists", *Journal of advertising*, vol. 43, n. 1, pp. 18-32.
- KOBRIN M. (2017), "Promoting wellness for better behavioral and physical health", *Substance Abuse and Mental Health Services Administration*. Retrieved from https://mfpc.samhsa.gov/ENewsArticles/Article12b_2017.aspx.
- LI X.E., LOPETCHARAT K., DRAKE M. (2014), "Extrinsic attributes that influence parents' purchase of chocolate milk for their children", *Journal of food science*, vol. 79, n. 7, pp. S1407-S1415.
- LUCINI D., ZANUSO S., BLAIR S., PAGANI M. (2015), "A simple healthy lifestyle index as a proxy of wellness: a proof of concept", *Acta diabetologica*, vol. 52, pp. 81-89.
- MACLNNIS D.J., MOORMAN C., JAWORSKI B.J. (1991), "Enhancing and measuring consumers' motivation, opportunity, and ability to process brand information from ads", *Journal of Marketing*, vol. 55, n. 4, pp. 32-53.
- MADEIRA K., GOLDMAN A. (1989), "Some aspects of sensory properties of food that relate to food habits and associated problems of elderly consumers.", *Journal of Nutrition for the Elderly*, vol. 8, n. 2, pp. 3-24.
- MARTINO J., PEGG J., FRATES E.P. (2017), "The connection prescription: using the power of social interactions and the deep desire for connectedness to empower health and wellness", *American journal of lifestyle medicine*, vol. 11, n. 6, pp. 466-475.
- MCFADDEN D. (2014), *The new science of pleasure: consumer choice behavior and the measurement of well-being*. In *Handbook of choice modelling* (pp. 7-48), Edward Elgar Publishing.
- MCMAHON A.T., WILLIAMS P., TAPSELL L. (2010), "Reviewing the meanings of wellness and well-being and their implications for food choice", *Perspectives in Public Health*, vol. 130, n. 6, pp. 282-286.
- MCMAHON A.T. (2013), "Wellness, wellbeing and food choice: a study of consumer and dietitian perspectives", University of Wollongong Thesis Collections.
- MEISELMAN H.L. (2016), "Quality of life, well-being and wellness: Measuring subjective health for foods and other products", *Food Quality and Preference*, vol. 54, 101-109.
- MOGILNER C., HERSHFIELD H.E., AAKER J. (2018), "Rethinking time: Implications for well-being", *Consumer Psychology Review*, vol. 1, n. 1, pp. 41-53.
- MOHER D., SHAMSEER L., CLARKE M., GHERSI D., LIBERATI A., PETTICREW M., SHEKELLE P. STEWART L.A. (2015), "Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement", *Systematic Reviews*, vol. 4, n. 1, pp. 1.
- MOORMAN C., MATULICH E. (1993), "A model of consumers' preventive health behaviors: The role of health motivation and health ability", *Journal of Consumer Research*, vol. 20, n. 2, pp. 208-228.
- MOOSAVI-MOVAHEDI A.A., MOUSAVI M.S., RIAZI G. (2021), "Healthier lifestyle by considering psychoemotional dimension of wellness", *Rationality and Scientific Lifestyle for Health*, pp. 155-166.
- MORGANTI P., MORGANTI G., MEMIC A., COLTELLI M.B., CHEN H.D. (2021), "The new renaissance of beauty and wellness through the green Economy", *Latest Trends Text. Fashion*, vol. 4, pp. 749-760.
- NUNES R., SILVA V.L., CONSIGLIO-KASEMODEL M.G., POLIZER Y.J., SAES M.S.M., FAVARO-TRINDADE C.S. (2020), "Assessing global changing food patterns: A country-level analysis on the consumption of food products with health and wellness claims", *Journal of Cleaner Production*, vol. 264, 121613.
- O'BRIEN M.C., MCCONNOR A., HOLLYWOOD L.E., CUSKELLY G.J., BARNETT J., RAATS M., DEAN M. (2015), "Let's talk about health: shoppers' discourse regarding health while food shopping", *Public Health Nutrition*, vol. 18, n. 6, pp. 1001-1010.
- OLIVER M.D., BALDWIN D.R., DATTA S. (2018), "Health to wellness: A review of wellness models and transitioning back to health", *The International Journal of Health, Wellness and Society*, vol. 9, n. 1, pp. 41.
- PAPPALARDO G., CARNEMOLLA T.M., LA VIA G. (2016), "Factors affecting purchasing process of functional foods", *Calitatea*, vol. 17, n. S1, pp. 229.
- PATEL P.C., WOLFE M.T. (2020), "Not all paths lead to Rome: Self-employment, wellness beliefs, and well-being", *Journal of Business Venturing Insights*, vol. 14, e00183.
- PETRESCU D.C., VERMEIR I., PETRESCU-MAG R.M. (2020), "Consumer understanding of food quality, healthiness, and environmental impact: A cross-national perspective", *International journal of environmental research and public health*, vol. 17, n. 1, pp. 169.
- PREDANÓCYOVÁ K., KUBICOVÁ L., PINDEŠOVÁ D. (2023), "Functional meat products: Examining attitudes and preferences of Slovak consumers", *Journal of Central European Agriculture*, vol. 24, n. 4, pp. 953-967.

- SCHUSTER T.L., DOBSON M., JAUREGUI M., BLANKS R.H. (2004), "Wellness lifestyles I: A theoretical framework linking wellness, health lifestyles, and complementary and alternative medicine", *The Journal of Alternative & Complementary Medicine*, vol. 10, n. 2, pp. 349-356.
- SEAL D.B., BAG S. (2022), "Constituents affecting brand loyalty of sustainable beauty and personal care products", *Marketing and Management of Innovations*, vol. 13, n. 3, pp. 66-77.
- SETIYANINGRUM A., BATU K.L. (2019), "What Triggers the Purchase of Green Products in Indonesia?", *Calitatea*, vol. 20, n. 172, pp. 136-142.
- SHORT D. (2005), "When science met the consumer: the role of industry", *The American Journal of Clinical Nutrition*, vol. 82, n. 1, pp. 256S-258S.
- SINGH V.K., SINGH P., KARMAKAR M., LETA J., MAYR P. (2021), "The journal coverage of Web of Science, Scopus and Dimensions: A comparative analysis", *Scientometrics*, vol. 126, pp. 5113-5142.
- SMITH A.P. (2005), "The concept of well-being: relevance to nutrition research", *British Journal of Nutrition*, vol. 93, n. S1, pp. S1-S5.
- STOEWEEN D.L. (2015), "Health and wellness", *The Canadian veterinary journal*, vol. 56, n. 9, pp. 983.
- STOK F.M., HOFFMANN S., VOLKERT D., BOEING H., ENSENAUER R., STELMACH-MARDAS M., SUPHASKULDAMRONG W., GAN C., COHEN D.A. (2021), "Consumers' Risk Perceptions, Risk Reduction Strategies and Willingness to Pay Premium Prices for Organic Products". In *20216th International Conference on Business and Industrial Research (ICBIR)* (pp. 31-36), IEEE.
- URBONAVIČIUS S., DIKČIUS V., PETRAUSKAS A. (2010), "Impact of Ethnocentrism on buyer's choice of organic food products", *Paper presented at the 6th International Scientific Conference Business and Management 2010*, Vilnius.
- VAN LOO E.J., CAPUTO V., LUSK J.L. (2020), "Consumer preferences for farm-raised meat, lab-grown meat, and plant-based meat alternatives: Does information or brand matter?", *Food Policy*, vol. 95, 101931.
- WICKRAMARATHNE P.C., PHUOC J.C., ALBATTAT A.R.S. (2020), "A review of wellness dimension models: For the advancement of the society", *European Journal of Social Sciences Studies*.
- WORLD HEALTH ORGANIZATION (2011), "Global status report on noncommunicable diseases 2010". Geneva, Switzerland: *World Health Organization*.
- YUSMARNI Y., PUTRI A., PALOMA C. (2021), "Factors affecting consumer's purchasing decision of vegetables during Covid-19 pandemic in Padang, West Sumatera". In *IOP Conference Series: Earth and Environmental Science* (Vol. 741, No. 1, p. 012069), *IOP Publishing*.

Taste-Makers Narratives: Analyzing the Effect of Food Influencers on Home Cooks

FRANCESCO SMALDONE¹ GIADA MAINOLFI²

Framing of the research. In the digital age, the culinary landscape has undergone a significant transformation, largely influenced by the advent of Social Media influencers in the food and dining sector. The culinary world is no longer confined to the pages of cookbooks or the walls of Michelin-starred restaurants. Instead, it has seamlessly integrated itself into the fabric of Social Media platforms, captivating audiences worldwide through the lens of food influencers (Abell & Wisbas, 2023). These individuals, armed with little more than a smartphone and a passion for food, have become the modern-day storytellers of gastronomy, captivating audiences with tantalizing images, captivating narratives, and irresistible recipes (Lee et al., 2021). From the bustling streets of Tokyo to the quaint cafes of Paris, Social Media has become the global stage where culinary delights are showcased, celebrated, and shared. Whether it is a meticulously plated dish crafted by a renowned chef or a humble home-cooked meal prepared by an everyday enthusiast, the democratization of food culture has empowered individuals to explore, experiment, and engage with cuisine in unprecedented ways (Qutteina et al., 2019). The rise of food influencers on platforms like Instagram, YouTube, and TikTok has reshaped the dynamics of the food industry, blurring the lines between consumers and creators (Coates et al., 2020; De Jans et al., 2021). These influencers, ranging from seasoned chefs to self-taught culinary enthusiasts, have leveraged Social Media to share their culinary creations, tips, and dining experiences with a global audience. This phenomenon has not only democratized gourmet culture but also blurred the traditional boundaries between consumer and producer. What began as a grassroots movement fueled by a love for food and a desire to share culinary experiences has evolved into a multimillion-dollar industry, where partnerships, sponsorships, and brand collaborations abound (De Keyzen, 2023).

The premise of this research is to explore the extent to which Social Media influencers have impacted consumer behavior in the food industry, transforming them into “prosumers” - individuals who are not just passive consumers but also active creators, recreating influencer-endorsed recipes at home or advocating for their inclusion in restaurant menus for an enhanced dining experience (Wu et al., 2023). This study delves into the dynamics of this transformation, examining the motivations behind consumer engagement with food influencers and the consequent effects on the food and dining industry (Smaldone et al., 2021). By unraveling these motivations, the research seeks to elucidate the ripple effects on the food and dining industry, including shifts in consumer preferences, dining trends, and culinary innovation (Mainolfi et al., 2022).

Purpose of the paper. At its core, the purpose of this paper is a quest to unravel the intricate interplay between Social Media influencers and the food industry, understanding the implications of this symbiotic relationship on consumer behavior, dining trends, and culinary culture at large (Kei, 2024).

Through several methodologies and data-driven insights, our aim is twofold: first, to dissect the mechanisms through which food influencers wield influence over their audiences, deciphering the underlying motivations, narratives, and emotional triggers that drive consumer engagement with influencer-generated content (Barusman & Suwandi, 2020). By peeling back the layers of Social Media discourse, we seek to uncover the hidden patterns and trends that shape consumer preferences, behaviors, and perceptions in the realm of food (Packer et al., 2022). Second, we endeavor to contextualize our findings within the broader socio-economic scenario, probing the ripple effects of influencer culture on the food industry and trends (Folkvord et al., 2020). By examining the impact of influencer endorsements on consumers, the transformative potential of influencer-driven dining preferences on restaurant menus, and the catalytic role of influencers in fostering culinary innovation and diversity, we aim to provide stakeholders with actionable insights to navigate the evolving landscape of food marketing and consumer engagement.

In essence, this paper serves as an exploration of the food influencers universe in the digital noise, offering a nuanced understanding of the dynamics at play in the realm of food influencer marketing (Campbell & Farrell, 2020). By shedding light on the opportunities, challenges, and ethical considerations inherent in this burgeoning phenomenon, we aspire to equip scholars, practitioners, and policymakers alike with the knowledge and foresight needed to harness the transformative potential of Social Media influencers for the food industry and society at large.

¹ Assistant Professor of Management – Marconi University of Rome
e-mail: f.smaldone@unimarconi.it

² Associate Professor of Management – University of International Studies of Rome (UNINT)
e-mail: giada.mainolfi@unint.eu

Methodology. Amidst this cultural shift, it becomes imperative to explore the multifaceted impact of food influencers on consumer behavior and the broader food and dining landscape. This research endeavors to delve deep into the nuances of this phenomenon, employing a multifaceted approach that combines text mining, topic modeling, sentiment analysis, and predictive analytics (Tanwar et al., 2022). By harnessing the knowledge derived of data extracted from Social Media platforms, particularly Instagram, this study seeks to unravel the motivations behind consumer engagement with food influencers. Data were retrieved from profiles of two eminent food influencers (Chopra et al., 2018). Through text mining techniques, we aim to decipher the underlying themes, trends, and sentiments prevalent in influencer-generated content, shedding light on the factors that drive consumer preferences and behaviors in the realm of food (Aggarwal & Zhai, 2012).

Notwithstanding, employing topic modeling methodologies will allow us to identify key themes and topics that resonate with audiences, providing insights into the evolving trends and narratives shaping the culinary discourse on Social Media (Gupta & Lehal, 2009). Coupled with sentiment analysis, which discerns the emotional tone and reactions associated with influencer content, we can gain a comprehensive understanding of the consumer sentiment towards different culinary experiences, cuisines, and food products endorsed by influencers. Furthermore, by leveraging predictive analytics, this research aims to forecast future trends and developments in the food industry, informed by the evolving preferences and behaviors of consumers influenced by Social Media influencers. By extrapolating patterns and correlations from historical data, we can anticipate shifts in consumer demand, dining preferences, and market dynamics, thereby empowering stakeholders in the food industry to adapt and innovate in response to emerging trends (Schoenherr & Speier-Pero, 2015).

In essence, this research endeavors to unravel the intricate web of influence woven by food influencers on Social Media platforms, elucidating the transformative impact they wield on consumer behavior, dining trends, and the broader culinary landscape (Storey & Song, 2017). Through empirical analysis and data-driven insights, we aim to understand the pathways through which Social Media influencers shape the way we eat, cook, and experience food in the digital age.

Results. The research analyzed corpora from the two selected food influencers via text analysis, designed to investigate the corpus frequencies via stylometry and frequency count. To assess the weight of term frequencies (tf), and then perform several big data techniques, as described in the Methodology.

Results from text mining revealed several differences and similarities between both the influencers' profiles. In particular, differences were found in the commented recipes and items, and similarities were found in terms of engagement and intentions. Primary text entities concerning the first influencer were: happy birthday (tf = 7164), bsk burger (tf = 4284), lamb sauce (tf = 3394), merry Christmas (tf = 2672), looks good (tf = 2546), looks amazing (tf=2543), gnocchi pasta (tf=2477), beef wellington (tf=2424), idiot sandwich (tf=2296), pizza dough (tf=1983), and baked salmon (tf=1849). The most frequent terms in the corpus of the second influencer were the following: looks delicious (tf = 47336), great idea (tf = 44571), looks amazing (tf = 40152), mashed potatoes (tf = 31217), gluten free (tf = 27583), find recipe (tf = 27583), lentil soup (tf = 27583), pasta recipe (tf = 27583), chocolate cookies (tf = 27583), banana bread (tf = 27583), and thanksgiving special (tf = 27583). Concerning Topic Modeling, text entities were clustered in four groups.

Topics for the first influencer were the following: (a) Gourmet Creations: this topic encompasses sophisticated dishes such as "bsk burger," "lamb sauce," and "beef wellington," reflecting the influencer's focus on elevated culinary experiences. (b) Festive Celebrations: terms like "happy birthday" and "merry Christmas" dominate in the topic, indicating content centered around special occasions and seasonal festivities. (c) Visual Appeal: Expressions like "looks good" and "looks amazing" suggest a strong emphasis on visual presentation and aesthetic appeal in the influencer's posts. (d) Diverse Palates: This topic includes mentions of a variety of dishes, from "gnocchi pasta" to "pizza dough" and "baked salmon," showcasing the influencer's versatility in culinary exploration.

The second influencer revealed the following topics: (a) Sensory Delights: Terms like "looks delicious" and "great idea" indicate a focus on enticing and appetizing visuals, appealing to the senses of the audience. (b) Comfort Cuisine: This topic revolves around comforting dishes like "mashed potatoes," "chocolate cookies," and "banana bread," evoking feelings of warmth and nostalgia. (c) Dietary Diversity: With mentions of "gluten-free" and "lentil soup," this topic highlights the influencer's commitment to catering to diverse dietary preferences and lifestyles. (d) Seasonal Specialties: Terms such as "thanksgiving special" suggest a thematic focus on seasonal and holiday-inspired recipes, resonating with the audience's culinary traditions and celebrations.

Focusing on sentiment analysis, results show that in the first corpus 86% of comments were positive, 10% were neutral, and 4% were negative. In the second corpus comments were 92% positive, 4% neutral, and 4% negative.

The results from the text mining analysis offer valuable insights into the distinctive profiles of the two influencers under scrutiny. Notably, differences were observed in the types of recipes and items frequently mentioned by each influencer, while similarities emerged in terms of audience engagement and underlying intentions. For the first influencer, primary text entities revolved around specific dishes such as "bsk burger," "lamb sauce," and "beef wellington," alongside common expressions like "happy birthday" and "merry Christmas.". Conversely, the second influencer's corpus featured prevalent terms like "looks delicious," "great idea," and "mashed potatoes," indicative of a different culinary focus. For the first influencer, the emphasis seemed to be on gourmet creations, festive celebrations, visual appeal, and diverse palates, reflecting a multifaceted approach to culinary content creation. The second influencer's topics centered around sensory delights, comfort cuisine, dietary diversity, and seasonal specialties, highlighting a focus on appealing to diverse sensory experiences and catering to varied dietary preferences. Despite these variances, sentiment analysis revealed overwhelmingly positive feedback for both influencers, underscoring the effectiveness of their content in resonating with their respective audiences.

Research limitations. Considering the complexities of food influencer effects, it is essential to acknowledge the inherent limitations that shape the scope and breadth of our research endeavor.

First and foremost, while Social Media platforms like Instagram offer a rich repository of data ripe for analysis, it is important to recognize the inherent biases and limitations inherent in such datasets. The algorithms governing content visibility and engagement on these platforms may skew our analysis towards content that is more popular or algorithmically favored, potentially overlooking niche or marginalized voices within the influencer community.

Additionally, the nature of Social Media discourse is inherently dynamic and ephemeral, subject to rapid shifts in trends, narratives, and audience preferences. As such, our analysis may capture only a snapshot of the ever-evolving landscape of food influencer culture, potentially missing out on emerging trends or nuances that may have profound implications for our understanding of consumer behavior and industry dynamics.

Nevertheless, the methodologies employed in this research, including text mining, topic modeling, sentiment analysis, and predictive analytics, are not without their limitations. While these techniques offer powerful tools for extracting insights from large-scale datasets, they are not immune to errors, biases, or misinterpretations. As such, our findings should be interpreted with caution, recognizing the inherent uncertainties and limitations inherent in the analytical process. Our research is inherently limited by the availability and quality of data accessible to us. Efforts have been made to collect and analyze data from a diverse range of sources, including influencer-generated content, consumer feedback, and market trends, it is possible that certain data points may be missing or incomplete, potentially limiting the depth and accuracy of our analysis.

Finally, it is important to acknowledge the broader socio-cultural context within which our research is situated. Influencer culture is deeply intertwined with broader trends in consumerism, digital media, and celebrity culture, making it challenging to disentangle the unique impact of influencers on consumer behavior from the myriad other factors at play. As such, while our research endeavors to shed light on the transformative power of food influencers, it is but one piece of a much larger puzzle, leaving ample room for further exploration and inquiry.

Managerial implications. Within the landscape of food influencer culture, our research unveils profound managerial implications that warrant strategic consideration and thoughtful implementation by stakeholders across the food industry. The influence of Social Media influencers in the food and dining sector signifies a shift towards a more engaged and participatory culinary culture, where consumers are empowered to become creators. This transformation has profound implications for consumer behavior, dining trends, and the culinary industry at large. As this trend continues to evolve, further research is needed to understand its long-term impacts on the food landscape and consumer identities as prosumers. Primarily, our findings underscore the pivotal agency wielded by influencers in shaping consumer preferences and behaviors within the contemporary digital milieu. For food brands and culinary enterprises, this implication constitutes a compelling imperative to harness influencer partnerships as strategic instruments for brand propagation, product endorsement, and audience engagement. By discerning influencers whose ethos and aesthetic resonate harmoniously with their brand identity, companies can efficaciously magnify their outreach and resonance among target demographics, thereby fostering brand allegiance and propelling sales figures.

In specie, our insights furnish actionable intelligence for strategic deliberation in the domains of product innovation and promotional endeavors. By discerning the salient themes, trends, and affective tonalities prevalent within influencer-generated content, brands can adeptly tailor their product portfolios and promotional initiatives to align seamlessly with consumer predilections and cultural zeitgeist. Whether it entails capitalizing upon emergent culinary vogues endorsed by influencers or aligning brand messaging with the aspirational ideals championed by prominent influencers, enterprises stand to gain a competitive edge by attuning themselves to the evolving contours of influencer discourse.

Besides, our research underscores the exigency of authenticity, transparency, and ethical rectitude in the realm of influencer-brand collaborations. As contemporary consumers grow increasingly discerning and skeptical of contrived promotional content, brands are impelled to prioritize authentic, substantive partnerships with influencers who embody their brand ethos organically. By cultivating genuine connections and narratives that resonate authentically with audiences on an intimate level, brands can engender trust, credibility, and enduring loyalty amidst an era beset by digital clamor and commercial commodification. Additionally, our findings accentuate the latent potential of influencer marketing to engender tangible impacts for enterprises ensconced within the gastronomic landscape. Considering the latest trends, through judicious utilization of hyper-local influencers espousing the virtues of neighborhood gastronomic establishments and artisanal purveyors, small-scale enterprises could expand their sphere of influence and draw fresh patronage within an increasingly competitive marketplace milieu. Furthermore, collaborative initiatives between influencers and local businesses can evoke a sense of communal camaraderie and cultural verisimilitude, thereby enriching the gastronomic experience for consumers and fortifying the economic vitality of ecosystems.

In sum, our research serves as a clarion call to action, accentuating the transformative potential inherent within the nexus of food influencers and brand engagement. By embracing the strategic imperatives and negotiating the attendant challenges embedded within influencer culture, enterprises stand poised to unlock novel pathways for growth, innovation, and market differentiation amidst the tumultuous terrain of the digital epoch.

Originality of the paper. Considering the burgeoning discourse surrounding Social Media influencers and their implications on consumer behavior, our research distinguishes itself through methodological complexity and conceptual innovation in unpacking the nuanced dynamics of food influencer culture.

Primarily, our study adopts an integrative analytical framework encompassing text mining, topic modeling, sentiment analysis, and predictive analytics to elucidate the multifaceted facets of influencer-mediated consumer behavior within the culinary domain. By synthesizing these disparate methodologies, we endeavor to furnish a nuanced comprehension of the underlying motivations, trends, and affective dimensions pervading influencer-generated content, thereby elucidating the mechanisms through which influencers exert influence over consumer preferences and gastronomic trends. Thus, our research contributes to the extant scholarly discourse by contextualizing the phenomenon of food influencer culture within the broader socio-economic milieu, interrogating its ramifications for local enterprises, culinary innovation, and ethical consumption paradigms. Through an examination of the repercussions of influencer endorsements on consumers and the transformative potential of influencer-driven gastronomic trends on industry dynamics, our study proffers novel insights into the manifold ways in which influencers shape the gastronomic landscape.

Specifically, our inquiry extends beyond empirical observations to enrich theoretical frameworks pertaining to consumer behavior in the digital epoch, delineating the concept of “prosumerism” - wherein consumers transcend their passive role as mere recipients of influencer content to actively participate in the creation and dissemination of culinary experiences. Through a fusion of empirical inquiry and theoretical synthesis, we aspire to illuminate the transformative implications of this paradigm shift towards prosumerism for consumer identities, industry paradigms, and broader socio-cultural narratives.

Concluding, our research offers seminal contributions to the scholarly discourse surrounding the transformative agency of food influencers within the contemporary gastronomic landscape. By embracing innovative methodologies and conceptual frameworks, we endeavor to push the frontiers of scholarly inquiry and engender a deeper understanding of the intricate interplay between digital media, consumer behavior, and culinary culture.

Keywords: Digital Marketing, Influencer Marketing; Prosumers; Sentiment Analysis; Text Mining.

References

- ABELL A., BISWAS D. (2023), “Digital engagement on social media: how food image content influences social media and influencer marketing outcomes”, *Journal of Interactive Marketing*, vol. 58, n. 1, pp. 1-15.
- AGGARWAL C.C., ZHAI C. (Eds.), (2012), *Mining text data*. Springer Science & Business Media.
- BARUSMAN A.R.P., SUWANDI F. (2020), “The impact of lifestyle, social media marketing, and influencer marketing on purchase decision for Ayam Geprek culinary business”, *International Journal of Psychosocial Rehabilitation*, vol. 24, n. 9, pp. 2854-2860.
- CAMPBELL C., FARRELL J.R. (2020), “More than meets the eye: The functional components underlying influencer marketing”, *Business horizons*, vol. 63, n. 4, pp. 469-479.
- CHOPRA S., GOLAB L., PRETTI T.J., TOULIS A. (2018), “Using data mining methods for research in co-operative education”, *International Journal of Work-Integrated Learning*, vol. 19, n. 3, pp. 297-310.
- COATES A.E., HARDMAN C.A., HALFORD J.C.G., CHRISTIANSEN P., BOYLAND E.J. (2020), “It’s just addictive people that make addictive videos”: children’s understanding of and attitudes towards influencer marketing of food and beverages by YouTube video bloggers”, *International Journal of Environmental Research and Public Health*, vol. 17, n. 2, p. 449.
- DE JANS S., SPIELVOGEL I., NADERER B., HUDDERS L. (2021), “Digital food marketing to children: How an influencer’s lifestyle can stimulate healthy food choices among children”, *Appetite*, vol. 162, p. 105182.
- DE KEYZER F. (2023), “#ThisIsSustainable: The Effect of Disclosures in Influencer Marketing for Sustainable Food”, *Sustainability*, vol. 15, n. 12, p. 9501.
- FOLKVORD F., ROES E., BEVELANDER K. (2020), “Promoting healthy foods in the new digital era on Instagram: an experimental study on the effect of a popular real versus fictitious fit influencer on brand attitude and purchase intentions”, *BMC public health*, vol. 20, pp. 1-8.
- GUPTA V., LEHAL G.S. (2009), “A survey of text mining techniques and applications”, *Journal of Emerging Technologies in Web Intelligence*, vol. 1, n. 1, pp. 60-76.
- KEI C.K. (2024), “Influencer Marketing to Youth: The Impact of Instagram Influencer on Healthy Food Choices Among Youth”, *Journal of Communication, Language and Culture*, vol. 4, n. 1, pp. 108-125.
- LEE P.Y., KOSEOGLU M.A., QI L., LIU E.C., KING B. (2021), “The sway of influencer marketing: Evidence from a restaurant group”, *International Journal of Hospitality Management*, vol. 98, p. 103022.
- MAINOLFI G., MARINO V., RESCINITI R. (2022), “Not just food: Exploring the influence of food blog engagement on intention to taste and to visit”, *British Food Journal*, vol. 124, n. 2, pp. 430-461.
- PACKER J., RUSSELL S.J., SIOVOLGYI G., MCLAREN K., STANSFIELD C., VINER R.M., CROKER H. (2022), “The impact on dietary outcomes of celebrities and influencers in marketing unhealthy foods to children: a systematic review and meta-analysis”, *Nutrients*, vol. 14, n. 3, p. 434.
- QUTTEINA Y., HALLEZ L., MENNES N., DE BACKER C., SMITS T. (2019), “What do adolescents see on social media? A diary study of food marketing images on social media”, *Frontiers in psychology*, vol. 10, p. 491755.
- SCHOENHERR, T., SPEIER-PERO, C. (2015), “Data science, predictive analytics, and big data in supply chain management: Current state and future potential”, *Journal of Business Logistics*, vol. 36, n. 3, pp. 120-132.
- SMALDONE F., D’ARCO M., MARINO V., PELLICANO M. (2021, April), *Let Thy Food Be Thy Medicine: Exploring the Impact of Covid-19 Pandemic on the Online Food Delivery Industry*. In The International Research & Innovation Forum (pp. 383-392), Cham: Springer International Publishing.
- STOREY V.C., SONG I.Y. (2017), “Big data technologies and management: What conceptual modeling can do”, *Data & Knowledge Engineering*, vol. 108, n. 3, pp. 50-67.

- TANWAR A.S., CHAUDHRY H., SRIVASTAVA M.K. (2022), “Trends in influencer marketing: A review and bibliometric analysis”, *Journal of Interactive Advertising*, vol. 22, n.1, pp. 1-27.
- WU Y., YANG S., LIU D. (2023), “The effect of social media influencer marketing on sustainable food purchase: perspectives from multi-group SEM and ANN analysis”, *Journal of Cleaner Production*, vol. 416, pp. 137890.

Building a Better Future: The University Activism for Societal Wellbeing

ANTONELLA CAMMAROTA¹ FRANCESCA AVALLONE² VITTORIA MARINO³
RICCARDO RESCINITI⁴

Framing of the research. Our society is very much in crisis and is addressing complex, urgent, and deeply polarized social challenges (Podnar and Golob, 2024; Weber et al., 2023). Climate change, immigration, discrimination, health disparities, access to education, the gender gap, persistent poverty in certain regions, police violence, civil rights, ongoing conflicts like the Russia-Ukraine war (D'Arco et al., 2023), Israel-Palestine, and the increasing geopolitical tensions are issues that deeply concern public opinion. These challenges contribute to a fragmented and discordant public sentiment (Vredenburg et al., 2020), heightening individuals' susceptibility.

Governments appear either disinterested or incapable of effectively addressing these issues (Radanielina Hita and Grégoire, 2023) and the goals of the Agenda 2030 seem increasingly distant and difficult to achieve. Consequently, new players have emerged on the scene, such as activist brands. However, they encounter troubles (Bhagwat et al., 2020) linked to the fact that consumers usually perceive brand activism as a mere marketing ploy to increase their sales and power (Mirzaei et al., 2022), leading to a phenomenon known as "woke-washing" (Sobande, 2019).

In this scenario, new activists seem to emerge who act differently and pursue high-social purposes. Universities are stepping into the forefront as pivotal agents of social change, leveraging their long-standing influence as beacons of knowledge, ethics, and societal norms by exploiting their highly specialized skills and expertise (Eschle, 2006). Transitioning beyond traditional roles of social responsibility, universities are beginning to adopt activist stances to drive societal transformation (Barnett, 2021), akin to brands in the corporate world that engage in activism. This shift sees universities not just as places of learning but as active participants in addressing societal issues, effectively becoming living laboratories for social good (Choudry, 2020).

Drawing parallels with the concept of brand activism (Sarkar and Kotler, 2020), universities are applying similar strategies to fulfill societal needs. Just like corporations have used "brand activism" (Ahmad et al., 2024; Andersen and Johansen, 2024; Mukherjee and Althuizen, 2020) to address and influence socio-political issues, universities are now harnessing their intellectual resources, research capabilities, and community connections to engage in and promote social activism. This includes taking public stances on controversial issues, engaging in policy advocacy, and implementing programs that drive change in the society (Wannow et al., 2023; Bhagwat et al., 2020).

Given the main goal of the activist strategy, which aims to bring about social change by influencing the intentions, attitudes, and behaviors of stakeholders (Eilert and Nappier Cherup, 2020), universities also appear to employ the public engagement strategy to actively involve stakeholders in addressing significant these issues on a broader scale.

Engagement is a strategic approach designed to interact, listen, and actively involve stakeholders on emotional, cognitive, and ultimately behavioral levels (Hollingshead et al., 2018). Universities frequently employ this strategy to address their increasingly relevant "Third Mission". Nowadays, universities seem to incorporate activist goals into their dynamic public engagement systems as useful tools to implement their social role (Lo Presti et al., 2023). In fact, they not only spend themselves on social, environmental, political, and economic issues but also use university public engagement systems in order to engage students, faculty, staff, the local community, businesses, non-governmental organizations (NGOs), and government institutions (Hart and Northmore, 2011).

Furthermore, the activist strategy is intrinsically public and needs to be communicated through every visible means (Korschun, 2021). Considering the paramount significance of institutional communication for universities, it emerges as a fitting channel to convey activist efforts. University websites, in particular, serve as crucial platforms for communicating the institution's identity, objectives, mission, goals, and updates (Marino and Lo Presti, 2020; Steiner et al., 2013). Moreover, institutional communication stands out as a powerful engagement factor for higher education institutions (Rodríguez-Gómez et al., 2022). By leveraging their online presence in this manner, universities not only enhance their stakeholder engagement but also solidify their standing and reputation as influential agents of social change. This evolution underscores the significant role that online communication plays in higher education today, reflecting a broader

¹ University of Sannio
e-mail: cammarota@unisannio.it

² University of Sannio
e-mail: f.avallone@studenti.unisannio.it

³ University of Sannio
e-mail: vmarino@unisannio.it

⁴ University of Sannio
e-mail: resciniti@unisannio.it

shift towards a more engaged, proactive university model that actively contributes to societal discourse and transformation (Foroudi et al., 2020).

Purpose of the paper. This study is grounded in two pivotal strands of literature that have garnered considerable attention from both researchers and practitioners: “brand activism” and “public engagement”. It aims to first understand whether or not activism is implemented by universities; second, to map and identify its pillars and key factors; and finally, to provide a first definition of university activism. This research analyzes the emerging phenomenon of activist universities, underlining how high education institutions are evolving their role and becoming increasingly catalysts for social good by implementing engagement and activism strategies. Therefore, based on the study’s main purpose of defining university activism and mapping its pillars, the following research questions guided our analysis:

Rq₁. Are universities starting to act as activists in driving social change?

Rq₂. How do universities engage in activism to impact the common good?

Rq₃. How do universities communicate these efforts?

Rq₄. Finally, how can university activism be defined?

Methodology. This research adopts a qualitative by utilizing multiple case studies (Fuchs and Robinson, 2023; Yin, 2009; Eisenhardt, 1989); thus, 30 websites of high-ranked American universities were analyzed. Based on the purpose of this study and the research questions, we have deemed the analysis of university websites as the most suitable method for comprehending how universities participate in activism and utilize institutional communication to disseminate it while engaging stakeholders. Institutional websites serve as a direct link between universities and their stakeholders (Lo Presti and Marino, 2020), rendering them indispensable for content analysis in this context.

Moreover, we focused the analysis on the American context since it presents a strongly polarized society and a historical role as the birthplace of significant social movements, profound struggles, and activism. Notably, brand activism itself originated in the American context, and a substantial portion of the research in this field is conducted within the United States (Cammarota et al., 2022).

Data collection involved systematically categorizing information into an Excel matrix, structured around the research questions and study purpose. The researchers applied a funnel approach, starting with the evaluation of university homepages and progressing to deeper levels to obtain a comprehensive understanding (Krippendorff, 2013). The analysis of the university sample underwent two rounds of examination by the researchers to enhance the reliability and robustness of the data collection process, ensuring thoroughness and accuracy.

Content analysis was performed for data analysis (Hsieh and Shannon, 2005), drawing inspiration from the “4W of Brand Activism” framework (Cammarota et al., 2023). Coding principles guided data analysis following Saldana (2013). Researchers conducted independent data analysis (Wang et al., 2021). Subsequently, the coding process underwent thorough examination and discussion to detect any mistakes. The results were then deliberated within group discussions for comprehensive evaluation.

Results. The findings show intriguing insights that serve as a foundation for developing the concept of university activism by providing some foundational pillars and a primary definition of university activism. Firstly, the universities under scrutiny exhibit varying degrees of involvement in activist actions, revealing a phenomenon that is prevalent in practice yet remains underdeveloped in the existing literature. Our first investigation allows for the identification of critical aspects and key factors of this new phenomenon (Rq₁).

Secondly, results show that universities undertake diverse activist endeavors to contribute to societal well-being and involve their stakeholders in these efforts. Specifically, they utilize education and research to “disseminate” knowledge and raise awareness of controversial issues. Furthermore, universities actively “promote” their initiatives through various means such as celebrations, memorial days, or training sessions on social matters, intending to engage stakeholders on cognitive, emotional, and behavioral levels. Ultimately, they seek to “push” concrete actions among stakeholders through avenues like donations, volunteering, and other socially impactful activities (Rq₂).

Thirdly, findings highlight that universities strongly communicate their activist efforts through the university’s official website, social media platforms, and other relevant channels (Rq₃).

Lastly, to fulfil the purpose of this study, we provide a first definition of university activism based on the obtained results. Specifically, university activism is “a strategy to act on contentious socio-political, economic, and environmental challenges through disseminating, promoting, and pushing actions, all publicly declared aimed at engaging stakeholders in social change” (Rq₄).

The universities analyzed allowed us to highlight the pillars, practices and aims of university activism. For instance, “The Pace Center for Civic Engagement” at “Princeton University” exemplifies university activism by recognizing and promotes a broad spectrum of university advocacy organizations. These groups, ranging from those advocating for prison education reform to those focused on social entrepreneurship and healthcare equity, tackle a variety of important societal issues. The recognition process ensures these organizations receive the sponsorship needed to move their ideas into actionable outcomes. Similarly, the “Washington University” has established an “Activism” section within its academic offerings, dedicating resources to research and study across departments like Ethnic Studies, Gender Studies, and Law, Societies, and Justice. This approach not only facilitates student involvement in activism but also integrates these disseminating efforts into the university’s academic framework, further emphasizing the role of educational institutions in societal change.

Expanding upon the collaborative landscape of university activism, these institutions are not only nurturing vibrant internal communities such as centers and affinity groups dedicated to social change but are also proactively seeking

external alliances that enhance their impact on societal challenges. Through forging strategic partnerships with a spectrum of organizations ranging from local community groups and NGOs to industry leaders and innovative startups, universities amplify the reach and effectiveness of their activism. These collaborations enable a unified approach to addressing the multifaceted nature of today's societal issues, leveraging shared resources, expertise, and networks.

For instance, “Massachusetts Institute of Technology” (MIT) through its “MIT Solve initiative”, collaborates with technologists, social entrepreneurs, and policymakers to address global challenges. This platform exemplifies how universities can serve as hubs for innovation, bringing together diverse actors to work on sustainable urban environments and other pressing issues.

The ecosystem of involved actors in these partnerships is diverse, bringing together a dynamic assembly of academic staff, students, alumni, and various external stakeholders. From this perspective, the “University of California, Berkeley” (UC Berkeley), through its “Berkeley Food Institute”, exemplifies university-led activism by partnering with community organizations and local governments to transform the food system. Focused on sustainable agriculture, food equity, and community health, the initiative engages in research, policy advocacy, and community projects to improve food access and promote sustainable practices. By connecting local farmers with food banks and schools, and advocating for policies supporting food safety, labor rights, and environmental sustainability, UC Berkeley demonstrates how universities can act as powerful agents of social change, advocating and pushing for a more equitable and sustainable food system.

This collective effort fosters a rich tapestry of perspectives and strategies, driving forward initiatives that are inclusive and impactful. The target audience of these collaborative ventures extends beyond the immediate university community, aiming to engage prospective students, policymakers, industry partners, and the broader public. Such inclusivity ensures that the activism spearheaded by universities resonates across multiple spheres of society, engaging a wide range of participants in dialogue and action. These partnerships not only enhance the capacity for social change but also position universities as pivotal nodes within a larger network of societal transformation, where the convergence of education, innovation, and activism ignites progressive developments across communities and beyond.

Research limitations. This study has some limitations that can serve as avenues for future research. First, this study was confined to the United States, with an analysis focused on 30 highly ranked universities. Consequently, more research is needed including other countries and universities. This expansion is essential to validate, confirm, and generalize the results obtained, ensuring a more comprehensive understanding of the phenomenon.

Second, this study exclusively concentrates on websites, overlooking the fact that activism is predominantly executed through social media platforms. Therefore, future research should explore whether and how universities communicate their activist initiatives specifically on social media, examining the nuances and strategies employed in this digital space. Third, it is required to gain a nuanced understanding of the actions undertaken by activist universities, particularly mapping their execution, the involved stakeholders, and the specific target audience they aim to address.

Fourth, there is a crucial need to comprehend the outcomes of university activism, both in terms of its impact on the institution itself and its influence on civil society.

Finally, the construct of university activism should be fortified through additional research, coupled with the application of appropriate quantitative methods for operationalization.

Managerial implications. The present study has both theoretical and managerial implications. From a literature standpoint, this study not only identifies but also “labels” a novel phenomenon. It offers a first definition, highlighting crucial aspects and key elements that characterize it. Consequently, it establishes itself as a guiding reference for researchers to address future studies on this unexplored phenomenon.

Instead, from a managerial perspective, this study stresses the central role that universities can play in instigating social change, presenting an overlooked perspective for practitioners. While the phenomenon is undoubtedly gaining traction in the United States, it remains relatively obscure to the general public and other institutions.

Thus, this article is a “warning” for practitioners by offering them the best practices to implement in universities to address societal change and engage in activism. Additionally, insights are provided to effectively conduct efforts, enhancing universities' roles as catalysts for social transformation.

The relevance of strategic communication is stressed to obtain stakeholder engagement. Moreover, the study highlights the importance of building partnerships with local communities, non-profit organizations, and other educational institutions to amplify the impact of activism efforts. Such collaborations can enhance the university's ability to address complex social issues effectively and sustainably. Moreover, this study highlights the crucial role of universities in civil society, offering valuable insights for policymakers.

Originality of the paper. Grounded in two relevant and strongly interesting literature fields - public engagement and brand activism - this research seems to be pioneering in its investigation of university activism. To the best of our knowledge, this is the first study to intercept a phenomenon already in progress but not yet understood within the scholarly community.

Thus, the present research identifies university activism as a new social role for higher education, aimed to drive social change. By providing a first definition of university activism and identifying its key factors, this research lays the groundwork for a deeper understanding of this evolving phenomenon and posit itself as a practical guide for both future researchers and universities seeking to understand and implement this novel strategy.

Key words. university activism, social change, content analysis, strategic communication, institutional websites

References

- AHMAD F., GUZMÁN F., AL-EMRAN M.D. (2024), "Brand activism and the consequence of woke washing", *Journal of Business Research*, vol. 170, 114362.
- AMEY L., PLUMMER R., PICKERING G. (2020), "Website communications for campus sustainability: An analysis of Canadian universities", *International Journal of Sustainability in Higher Education*, vol. 21, n. 3, pp. 531-556.
- ANDERSEN S.E., JOHANSEN T.S. (2024), "The activist brand and the transformational power of resistance: towards a narrative conceptual framework", *Journal of Brand Management*, pp. 1-13.
- BHAGWAT Y., WARREN N.L., BECK J.T., WATSON G.F. IV (2020), "Corporate sociopolitical activism and firm value", *Journal of Marketing*, vol. 84, n. 5, pp. 1-21.
- BARNETT R. (2021), "The activist university: Identities, profiles, conditions", *Policy Futures in Education*, vol. 19, n. 5, pp. 513-526.
- CHOUDRY A., VALLY S. (EDS.), (2020), "The university and social justice: Struggles across the globe". *Between the Lines*
- CAMMAROTA, A., D'ARCO, M., MARINO, V., RESCINITI R. (2023), "BRAND ACTIVISM: A literature review and future research agenda", *International Journal of Consumer Studies*, vol. 47, n. 5, pp. 1669-1691.
- CAMMAROTA A., MARINO V., RESCINITI R. (2022), "A bibliometric analysis of a risky marketing strategy: brand activism". In *NEXT GENERATION MARKETING People, Planet, Place: cooperation & shared value for a new era of critical marketing* (Vol. 1, pp. 1-17),
- D'ARCO M., MARINO V., RESCINITI R. (2023), "Stop business with Russia! Exploring the representation and perceived authenticity of corporate activism in response to Russia-Ukraine war", *Italian Journal of Marketing*, pp. 1-22.
- EILERT M., NAPPIER CHERUP A. (2020), "The activist company: Examining a company's pursuit of societal change through corporate activism using an institutional theoretical lens", *Journal of Public Policy & Marketing*, vol. 39, n. 4, pp. 461-476.
- EISENHARDT K.M. (1989), "Building theories from case study research", *Academy of Management Review*, vol. 14, n. 4, pp. 532-550.
- ESCHLE C., MAIGUASHCA B. (2006), "Bridging the academic/activist divide: feminist activism and the teaching of global politics", *Millennium*, vol. 35, n. 1, pp. 119-137.
- FOROUDI P., NAZARIAN A., ZIYADIN S., KITCHEN P., HAFEEZ K., PRIPORAS C., PANTANO E. (2020), "Co-creating brand image and reputation through stakeholder's social network", *Journal of Business Research*, vol. 114, pp. 42-59.
- FUCHS O., ROBINSON C. (2023), "Operationalising critical realism for case study research", *Qualitative Research Journal*, (ahead-of-print),
- HART A., NORTHMORE S. (2011), "Auditing and evaluating university-community engagement: Lessons from a UK case study", *Higher Education Quarterly*, vol. 65, n. 1, pp. 34-58.
- HOLLINGSHEAD A., WILLIAMSON P., CARNAHAN C. (2018), "Cognitive and emotional engagement for students with severe intellectual disability defined by the scholars with expertise in the field", *Research and Practice for Persons with Severe Disabilities*, vol. 43, n. 4, pp. 269-284.
- HSIEH H.F., SHANNON S.E. (2005), "Three approaches to qualitative content analysis", *Qualitative health research*, vol. 15, n. 9, pp. 1277-1288.
- HYDOCK C., PAHARIA N., BLAIR S. (2020), "Should your brand pick a side? How market share determines the impact of corporate political advocacy", *Journal of Marketing Research*, vol. 57, n. 6, pp. 1135-1151.
- KENT M.L., TAYLOR M. (1998), "Building dialogic relationships through the World Wide Web", *Public Relations Review*, vol. 24, n. 3, pp. 321-334.
- KLOSTERMANN J., HYDOCK C., DECKER R. (2022), "The effect of corporate political advocacy on brand perception: An event study analysis", *Journal of Product and Brand Management*, vol. 31, n. 5, pp. 780-797.
- KORSCHUN D. (2021), Brand activism is here to stay: Here's why. *NIM Marketing Intelligence Review*, vol. 13, n. 2, pp. 10-17.
- KRIPPENDORFF K. (2013), "Commentary: A dissenting view on so-called paradoxes of reliability coefficients", *Annals of the International Communication Association*, vol. 36, n. 1, pp. 481-499.
- LEPEAU L.A., HURTADO S.S., DAVIS R.J. (2018), "What institutional websites reveal about diversity-related partnerships between academic and student affairs", *Innovative Higher Education*, vol. 43, pp. 125-142.
- LO PRESTI L., MAGGIORE G., MARINO V., RESCINITI R. (2023), "Inclusion and social justice in sustainable higher education: An integrated perspective through the lens of public engagement", *Journal of Management and Governance*, pp. 1-39.
- LO PRESTI L., MARINO V. (2020), "Is online public engagement a new challenge in the university communication plan? A managerial perspective", *Studies in Higher Education*, vol. 45, n.7, pp. 1380-1397.
- MCMAHON S., STEPLETON K. (2018), "Undergraduate Exposure to Messages About Campus Sexual Assault: Awareness of Campus Resources", *Journal of College Student Development*, vol. 59, pp. 110 - 115.
- MIRZAEI A., WILKIE D.C., SIUKI H. (2022), "Woke brand activism authenticity or the lack of it.", *Journal of Business Research*, vol. 139, n.1-12.
- MORAN P., GHOSHAL S. (1996), "Bad for Practice: A critique of the Transaction Cost Theory", *Academy of Management Review*, vol. 21, n. 1, pp. 13-47.
- MUKHERJEE SOURJIO, ALTHUIZEN NIEK (2020), "Brand activism: Does courting controversy help or hurt a brand?", *International Journal of Research in Marketing*, vol. 37, n. 4, pp. 772-788.
- RADANIELINA HITA M.L., GRÉGOIRE Y. (2023), "Marketing to prevent radicalization: a first attempt at delimiting the field", *Journal of Public Policy & Marketing*, vol. 42, n. 1, pp. 1-10.
- RODRÍGUEZ-GÓMEZ S., LÓPEZ-PÉREZ M.V., GARDE-SÁNCHEZ R., ARCO-CASTRO L. (2022), "Increasing the commitment of students toward corporate social responsibility through higher education instruction", *The International Journal of Management Education*, vol. 20, n. 3, 100710.
- SALDAÑA J. (2021), "The coding manual for qualitative researchers", *The coding manual for qualitative researchers*, pp. 1-440.
- SARKAR C., KOTLER P. (2018), "Brand activism: From purpose to action", Idea Bite Press.
- SOBANDE F. (2019), "Woke-washing: "intersectional" femvertising and branding "woke" bravery", *European Journal of Marketing*, vol. 54, n. 11, pp. 2723-2745.

- STEINER L., SUNDSTRÖM A.C., SAMMALISTO K. (2013), “An analytical model for university identity and reputation strategy work”, *Higher Education*, vol. 65, pp. 401-415.
- PODNAR K., GOLOB U. (2024), “Brands and activism: ecosystem and paradoxes”, *Journal of Brand Management*, pp. 1-13.
- VREDENBURG J., KAPITAN S., SPRY A., KEMPER J.A. (2020), “Brands taking a stand: Authentic brand activism or woke washing?”, *Journal of Public Policy & Marketing*, vol. 39, n. 4, pp. 444-460.
- WANG Y.C., CHEN H., RYAN B., TROXTEL C., CVAR M. (2023), “Hotel general managers’ brand love: A thematic analysis with general managers in the US”, *Journal of Hospitality and Tourism Management*, vol. 54, pp. 200-211.
- WANNOW S., HAUPT M., OHLWEIN M. (2023), “Is brand activism an emotional affair? The role of moral emotions in consumer responses to brand activism”, *Journal of Brand Management*, pp. 1-25.
- WEBER T.J., JOIREMAN J., SPROTT D.E., HYDOCK C. (2023), “Differential response to corporate political advocacy and corporate social responsibility: implications for political polarization and radicalization”, *Journal of Public Policy & Marketing*, vol. 42, n. 1, pp. 74-93.
- WETTSTEIN F., BAUR D. (2016), “Why should we care about marriage equality? - Political advocacy as a part of corporate responsibility”, *Journal of Business Ethics*, vol. 138, n. 2, pp. 199-213.
- YIN R.K. (2009), *Case study research: Design and methods* (Vol. 5), sage.

L'integrazione del Metaverso negli eventi: impatto sugli SDG's e prospettive future

FRANCESCA IGINI¹ ARTURO CAFARO² MARIO CALABRESE³

Abstract

L'articolo esplora le molteplici implicazioni dell'integrazione degli strumenti digitali e del metaverso negli eventi, con un focus specifico sul caso del Phygital Sustainability Expo. Il metaverso, rappresentando un'evoluzione innovativa di Internet, ha un notevole potenziale per promuovere gli Obiettivi di Sviluppo Sostenibile (SDG's) in diversi settori. Attraverso un'osservazione basata sull'analisi della letteratura, questa ricerca analizza l'impatto dell'utilizzo del metaverso negli eventi sugli Obiettivi di Sviluppo Sostenibile (SDG's), incluse le partnership, l'educazione inclusiva e le azioni per mitigare l'impatto climatico. Inoltre, viene utilizzato un approccio predittivo mediante interpolazione lineare, per misurare quanto l'utilizzo di tool digitali e del metaverso possano influenzare l'entità dell'evento in futuro. I risultati contribuiscono a colmare le lacune nel dibattito accademico attuale riguardo all'intersezione del metaverso con la sostenibilità, offrendo spunti pratici per le imprese che si muovono in questo mondo ancora in evoluzione.

Key words: Metaverso; SDG; Eventi; Moda

Framing of the research. Il metaverso rappresenta una vasta rete interattiva di mondi virtualizzati tridimensionali in tempo reale. Facilita l'interazione simultanea e duratura di un numero infinito di utenti, contraddistinta da una sensazione personale di presenza e da flussi continui di dati, che comprendono identità, storie, diritti, oggetti, comunicazioni e transazioni finanziarie (Ball, 2022). Questa tecnologia rappresenta una nuova iterazione di Internet che incorpora visori di realtà virtuale (VR), tecnologia blockchain e avatar volti ad integrare il mondo fisico e quello virtuale (Lee et al., 2021). Inoltre, questo mondo virtuale rappresenta un mercato in forte espansione. In particolare, l'analisi elaborata da Stata, indica una notevole traiettoria di crescita per il mercato del metaverso, proiettando un valore di 74,4 miliardi di dollari nel 2024 e un tasso di crescita annuale previsto (CAGR 2024-2030) del 37,73%. Questa traiettoria è prevista culminare in un volume di mercato previsto di 507,8 miliardi di dollari entro il 2030 (STATA, 2023).

Alla luce del forte impatto che il metaverso ha apportato, la ricerca contemporanea, si sta concentrando sempre di più su di esso (Jauhiainen et al., 2022). Ad esempio, l'integrazione del metaverso nelle esperienze di shopping rappresenta una tendenza attuale nell'ambito della ricerca. I rivenditori stanno impiegando tecnologie avanzate, quali la realtà virtuale (VR), la realtà aumentata (AR) e la blockchain, per creare ambienti di shopping immersivi e interattivi. Queste soluzioni tecnologiche consentono ai consumatori di effettuare acquisti comodamente da casa o dall'ufficio, esplorando negozi virtuali attraverso l'uso di smartphone (Cannavo & Lamberti, 2020). Inoltre, grazie alla loro presenza nel metaverso, i rivenditori hanno la possibilità di entrare in possesso di informazioni sensibili sui clienti che risultano inaccessibili su altre piattaforme digitali (Vittorio, 2022), ciò consentirebbe di raggiungere un livello di personalizzazione dei prodotti che, conseguentemente, porterebbe ad un cambio di paradigma. È plausibile che nel prossimo futuro si verifichi un cambio paradigmatico, con il passaggio da un modello di "shop then ship" a uno di "ship then shop" (Choi et al. 2021), reso possibile grazie all'utilizzo di algoritmi avanzati in grado di interpretare con sempre maggiore precisione i bisogni e i desideri dei consumatori (Agrawal et al., 2018). Il metaverso, dunque, apre le porte alla personalizzazione delle esperienze dei clienti, tale caratteristica consente agli individui di modellare le loro esperienze in modo unico e coinvolgente, contribuendo a costruire connessioni più profonde con l'ambiente virtuale e con altri utenti (Dincelli, 2022; Le Tan et al., 2023). Questa modalità di acquisto si distingue per la sua sofisticata interattività e personalizzazione, offrendo un'esperienza immersiva senza precedenti. Tale interattività non solo rinforza il legame tra cliente e brand (Yoo et al, 2023), ma, inoltre, i commercianti possono capitalizzare sulla dimensione spaziale del metaverso, operando contemporaneamente in tre ambienti distinti, con potenziali benefici nella riduzione della dipendenza dai negozi fisici e dei relativi costi associati (Bourlakis et al., 2023). Attualmente, la ricerca presenta una

¹ Sapienza Università di Roma
e-mail: francesca.igini@uniroma1.it

² Sapienza Università di Roma
e-mail: arturo.cafaro@uniroma1.it

³ Sapienza Università di Roma
e-mail: mario.calabrese@uniroma1.it

lacuna in questo campo che, dato il cambio di paradigma e i molteplici benefici, meriterebbe un'attenzione più approfondita.

Numerose indagini accademiche, invece, si sono immerse nelle opportunità offerte dal Metaverso nel mitigare gli impatti ambientali e favorire la sostenibilità. Ad esempio, la tecnologia blockchain è identificata come fondamentale per affrontare le sfide legate al commercio, sebbene con il rischio di un notevole consumo energetico (De Giovanni, 2023). Nonostante ciò, viene sottolineato il potenziale trasformativo della tecnologia del Metaverso, suggerendo che esso ricopra un ruolo significativo nell'accelerare il raggiungimento degli Obiettivi di Sviluppo Sostenibile (Cao et al., 2023). La capacità distintiva del Metaverso di stabilire un'interconnessione senza soluzione di continuità tra la vita reale e virtuale emerge come un catalizzatore per ridurre il consumo di risorse nella produzione di beni e prodotti (Allam, 2022). Inoltre, esso permette di ridurre le attività quotidiane che richiedono l'utilizzo di mezzi di trasporto (Kshetri, 2023), e di minimizzare il consumo di energia negli edifici adibiti ad uffici (Vlăduțescu et al., 2023; Al-Emran, 2023).

Pertanto, il Metaverso, come spazio digitale in crescita, offre un'opportunità distintiva di allinearsi agli Obiettivi di Sviluppo Sostenibile, che risulta particolarmente evidente nel campo degli eventi. Questa tecnologia aiuta gli organizzatori di eventi a seguire linee guida aziendali, sociali ed ambientali, riducendo le emissioni di carbonio legate ai viaggi e al catering, promuovendo l'educazione ambientale, la consapevolezza e un comportamento responsabile (Kark & Singh, 2023). Inoltre, gli eventi nel Metaverso vanno oltre le tipiche riunioni virtuali, evolvendosi in occasioni curate su piattaforme dedicate. Questo cambiamento trasformativo, che si discosta dagli eventi virtuali tradizionali, mostra una forte capacità di offrire esperienze sempre più coinvolgenti (Piccioni, 2023). Anche le tecnologie della moda e del retail stanno avanzando in un'ottica sempre più digitale, coinvolgendo i consumatori attraverso il metaverso dando vita ad un ambiente commerciale omnicanale (Weiss, 2022). Anche i marchi di moda stanno sfruttando questi sviluppi per ospitare le proprie sfilate all'interno del metaverso, presentando così i loro design ad un pubblico globale (Mu et al., 2023). Nel 2022, nel periodo post pandemico, i grandi brand globali della moda hanno partecipato alla Metaverse Fashion week organizzata in collaborazione con Decentraland (STATA, 2022). Questo spostamento verso il mondo virtuale però non rappresenta solo una risposta alla pandemia, ma è una tendenza in continua evoluzione. Dopo la pandemia, infatti, le tradizionali settimane della moda si stanno trasformando in settimane della moda digitali, con un impatto significativo sulla portata del pubblico, sui costi operativi e sull'interazione con i consumatori (Dai, 2023). Di fatto, l'applicazione della tecnologia del metaverso risulta particolarmente rilevante nell'industria della moda, dove il raggiungimento della sostenibilità richiede una profonda trasformazione digitale (Periyasamy & Periyasami, 2023). Infatti, questo settore contribuisce significativamente alle sfide ambientali, rappresentando il secondo settore maggiormente inquinante globale dopo l'industria petrolifera, portando a varie conseguenze ambientali negative (Gupta et al., 2022; Raj et al., 2022). L'influenza di tale industria si estende su diversi settori, influenzando in modo significativo i diritti umani, le emissioni di carbonio, il consumo di acqua, l'inquinamento e le disuguaglianze di genere (Ali et al., 2022). Le sfilate di moda svolte nel metaverso migliorano l'accessibilità globale, eliminano i costi legati agli eventi fisici e contribuiscono alla sostenibilità riducendo le impronte di carbonio (Dewalska-Opitek, 2023). Ciò sottolinea la crescente importanza del metaverso come forza trasformativa, in particolare nel settore della moda, allineandosi con gli obiettivi più ampi di sostenibilità.

Purpose of the paper. Gli avanzamenti del metaverso enfatizzano l'importanza di integrare la sostenibilità e la responsabilità ma la discussione accademica in questo campo rimane incompleta (Jauhainen et al., 2022). L'attuale conversazione accademica manca di approfondimenti esaustivi sulle conseguenze ambientali del consumo virtuale sia in positivo, che in negativo (Pellegrino et al., 2023). Inoltre, la comprensione accademica del metaverso nel contesto della moda rimane ambigua, indicando una lacuna nella comprensione accademica (Lee et al., 2022).

Tale ricerca mira a colmare questo gap. Attraverso un esame dell'aspetto online Phygital Sustainability Expo, il nostro studio cerca di scoprire approfondimenti legati agli effetti e alla rilevanza dell'uso del metaverso come strumento per eventi digitali, con un focus specifico sulla sostenibilità. Adottando questo approccio, il nostro studio mira non solo a contribuire alla discussione specifica sul Metaverso, ma anche a migliorare la comprensione accademica più ampia delle varie implicazioni degli eventi digitali in contesti diversi. Per raggiungere questo obiettivo, sono state formulate due domande di ricerca:

RQ 1: Come l'uso del metaverso negli eventi influisce sul raggiungimento degli SDG's?

RQ 2: Quanto influisce l'uso di strumenti digitali e del metaverso sul numero di partecipanti, e quanto influenzerà in futuro?

Methodology. Nella fase iniziale, viene esaminata la letteratura per chiarire le implicazioni del metaverso negli eventi sugli Obiettivi di Sviluppo Sostenibile (SDGs) attraverso un'osservazione concettuale (Joseph, 2023). Lo studio analizza la letteratura per comprendere l'impatto degli eventi su specifici SDGs e valutare il contributo potenziale del metaverso al loro raggiungimento.

Inoltre, questo lavoro adotta un approccio focalizzato, concentrando l'analisi su un singolo case study con lo scopo approfondire le complessità di una specifica problematica in contesti distinti (Sandars, 2021). L'attenzione è rivolta al "Phygital Sustainability Expo," una rilevante esposizione sulla sostenibilità nel settore della moda e del design, attualmente alla sua quarta edizione nel 2023 presso i Fori Imperiali di Roma.

Tab. 1: elaborazione degli autori sulla base dei dati forniti dalla Sustainable Fashion Innovation Society

REACH RECAP - PHI GITAL SUSTAINABILITY EXPO 2023				
REACH TOTALE	70.000.000	ONLINE	43.000.000	80%
		OFFLINE	27.000.000	20%

Al fine di comprendere l'impatto che l'uso del digitale e del metaverso ha avuto e avrà in futuro sul numero di partecipanti all'evento preso in esame, è stata svolta una previsione mediante interpolazione lineare. Il meccanismo predittivo dell'interpolazione lineare si basa sul principio di utilizzare i valori associati ai punti dati noti per estrapolare e stimare il valore corrispondente a un punto dati sconosciuto (Pownuk & Kreinovich, 2017). La sequenza procedurale implica il reperimento dell'equazione lineare che racchiude le dinamiche relazionali tra i punti dati stabiliti, successivamente utilizzando questa equazione derivata per estrapolare e calcolare il valore assegnato al punto sconosciuto (Dyba & Hakulinen, 2000). Dato l'inizio recente di questo evento, il dataset a nostra disposizione copre un periodo relativamente breve, comprendente un quadriennio dal 2020 al 2023. I risultati, quindi, rappresentano un'approssimazione che potrebbe essere implementata su un arco temporale più ampio. Per prevedere la tendenza dei partecipanti agli eventi in streaming per l'anno 2024, è stata effettuata un'interpolazione lineare manuale utilizzando i dati delle prime quattro edizioni dell'evento (2020, 2021, 2022 e 2023). Questo approccio ha stabilito una relazione lineare tra l'anno e i valori associati, che è stata poi utilizzata per prevedere il numero di partecipanti per il 2024.

Results. La RQ1 ha lo scopo di comprendere come l'integrazione del metaverso negli eventi influisca sul raggiungimento degli Obiettivi di Sviluppo Sostenibile (SDG's), rivelando un potenziale trasformativo nello sviluppo sostenibile. L'utilizzo di un'osservazione basata su concetti fornisce una comprensione completa dell'argomento. La ricerca sulla pianificazione degli eventi si concentra su tre Obiettivi di Sviluppo Sostenibile chiave: SDG 17 (Partnership), SDG 4 (Educazione) e SDG 13 (Azione per il Clima) (Fiorani & Di Gerio 2018; Liu & Lei 2021; Di Gerio et al. 2020; Mackay et al. 2023). L'indagine si è estesa per analizzare la letteratura in merito agli specifici Obiettivi di Sviluppo Sostenibile (SDG's) in connessione con il Metaverso. L'esplorazione è stata condotta utilizzando il dataset di Scopus. La query di ricerca impiegata per questa revisione della letteratura è stata: TITLE-ABS-KEY (metaverse) AND (impact) AND (sustainable AND development AND goals) OR (sdg*). Il risultato di questa ricerca ha prodotto un totale di 102 documenti. I filtri applicati per questa ricerca sono stati: Tipo di documento "Articolo"; Stato di pubblicazione "Finale"; Lingua "Inglese", e la ricerca è stata limitata a tutti gli Open Access. Dato che questo è, come esplicitamente dichiarato, un argomento emergente, durante il processo di ricerca non sono state imposte restrizioni temporali. Il numero di documenti trovati è risultato 57. Successivamente, è stato eseguito uno screening. Sono stati trovati 12 articoli correlati all'effetto del metaverso sugli SDG's 4; 17 e 13. Gli articoli si concentrano principalmente sulla relazione tra Metaverso ed Educazione e Metaverso e Sostenibilità.

Tab. 2: elaborazione degli autori

	Çelik, F., & Baturay, M. H. (2024). The effect of metaverse on L2 vocabulary learning, retention, student engagement, presence, and community feeling. <i>BMC psychology</i> , 12(1), 58.
	Jamshidi, M., Delghaniyan Serej, A., Jamshidi, A., & Moztaazaleh, O. (2023). The meta-metaverse: ideation and future directions. <i>Future Internet</i> , 15(8), 252.
SDG 4	Qadir, A. M. A., & Fatah, A. O. (2023). Platformization and the metaverse: Opportunities and challenges for urban sustainability and economic development. <i>EAI Endorsed Transactions on Energy Web</i> , 10(1).
	Hassani, H., Huang, X., & MacFeeley, S. (2022). Enabling Digital Twins to Support the UN SDGs. <i>Big Data and Cognitive Computing</i> , 6(4), 115.
	Park, S., & Kim, S. (2022). Identifying world types to deliver gameful experiences for sustainable learning in the metaverse. <i>Sustainability</i> , 14(3), 1361.
SDG 17	Chen, P. K., & Huang, X. (2023). Enhancing supply chain resilience and realizing green sustainable development through the virtual environment of the metaverse. <i>Sustainable Development</i> .
	De Giovanni, P. (2023). Sustainability of the Metaverse: A transition to Industry 5.0. <i>Sustainability</i> , 15(7), 6079.
	Cao, W., Cai, Z., Yao, X., & Chen, L. (2023). Digital Transformation to Help Carbon Neutrality and Green Sustainable Development Based on the Metaverse. <i>Sustainability</i> , 15(9), 7132.
	Pachouri, V., Singh, R., Gehlot, A., Pandey, S., Akram, S. V., & Abbas, M. (2024). Empowering sustainability in the built environment: A technological Lens on industry 4.0 Enablers. <i>Technology in Society</i> , 76, 102427.
SDG 13	Dwivedi, Y. K., Hughes, L., Baabdullah, A. M., Ribeiro-Nazarrete, S., Giannakis, M., Al-Debei, M. M., ... & Wamba, S. F. (2022). Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. <i>International Journal of Information Management</i> , 66, 102542.
	Jauhiainen, J. S., Krohn, C., & Junttila, J. (2022). Metaverse and Sustainability: Systematic Review of Scientific Publications until 2022 and Beyond. <i>Sustainability</i> , 15(1), 346.
	Joseph, A. (2023). An Exploratory Study on Metaverse and SDGs. In <i>How the Metaverse Will Reshape Business and Sustainability</i> (pp. 83-93). Singapore: Springer Nature Singapore.

Con riferimenrto all'SDG4, si prevede che il metaverso sia cruciale nell'integrare nuove tecnologie nell'istruzione (Jamshidi et al., 2023). Çelik & Baturay (2024) hanno riscontrato impatti positivi sui risultati di apprendimento del sottolineando le caratteristiche immersive e interattive del metaverso. Park & Kim (2022) ne sottolineano il potenziale nel superare vincoli temporali e spaziali nell'istruzione, fornendo pari opportunità e affrontando limitazioni fisiche. Hassani et al. (2022) enfatizzano l'impatto positivo sulle esperienze di apprendimento e sull'accesso equo alle risorse,

eliminando le barriere legate a posizione, lingua e disabilità. Qadir & Fatah (2023) sottolineano il potenziale del metaverso nel migliorare l'apprendimento a distanza attraverso una collaborazione efficace e ambienti virtuali condivisi.

Sfruttando le intuizioni derivate dagli studi sopra menzionati, il metaverso emerge non solo come una forza trasformativa nell'istruzione, ma anche come una piattaforma versatile capace di ospitare eventi diversificati, dalla promozione a eventi culturali, artistici, sportivi e festival. Nell'istruzione, il metaverso offre esperienze di apprendimento immersive e interattive che, quando utilizzate in un evento, possono garantire la diffusione della conoscenza a un vasto pubblico. Questo approccio completo mira a migliorare l'accessibilità e l'interesse affrontando le diverse esigenze del pubblico.

Nel contesto dell'SDG 17 il metaverso funge da piattaforma innovativa per ospitare eventi virtuali, offrendo esperienze immersive e interattive che favoriscono un pubblico più ampio e promuovono collaborazioni tra diverse parti interessate (De Giovanni, 2023). D'altro canto, l'indagine condotta da Chen & Huang ha rivelato che l'ambiente virtuale all'interno del metaverso incoraggia una stretta vicinanza spaziale e fornisce un riscontro multisensoriale, sviluppando risposte emotive durante le interazioni e la condivisione di conoscenze. Queste caratteristiche migliorano l'influenza reciproca e contribuiscono a mitigare i rischi di cooperazione percepiti.

Sulla base di queste conclusioni, le interazioni all'interno del metaverso sono identificate come un catalizzatore per la creazione di nuovi partenariati e collaborazioni. Il metaverso, attraverso le sue caratteristiche immersive e collaborative, emerge come un potente strumento, utilizzabile negli eventi, per favorire sinergie tra diverse parti interessate, promuovendo così sforzi collettivi verso lo sviluppo sostenibile.

Per quanto riguarda l'SDG 13, la tecnologia digitale, come sottolineato da Cao et al. (2023), contribuisce significativamente all'ottimizzazione della produzione e delle operazioni aziendali per obiettivi neutri in carbonio e per gli obiettivi di sviluppo sostenibile verdi. Pachouri et al. (2024) sottolineano il ruolo dei metodi digitalizzati dell'Industria 4.0 nell'ottimizzare l'ambiente costruito per la sostenibilità. Jauhiainen et al. (2022) si concentrano sul Metaverso, evidenziandone il potenziale nel ridurre le emissioni di carbonio sostituendo beni fisici con equivalenti digitali e ottimizzando il mondo fisico attraverso simulazioni e un maggiore livello di consapevolezza. Dwivedi et al. (2022) e Joseph (2023) sottolineano entrambi il ruolo del metaverso nel ridurre l'impronta di carbonio attraverso la diminuzione dei viaggi, la promozione dell'efficienza lavorativa e la facilitazione della replicazione di edifici e città per un impatto ecologico positivo.

L'influenza trasformativa della tecnologia digitale e del metaverso si estende oltre l'ottimizzazione dei processi industriali, abbracciando una rivoluzione nel modo in cui eventi e interazioni sono condotti. Questo cambiamento di paradigma, particolarmente applicabile alle attività legate ai viaggi, ha il potenziale di ridurre significativamente le impronte ambientali. Il metaverso, con la sua capacità di replicare spazi fisici e consentire interazioni virtuali, emerge come un attore chiave nel mitigare l'impatto ambientale tradizionalmente associato ai viaggi. Offrendo alternative a incontri fisici, eventi e visite turistiche, queste tecnologie aprono la strada a un approccio più sostenibile alle interazioni umane, allineandosi all'imperativo di ridurre le emissioni di carbonio e promuovere la responsabilità ecologica.

Per affrontare la RQ. 2, è stata eseguita un'interpolazione lineare con l'obiettivo di comprendere la tendenza e prevedere il numero futuro di partecipanti online alla Phygital Sustainability Expo, al fine di comprendere l'impatto (attuale e futuro) dell'uso di strumenti digitali e del metaverso.

Per offrire una maggiore comprensione del caso di studio analizzato, sono state effettuate delle analisi preliminari attraverso i dati forniti dall'ente organizzatore dell'evento. I dati sulla portata totale rappresentano la complessità degli utenti raggiunti dal Phygital Sustainability expo attraverso le strategie di comunicazione implementate utilizzando diversi canali, azioni e strumenti sia online che offline.

Tab. 3: elaborazione degli autori sulla base dei dati forniti dalla Sustainable Fashion Innovation Society

Canali digitali	Azioni	Tod	Reach Totale
Paid media campaign	Impressions Reach Likes Shares and nuovi followers	Meta Instagram LinkedIn	2.000.000
Influencer marketing	90 influencer/opinion leader internazionali intersettoriali	Kaby Lame José Mourinho Agil Mamyyev	18.000.000
Articoli online dei principali partner istituzionali	I principali partner hanno dedicato spazi sui loro siti web ufficiali	Fao Poste Italiane European Commission European Parliament Italian Trade Agency Italian Ministry of Foreign affairs Rome Capital City Ferrovie dello Stato Lega di calcio serie B Enel CNH industrial	10.000.000
Media Partners	Programmi televisivi in prima serata sull'evento Streaming integrale dell'evento Streaming della conferenza stampa dell'evento	Rai Today.it Forbes	13.000.000
Social media Marketing	Grande visibilità per tutti i partner sui canali ufficiali	Instagram LinkedIn Facebook	30.000

Tab. 4: elaborazione degli autori sulla base dei dati forniti dalla Sustainable Fashion Innovation Society

Canali Offline	Azioni	Tool	Reach totale
Print media	Articoli di giornale	Corriere della sera Milano Finanza Repubblica Libero La Stampa Il Messaggero Il Giornale Forbes Fortune	15.000.000
Out of home ADS	1 Ledwall in Times Square a New York Poster dell'evento sugli autobus della città di Roma 10 Ledwall a Roma e Milano Cartelloni dell'evento su tutti i treni nazionali	Nasdaq ATAC Urban Vision Ferrovie dello stato	12.000.000

Per comprendere meglio l'entità dell'evento, è stata generata una panoramica dei paesi di origine dei partecipanti fisici. L'evento analizzato, di portata globale, sottolinea la necessità di comprendere l'impatto dell'adozione di strumenti digitali e del metaverso e le sue implicazioni future. Questa valutazione è cruciale, data la sua duplice influenza del digitale nella riduzione dei fattori legati ai viaggi e nell'espansione dell'audience raggiunta.

Tab. 5: elaborazione degli autori sulla base dei dati forniti dalla Sustainable Fashion Innovation Society

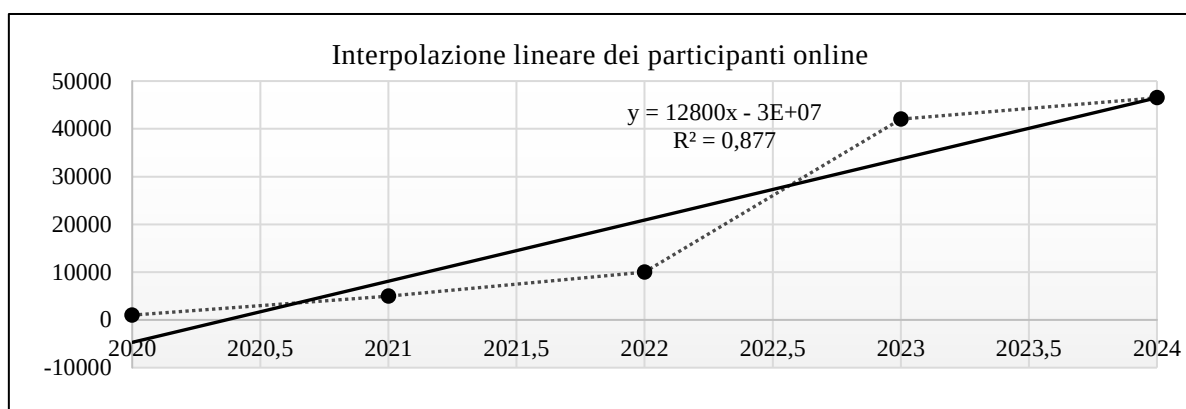
Divisione per paese di provenienza dei partecipanti in presenza			
15.000 partecipanti			
		Italia	85%
Europa	76%	Paesi Bassi	5%
		Resto dell'Europa	10%
USA	12%		
America Latina	9%		
Altre nazioni	3%		

Successivamente, è stata svolta l'analisi predittiva utilizzando il metodo di interpolazione lineare utilizzando i dati concernenti le presenze in streaming dell'evento durante gli anni in cui esso si è svolto.

Tab. 6: elaborazione degli autori sulla base dei dati forniti dalla Sustainable Fashion Innovation Society

Anno	N. partecipanti in streaming
2020	1.000
2021	5.000
2022	10.000
2023	42.000

Fig. 1: elaborazione degli autori



Il numero stimato di partecipanti online per l'anno 2024 ammonta a circa 46.500 individui, riflettendo una previsione analitica della partecipazione del pubblico nel mondo virtuale dell'evento. Il coefficiente di determinazione, R^2 , misura la bontà di adattamento del modello lineare ai dati (Dyn et al, 1990). Varia da 0 a 1, dove 1 indica un adattamento perfetto. In questo caso, $R^2=0.877$, il che significa che circa l'87,7% della variabilità nei valori previsti (basati sul modello lineare) può essere spiegato dalla relazione lineare con l'anno. È importante sottolineare, però, che tali dati rappresentano un'approssimazione e un dataset più ampio fornirebbe una percezione migliore della situazione, considerando l'attuale insieme di dati limitato. Inoltre, viene riscontrato un forte aumento delle presenze tra il 2022 e il 2023, quando, per la prima volta, il metaverso è stato utilizzato nell'evento per presentare la "sfilata di moda narrata" online.

Research limitations. I limiti di questo lavoro includono la focalizzazione su uno specifico caso di studio, il che suggerisce la possibilità di una futura espansione della ricerca per includere una gamma più ampia di eventi in settori diversi. Inoltre, le limitazioni derivano dal breve periodo temporale del dataset, poiché l'evento in analisi è in corso solo da pochi anni. Si riconosce la necessità di estendere l'analisi a eventi con dati che coprano un arco temporale più ampio per fornire ulteriori approfondimenti. Inoltre, lo stato attuale del discorso accademico rimane incompleto, e ulteriori indagini sono necessarie per comprendere le implicazioni del metaverso sullo Sviluppo sostenibile. Questa lacuna fornisce uno spazio opportuno per ulteriori ricerche che offrano preziosi approfondimenti specificamente progettati per brand e associazioni che si avventurano nel fiorente mondo del metaverso.

Managerial implications. Da un'analisi della letteratura è emerso che l'utilizzo del metaverso come canale di vendita ridefinisce il retail, consentendo transazioni dirette all'interno di ambienti virtuali e trasformando il semplice atto dello shopping in un'esperienza coinvolgente e dinamica. Un aspetto cruciale di questa rivoluzione è l'impiego avanzato dei dati. Grazie all'analisi dei dati, lo shopping virtuale può offrire una personalizzazione su misura, presentando prodotti pertinenti e stabilendo un collegamento diretto tra cliente e merce. In questo scenario, il metaverso sta ridefinendo il concetto di shopping online, aprendo nuove opportunità per i rivenditori di creare esperienze uniche e coinvolgenti per i consumatori mitigando i costi operativi dovuti agli store fisici. Le imprese dovrebbero progressivamente orientarsi verso l'omnicanalità, incorporando il metaverso nelle proprie strategie. Tale approccio non solo comporterebbe vantaggi nella gestione delle relazioni con i consumatori, ma anche in termini di contenimento dei costi.

Lo studio suggerisce implicazioni brand, organizzazioni e policy maker, evidenziando il ruolo del metaverso nell'integrare principi di sostenibilità negli ambienti virtuali e nel raggiungere obiettivi di sostenibilità. Tale lavoro evidenzia come il metaverso sia uno strumento dinamico in grado di ridefinire gli eventi, coinvolgere pubblici diversificati e contribuire a un futuro più sostenibile. Infatti, la vasta portata che tale tecnologia svolge un ruolo cruciale nella diffusione della conoscenza e il suo utilizzo in eventi legati alla sostenibilità, come il Phygital Sustainability Expo, promuoverebbe la sensibilizzazione tra un gran numero di persone. Il metaverso, utilizzato negli eventi, emerge anche come uno strumento volto a favorire sinergie tra diverse parti interessate. Attraverso l'uso delle nuove tecnologie, come dimostrato, possono essere generate collaborazioni tra diverse aziende e tra aziende e istituzioni durante gli eventi, facilitando l'avvio di cambiamenti in una direzione sempre più sostenibile. Il metaverso, replicando spazi fisici e consentendo interazioni virtuali, svolge un ruolo cruciale nel ridurre l'impronta ambientale associato ai viaggi fornendo alternative a incontri ed eventi in presenza. Dunque, l'utilizzo del metaverso rappresenta per le imprese un'occasione unica per progredire verso gli Obiettivi di Sviluppo dell'Agenda 2030.

Originality of the paper. L'originalità di tale lavoro risiede nell'approccio innovativo proposto nel contesto della sostenibilità e della gestione degli eventi, focalizzandosi sull'esplorazione delle implicazioni derivanti dall'integrazione del metaverso negli eventi, con una particolare attenzione rivolta al Phygital Sustainability Expo nel settore della moda.

La ricerca si propone di colmare lacune presenti nel dibattito accademico corrente che riguarda l'intersezione del metaverso con la sostenibilità, offrendo spunti pratici e pragmatici per le imprese che si muovono in questo panorama ancora in evoluzione. L'analisi dei risultati mira a fornire una base di conoscenza solida e informativa, in grado di guidare le decisioni strategiche nel contesto dell'integrazione del metaverso negli eventi, con particolare riferimento alla sostenibilità nel settore della moda.

Questo approccio multidisciplinare si inserisce in un contesto accademico che spesso si è concentrato su aspetti specifici del metaverso o della sostenibilità, ma raramente ha esplorato in dettaglio la loro intersezione. Attraverso la metodologia predittiva adottata, il paper contribuisce a proiettare l'attenzione al di là del presente, offrendo una visione prospettica sull'evoluzione futura di eventi sostenibili supportati dal metaverso.

L'articolo aspira a non solo ampliare la comprensione accademica dell'impatto del metaverso sugli obiettivi di sviluppo sostenibile, ma anche a fornire suggerimenti tangibili per le aziende e le organizzazioni che mirano a incorporare questa innovazione nella pianificazione e nell'esecuzione degli eventi. L'originalità e la rilevanza di questo contributo accademico risiedono, quindi, nell'approccio pionieristico, nella sua natura interdisciplinare e nella sua capacità di tradurre concetti complessi in indicazioni pratiche, alimentando così la discussione e la prassi nel campo in continua evoluzione del metaverso e della sostenibilità degli eventi.

References

AGRAWAL A., GANS J., GOLDFARB A. (2018), *Prediction machines: the simple economics of artificial intelligence*, Harvard Business Press.

- AL-EMRAN M. (2023), "Beyond technology acceptance: Development and evaluation of technology-environmental, economic, and social sustainability theory", *Technology in Society*, vol. 75, vol. 102383.
- ALI, ALMOGHIDI, RIYADH, ISMAEIL, ALBADER., MOHAMMED, ALSUHAYMI. (2022), "Environmental Sustainability in Fashion Industry through Sharing Economy", *International Journal of Research Publication and Reviews*, 1657-1660. doi: 10.55248/gengpi.2022.3.11.20
- ALLAM Z., SHARIFI A., BIBRI S.E., JONES D.S., KROGSTIE J. (2022), "The metaverse as a virtual form of smart cities: Opportunities and challenges for environmental, economic, and social sustainability in urban futures", *Smart Cities*, vol. 5, n. 3, pp. 771-801.
- BALL M. (2022), "The metaverse: and how it will revolutionize everything. Liveright Publishing.
- BIBRI S.E., ALLAM Z. (2022), "The Metaverse as a virtual form of data-driven smart cities: The ethics of the hyper-connectivity, datafication, algorithmization, and platformization of urban society", *Computational Urban Science*, vol. 2, n. 1, pp. 22.
- BLAIR-WALCOTT K. (2023), "Comparative Analysis", In *Varieties of Qualitative Research Methods: Selected Contextual Perspectives* (pp. 79-84), "Cham: Springer International Publishing.
- BOURLAKIS M., PAPAGIANNIDIS S., LI F. (2009), "Retail spatial evolution: paving the way from traditional to metaverse retailing", *Electronic commerce research*, vol. 9, vol. 135-148.
- CANNAVO A., LAMBERTI F. (2020), "How blockchain, virtual reality, and augmented reality are converging, and why", *IEEE Consumer Electronics Magazine*, vol. 10(5), pp. 6-13.
- CAO W., CAI Z., YAO X., CHEN L. (2023), "Digital Transformation to Help Carbon Neutrality and Green Sustainable Development Based on the Metaverse", *Sustainability*, vol. 15, n. 9, pp. 7132.
- ÇELİK F., BATURAY M.H. (2024), "The effect of metaverse on L2 vocabulary learning, retention, student engagement, presence, and community feeling", *BMC psychology*, vol. 12, n. 1, pp. 58.
- CHEN P.K., HUANG X. (2023), "Enhancing supply chain resilience and realizing green sustainable development through the virtual environment of the metaverse", *Sustainable Development*.
- CHOI W.J., LIU Q., SHIN J., GOLDFARB A., LIU Z., SHIN W., YU J. (2021), "AI-driven retail transformation: Shop-then-ship or Ship-then-shop. Working paper.
- DAI R. (2023), "The Impact of Digital Fashion Week on Fashion Trends in China. *Journal of Education, Humanities and Social Sciences*, vol. 17, pp. 76-83.
- DE GIOVANNI P. (2023), "Sustainability of the Metaverse: A transition to Industry 5.0", *Sustainability*, vol. 15, n. 7, 6079.
- Developers. Sustainability, vol. 15, n. 15, pp. 11704.
- DEWALSKA-OPITEK A. (2023), "Digital Revolution in Fashion Industry–To What Extent Can Metaverse Become A Predominant Business-To-Customer Model in the Digital Era", *Humanitas University's Research Papers Management*, vol. 24, n. 2, pp. 31-47.
- DI GERIO C., FIORANI G., GIUSEPPE P. (2020), "Sustainability and Large-Scale Events: The Case of the Extraordinary Jubilee of Mercy and the Application of Sustainable Development Goals", *Journal of Sustainable Development*, vol. 13, n. 3, pp. 71.
- DINCELLI E., YAYLA A. (2022), "Immersive virtual reality in the age of the Metaverse: A hybrid-narrative review based on the technology affordance perspective", *The journal of strategic information systems*, vol. 31, n. 2, pp. 101717.
- DWIVEDI Y.K., HUGHES L., BAABDULLAH A.M., RIBEIRO-NAVARRETE S., GIANNAKIS M., AL-DEBEI M.M., WAMBA S. F. (2022), "Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy", *International Journal of Information Management*, vol. 66, 102542.
- DYBA T., HAKULINEN T. (2000), "Comparison of different approaches to incidence prediction based on simple interpolation techniques", *Statistics in medicine*, vol. 19, n. 13, pp. 1741-1752.
- DYN N., LEVIN D., RIPPA S. (1990), "Data dependent triangulations for piecewise linear interpolation", *IMA journal of numerical analysis*, vol. 10, n. 1, pp. 137-154.
- FIORANI G., DI GERIO C. (2018), "The Italian Public Administration and the 2030 Agenda: a best practice event", In *Strategica 2018-Challenging the Status Quo in Management and Economics*. Snsa and Tritonic.
- GUPTA R., KUSHWAHA A., DAVE D., MAHANTA N.R. (2022), "Waste management in fashion and textile industry: Recent advances and trends, life-cycle assessment, and circular economy", *Emerging Trends to Approaching Zero Waste*, vol. 215-242.
- HASSANI H., HUANG X., MACFEELY S. (2022), "Enabling Digital Twins to Support the UN SDGs", *Big Data and Cognitive Computing*, vol. 6, n. 4, pp. 115.
- JAMSHIDI M., DEGHANIYAN SEREJ A., JAMSHIDI A., MOZTARZADEH O. (2023), "The meta-metaverse: ideation and future directions", *Future Internet*, vol. 15, n. 8, pp. 252.
- JAUHIAINEN J.S., KROHN C., JUNNILA J. (2022), "Metaverse and Sustainability: Systematic Review of Scientific Publications until 2022 and Beyond", *Sustainability*, vol. 15, n. 1, pp. 346.
- JOHRI A., JOSHI P., KUMAR S., JOSHI G. (2024), "Metaverse for Sustainable Development in a bibliometric analysis and systematic literature review", *Journal of Cleaner Production*, 140610.
- JOSEPH A. (2023), "An Exploratory Study on Metaverse and SDGs", In *How the Metaverse Will Reshape Business and Sustainability* (pp. 83-93), Singapore: Springer Nature Singapore.
- KARK S., SINGH S. (2023), Metaverse Experiences, events: and sustainability. Virtual Events Management: Theory and Methods for Event Management and Tourism, vol. 175.
- KSHETRI N., DWIVEDI Y.K. (2023), "Pollution-reducing and pollution-generating effects of the metaverse", *International Journal of Information Management*, vol. 69, 102620.
- LE TAN T., KHANH H.N., HANG H.T., LONG N.D., MY V.T.H., LAP N.H.C. (2023), "The Impact of Marketing Metaverse through Experience in Enjoyment Experience, Brand Active and Purchase Intention", *Advances in Management*, vol. 16, n. 1, pp. 19-24.
- LEE G., KIM H.Y. (2022, December), "Fashion and Beauty Retailing with the Metaverse: A Systematic Review of 5 Years of Research", In *International Textile and Apparel Association Annual Conference Proceedings* (Vol. 79, No. 1), Iowa State University Digital Press.

- LEE L.H., BRAUD T., ZHOU P., WANG L., XU D., LIN Z., HUI P. (2021), "All one needs to know about metaverse: A complete survey on technological singularity, virtual ecosystem, and research agenda", *arXiv preprint arXiv:2110.05352*.
- LIU Y.Q., LEI W.S.C. (2021), "Towards sustainable practice in the event industry: Insights from practitioners", *Event Management*, vol. 25, n. 3, pp. 213-226.
- MACKAY C., JULIEN A., HIRST J. (2023), "Sustainability and Sustainable Event Management. *Cases For Event Management and Event Tourism*, vol. 105.
- MU X., ZHANG H., SHI J., HOU J., MA J., YANG Y. (2023), "Fashion Intelligence in the Metaverse: Promise and Future Prospects.
- PACHOURI V., SINGH R., GEHLOT A., PANDEY S., AKRAM S.V., ABBAS M. (2024), "Empowering sustainability in the built environment: A technological Lens on industry 4.0 Enablers", *Technology in Society*, vol. 76, 102427.
- PARK S., KIM S. (2022), "Identifying world types to deliver gameful experiences for sustainable learning in the metaverse. *Sustainability*, vol. 14, n. 3, pp. 1361.
- PELLEGRINO A., STASI A., WANG R. (2023), "Exploring the intersection of sustainable consumption and the Metaverse: A review of current literature and future research directions", *Heliyon*.
- PERIYASAMY A.P., PERIYASAMI S. (2023), "Rise of digital fashion and metaverse: influence on sustainability", *Digital Economy and Sustainable Development*, vol. 1, n. 1, pp. 16.
- PICCIONI N. (2023), "From physical to metaversal events: An exploratory study. *Italian Journal of Marketing*, pp. 1-16.
- POWNUK A., KREINOVICH V. (2017), "Why linear interpolation?", *Математические структуры и моделирование*, vol. 3, n. 43, pp. 43-49.
- QADIR A.M.A., FATAH A.O. (2023), "Platformization and the metaverse: Opportunities and challenges for urban sustainability and economic development", *EAI Endorsed Transactions on Energy Web*, vol. 10, n. 1.
- RAJ M.M., BAJPAI P. (2022), "Mathematical Analysis of the Environmental Impact of Throwaway Fashion", *European Journal of Sustainable Development*, vol. 11, n. 4, pp. 211-211.
- RANE N., CHOUDHARY S., RANE J. (2023), "Metaverse as a cutting-edge platform for attaining Sustainable Development Goals (SDGs), Available at SSRN 4644035.
- ROSÁRIO A.T., LOPES P.R., ROSÁRIO F.S. (2023), "Metaverse in Marketing: Challenges and Opportunities", *Handbook of Research on AI-Based Technologies and Applications in the Era of the Metaverse*, pp. 204-227.
- SANDARS J. (2021), "Case study research", In *How To Do Primary Care Educational Research* (pp. 121-124), "CRC Press.
- STATA INSIGHTS, Metaverse Worldwide, 2023
- STATA INSIGTS, Fashion in the metaverse, 2023
- VITTORIO A. (2022), *Metaverse Technology Opens Up a Wider World of Privacy Concerns*. Bloomberg Law August 30 <https://news.bloomberglaw.com/privacy-and-data-security/metaverse-technology-opens-up-a-wider-world-of-privacy-concerns> (last accessed November 5, 2022).
- VLĂDUȚESCU, Ș., STĂNESCU G. C. (2023), Environmental Sustainability of Metaverse: Perspectives from Romanian
- WEISS C. (2022), "Fashion retailing in the metaverse", *Fashion, Style & Popular Culture*, vol. 9, n. 4, pp. 523-538.
- YOO K., WELDEN R., HEWETT K., HAENLEIN M. (2023), "The merchants of meta: A research agenda to understand the future of retailing in the metaverse", *Journal of Retailing*, vol. 99, n. 2, pp. 173-192.

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The impact of sustainability and country-of-origin on consumers' willingness-to-pay for a brand: A conceptual framework

CHIARA SCRIMIERI¹ ADAMANTIOS DIAMANTOPOULOS² MICHELA MATARAZZO³
ALBERTO PASTORE⁴

Abstract

The influence of country-of-origin (COO) and sustainability cues on consumers' willingness-to-pay (WTP) for sustainable products has not been fully elucidated in extant literature. This paper proposes a new conceptual framework for understanding how a brand's COO and sustainability information affect consumers' WTP for the focal brand, drawing on three well-established theories in the fields of marketing and psychology: cue utilization theory, signaling theory and attribution theory.

Key words: Sustainability; country-of-origin; willingness-to-pay; conceptual framework.

Framing of the research. In this study we seek to enhance our conceptual understanding how the country-of-origin (COO) of a brand and information about the latter's sustainability impact consumers' willingness-to-pay (WTP) for the focal brand. COO, namely "the country which a consumer associates with a product or brand as being its source, regardless of where the product is actually produced" (Jaffe and Nebenzahl, 2006, p.29) has been found to influence consumers' evaluations of sustainable products (Dekhili and Nguyen, 2021). However, while it is known that country green/environmental image (Chan, 2000; Dekhili et.al, 2021) and COO sustainability reputation (Cowan and Guzman, 2020) have an impact on sustainable product attributes in consumer decision making (Brand and Rausch, 2021), it is unclear exactly how COO influences WTP in the presence versus absence of sustainability cues.

Extant literature specifically focusing on the interplay between COO and sustainability with explicit focus on WTP as an outcome variable is both sparse and (highly) contradictory. For example, Magnusson et al. (2015) found that consumers perceive corporate social responsibility (CSR) initiatives significantly more positively when they are associated with countries that have a strong environmental reputation. In turn, this positive perception leads to a higher WTP for the products or services offered by these firms. However, this effect was not observed in the study by Dekhili and Achabou (2015) who found that, while a favorable COO image has no impact on the WTP for an eco-labeled product, an unfavorable COO image has a negative impact on the WTP for the product. A more recent study by Montanari et al., 2023 supported Dekhili and Achabou (2015) findings in the case of a favorable COO image (i.e., no effect on WTP) but found completely the opposite in the case of a less favorable COO image; WTP actually increased for the sustainable product when associated with the weaker COO.

In short, the literature shows that the simultaneous presence of COO and sustainability stimuli can affect consumers' WTP. Nonetheless, how the relationship between COO and sustainability impacts consumers' WTP remains ambiguous and unclear. This is an important question since WTP denotes the maximum price a consumer is willing to spend on a product or service, through a trade-off between perceived benefits and costs (Homburg et al., 2005; Koschate-Fischer et al., 2012) and is, therefore, of substantial managerial relevance for the development of pricing strategies (Miller et al., 2017; Wertenbroch and Skiera, 2002; Yuen et al., 2016) and the competitive positioning of companies. Although there is evidence indicating an increasing consumer inclination towards sustainable products and services (Elhoushy and Lanzini, 2021; Paul et al., 2016; Rosenbaum et al., 2022), several researchers have highlighted a discrepancy between the significance customers claim to assign to sustainability and their actual buying decisions (Narayanan and Singh, 2023; Barbarossa and Pastore, 2015). This disparity between consumer attitudes and behavior is widely acknowledged in the consumer behavior and social psychology literature (Carrigan and Attala, 2001; Roberts, 1996; Abraham and Sheeran, 2003), however, it is particularly relevant in the context of sustainable consumption since "sustainability attributes do not always drive consumer choice, even when consumers value sustainability positively" (Bangsa and

¹ Sapienza University of Roma
e-mail: chiara.scrimieri@uniroma1.it

² e-mail: adamantios.diamantopoulos@univie.ac.at

³ University of Marconi
e-mail: m.matarazzo@unimarconi.it

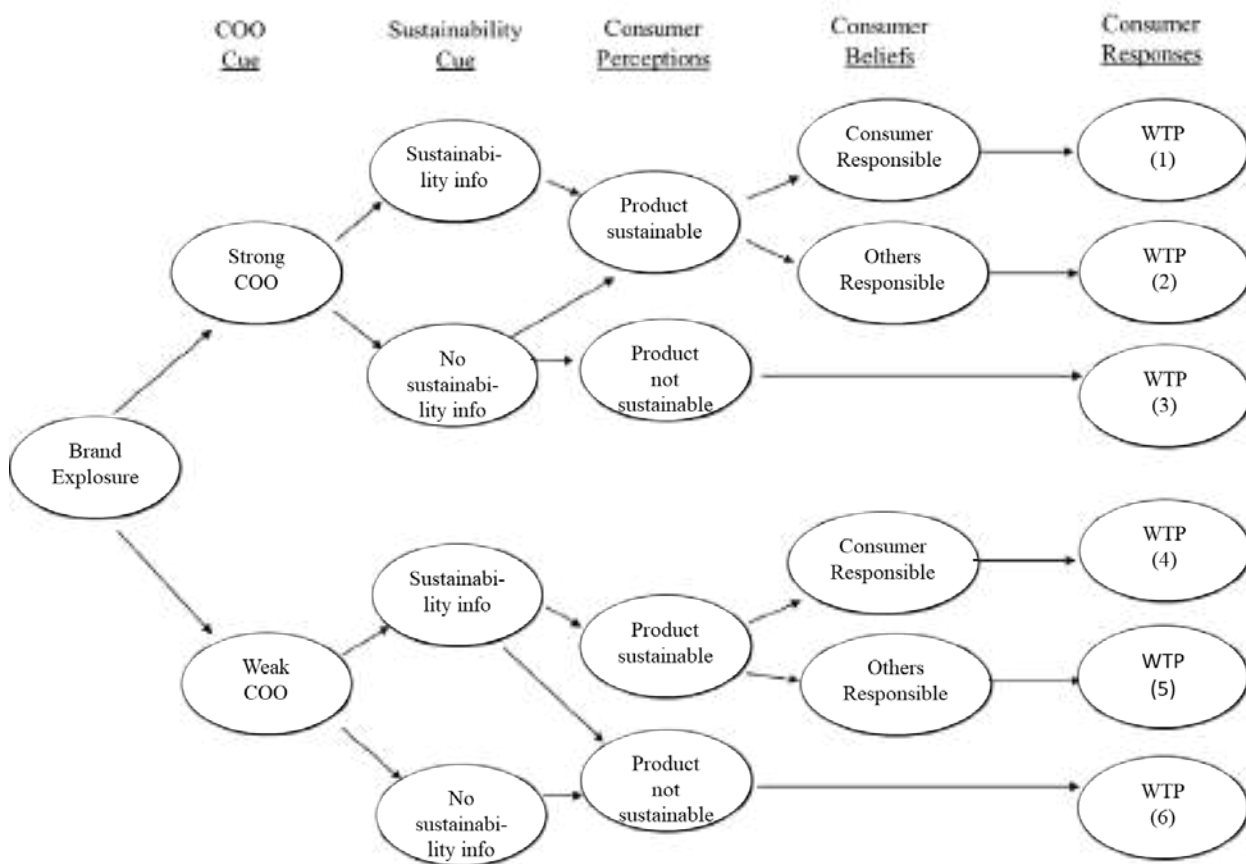
⁴ Sapienza University of Roma
e-mail: alberto.pastore@uniroma1.it

Schlegelmilch, 2020, p.2). Put simply, consumers may well display positive attitudes toward sustainable products but may not be willing to bear additional costs to obtain them.

Purpose of the paper and methodology. We propose a conceptual framework to elucidate the potential responses of consumers in terms of WTP when a brand is associated with either a strong or a weak COO in the presence and absence of sustainability information (e.g., an eco-label). In doing so, we draw on three well-established theories in the fields of marketing and psychology: cue utilization theory (Jacoby and Haddock, 1971; Olson, 1972; Olson and Jacoby, 1972), signaling theory (Erdem and Swait, 1998; Erdem et al., 2006; Erdem and Swait, 2016), and attribution theory (Heider, 1958; Kelley and Michela, 1980; Folkes, 1988).

Our framework initially distinguishes between two main settings based on the brand's COO (strong vs. weak) and subsequently considers two conditions regarding sustainability information relating to the focal brand (presence vs. absence). This results in a total of four scenarios to which a consumer might be exposed, each of which results in different interpretations as to whether the brand in question is sustainable or not. Such interpretations together with consumers' attributions regarding who should carry the cost of sustainability will then determine WTP. Figure 1 graphically describes our framework; we discuss its logic and relevant pathways in the section that follows.

Figure 1. Proposed conceptual framework.



Source: own elaboration.

Results. According to signaling theory (Erdem and Swait, 1998), companies convey information about their specific attributes, such as their reputation and product features, to gain a competitive advantage; consumers examine these signals when making purchasing decisions (Erdem et al., 2006). In this context, according with cue utilization theory that provides a valid framework for evaluating consumer reactions to different product attributes (Richardson et al., 1994), COO is an extrinsic cue that acts as a signal and influences consumer responses (Lu et al., 2016; Chao 1993). Similarly, sustainability labels are extrinsic cues used by consumers when deciding on sustainable products (Lee et al., 2020). Consistent with the triple bottom-line notion of sustainability (Elkington, 1997), such labels may convey information about environmental sustainability (e.g., carbon footprint), social sustainability (e.g., absence of animal testing) or economic sustainability (e.g., fair trade).

When a brand carries a sustainability label and originates in a country with a strong image, it is more likely that the brand will be perceived as being sustainable as the sustainability cue is more credible. In other words, the consumer is confronted with two consistent positive signals, whereby the COO cue reinforces the sustainability cue. However, in the case of a strong COO, the absence of a sustainability cue does not necessary mean that the consumer will conclude that the brand is not sustainable. This is because the consumer may assume that the brand is sustainable because it originates in a country with a strong COO. Put differently, the COO may act as a "halo" whereby consumer infer the brand's

sustainability based on their beliefs regarding the country sustainability reputation (Cowan & Guzman, 2020). This possibility is shown in Figure 1 by the arrow from “No sustainability info” to “Product sustainable”.

The situation is very different when the focal brand originates in a weak COO. In this case, the presence of sustainability information (a positive signal) does not guarantee that the brand will be perceived to be sustainable. This is because consumers may not believe such information given that the brand’s COO is not strong; in other words, the sustainability information conveyed to consumers is not seen to be credible. This possibility is shown in Figure 1 by the arrow from “Sustainability info” to “Product not sustainable”.

From the above discussion, it becomes evident that COO and sustainability cues should not be considered separately, when they are factored into consumer decision making. As shown in Figure 1, perceptions about a brand’s sustainability are not solely formulated based on the presence of an explicit sustainability cue (e.g., an eco-label) but also implicitly influenced (either positively or negatively) by the brand’s COO.

Once consumers have interpreted the COO and sustainability signals and reached a conclusion about the brand’s sustainability (or lack of), the question arises how they will react in terms of their WTP. Based on signaling theory alone, the prediction would be that a brand perceived to be sustainable and originating in a strong COO (two positive signals), would result in the highest WTP. Conversely, a brand from a weak COO that is not perceived to be sustainable would lead to the lowest WTP. While this line of argument is intuitively appealing, it is also flawed because it fails to take into account a cognitive process commonly used by consumers known as attribution of responsibility (Folkes, 1984); the latter has a significant impact on pro-environmental behavior (Bamberg and Moeser 2007) and can, therefore, also potentially influence the WTP for sustainable products. Attribution refers to the cognitive process of perceiving or inferring the cause of a certain event or behavior (Kelley & Michela, 1980) and the subsequent inferences about the consequences (Folkes, 1988).

Attribution of responsibility has been widely investigated in the context of sustainability research to, for example, understand energy-saving behavior (Yue et al., 2023) or the selection of destinations that have social responsibility initiatives (Su et al., 2020). However, it has not been used to examine the specific locus of responsibility that individuals assign when making decisions about their WTP for sustainable products. A higher cost for a product can be linked to its sustainability (cause) due to consumers believing the explicit sustainability signals received or by assuming sustainability due to the halo effect of COO (see earlier discussion). The consequence is the decision to pay or not pay a higher price for the sustainable product and attribution of responsibility serves as a mediator between the intention to behave in a certain way and the actual behavior (Sun et al., 2022). In this context, consumers often attribute responsibility for sustainability costs to governments or companies rather than to themselves (Montanari et al., 2023), especially when it comes to brands from developed countries (i.e., strong COOs) for which governments provide funding for sustainability and incentivize companies to reduce their socio-environmental impact. Thus, according to attribution theory, consumers who feel personally responsible for sustainability costs are more likely to be willing to pay more for a sustainable product. Conversely, consumers’ WTP is likely to be lower if they attribute the costs of sustainability to others (such as governments, institutions, or companies). In short, the more an individual believes that the locus of responsibility for covering the (extra) cost of sustainability lies with consumers, the higher his/her WTP.

Explicitly taking into account the attribution of responsibility may well explain the lack of difference in WTP between sustainable and not sustainable product versions observed in prior studies (e.g., Narayanan and Singh, 2023). For example, referring to Figure 1, it becomes evident that while WTP (1) can - all other things being equal - be expected to exceed WTP (2), it is not necessarily the case that WTP (2) will be higher than WTP (3) despite the fact that WTP (2) is associated with a product perceived to be sustainable while WTP (3) is associated with a non-sustainable product. Analogous inferences can be drawn about the relationships among WTP (4), WTP (5) and WTP (6).

Some prior studies give the impression that consumers who receive information about sustainability immediately perceive the product or brand as being sustainable, as result of which they are willing to pay a higher price for it (e.g. Del Giudice et al., 2018). Our model questions this “automatic” process as it does not explicitly account either for the credibility of sustainability signals (which, as noted earlier, is a function of the brand’s COO) or for the attribution of responsibility by consumers. Indeed, the conflicting findings of prior empirical research on the simultaneous impact of COO and sustainability cues on WTP may well be due to the neglect of these two factors in the relevant research designs.

Research limitations. A key limitation of the current study - which is also an opportunity for further research - is the absence of empirical data to operationalize the proposed framework and reveal the magnitude of the differences in WTP associated with the different model pathways (i.e., WTP (1) - WTP (6) in Figure 1). Another limitation is the consideration only of a single COO notion (the brand origin) and the neglect of other potentially relevant origins, such as country of manufacture or country of design. A third limitation is the lack of attention to potential moderating variables (e.g., consumer skepticism, cause involvement, type of sustainability information) on the model linkages. The same applies to control variables (e.g. income or price sensitivity) that may also impact consumers’ WTP.

Managerial implications. Our conceptual framework is useful for international marketing managers who wish to capitalize on sustainability claims and COO associations when formulating their strategies for entering new markets and determining price positioning strategies. For example, comparing WTP (1) with WTP (3) and WTP (4) with WTP (6) should offer insights into the maximum gain that can be expected as result of sustainability efforts. Similarly, comparing WTP (1) with WTP (4) and WTP (3) with WTP (6) should reveal any WTP differentials due to COO differences.

Furthermore, comparing WTP (2) with WTP (3) and WTP (5) with WTP (6) should help managers determine whether the extra costs of sustainability are likely to be covered by consumers' higher WTP. Needless, to say, that for these comparisons to be of practical value, marketing research should be conducted in the specific product category of interest with the relevant brand origins as COO stimuli.

Finally, the proposed framework suggests that consumers may exhibit higher WTP due to their beliefs about the locus of sustainability responsibility. Therefore, managers can encourage consumers to buy sustainable products by appealing to their sense of personal responsibility as well as trying to stimulate it, for example, with sustainability awareness campaigns.

Originality of the paper. Our framework provides a new theoretical lens to the study on pro-environmental consumer behavior by specifically, examining the impact of sustainability and the COO cues on consumers' WTP and highlighting the close interdependence of these cues. The novelty of the proposed framework lies in the explicit consideration of the credibility of the information associated with these cues as well as the attribution of responsibility aspect that has hitherto not been taken into account in prior research on the sustainability-WTP link.

References

- ABRAHAM C., SHEERAN P. (2003), "Acting on intentions: The role of anticipated regret", *British Journal of Social Psychology*, vol. 42, pp. 495-511.
- BANGSA A.B., SCHLEGELMILCH B.B. (2019), "Linking sustainable product attributes and consumer decision-making: Insights from a systematic review", *Journal of Cleaner Production*, vol. 245, pp. 118902.
- BRAND B.M., RAUSCH T.M. (2021), "Examining sustainability surcharges for outdoor apparel using Adaptive Choice-Based Conjoint analysis", *Journal of Cleaner Production*, vol. 289, 125654.
- BAMBERG S., MÖSER G. (2007), "Twenty years after Hines, Hungerford, and Tomera: a new meta-analysis of psycho-social determinants of pro-environmental behavior", *Journal of Environmental Psychology*, vol. 27, n. 1, pp. 14-25.
- BARBAROSSA C., PASTORE A. (2015), "Why environmentally conscious consumers do not purchase green products: A cognitive mapping approach", *Qualitative Market Research*, vol. 18, n. 2.
- CARRIGAN M., ATTALLA A. (2001), "The myth of the ethical consumer: do ethics matter in purchase behaviour?", *Journal of Consumer Marketing*, vol. 18, n. 7, pp. 560-577.
- CHAN R.Y. (2000), "The effectiveness of environmental advertising: the role of claim type and the source country green image", *International Journal of Advertising*, vol. 19, n. 3, pp. 349-375.
- CHAO P. (1993). Partitioning country-of-origin effects: Consumer evaluations of a hybrid product", *Journal of International Business Studies*, vol. 24, pp. 291-306.
- COWAN K., GUZMAN F. (2020), "How CSR reputation, sustainability signals, and country-of-origin sustainability reputation contribute to corporate brand performance: An exploratory study", *Journal of Business Research*, vol. 117, pp. 683-693.
- DEKHILI S., CROUCH R., EL MOUSSAWEL O. (2021), "The relevance of geographic origin in sustainability challenge: the facets of country ecological image", *Journal of Consumer Marketing*, vol. 38, n. 6, pp. 664-678.
- DEKHILI S., ACHABOU M. (2015), "The Influence of the Country-of-Origin Ecological Image on Ecolabelled Product Evaluation: An Experimental Approach to the Case of the European Ecolabel", *Journal of Business Ethics*, vol. 131, n. 1.
- DEKHILI S., NGUYEN T.P. (2021), "Green consumption in Vietnam: Effects of eco-certification, brand, and moderate incongruity of their origins on purchase intention", *Recherche et Applications en Marketing*, vol. 36, n. 3, pp. 25-49.
- DEL GIUDICE T., STRANIERI S., CARACCILO F., RICCI E.C., CEMBALO L., BANTERLE A., CICIA G. (2018), "Corporate Social Responsibility certifications influence consumer preferences and seafood market price", *Journal of Cleaner Production*, vol. 178, pp. 526-533.
- ELHOUSHY S., LANZINI P. (2021), "Factors affecting sustainable consumer behavior in the MENA region: A systematic review", *Journal of International Consumer Marketing*, vol. 33, pp. 1-24.
- ELKINGTON J. (1997). *Cannibals with forks - Triple bottom line of 21st century business*. Stoney Creek, CT: New Society Publishers.
- ERDEM T., SWAIT J. (1998), "Brand Equity as a Signaling Phenomenon", *Journal of Consumer Psychology*, vol. 7, n. 2, pp. 131-157.
- ERDEM T., SWAIT J., VALENZUELA A. (2006), "Brands as signals: A cross-country validation study", *Journal of Marketing*, vol. 70, n. 1, pp. 34-49.
- ERDEM T., SWAIT J. (2016), "The Information-Economics Perspective on Brand Equity", *Foundations and Trends in Marketing*, vol. 10, n. 1, pp. 1-59.
- FOLKES V. (1984), "Consumer reactions to product failure: An attributional approach", *Journal of Consumer Research*, vol. 10, n. 4, pp. 398 - 409.
- FOLKES V. (1988), "Recent attribution research in consumer behavior: A review and new directions", *Journal of Consumer Research*, vol. 14, n. 4, pp. 548 - 565.
- HEIDER F. (1958), *The Psychology of Interpersonal Relations*, Wiley, New York.
- HOMBURG C., KOSCHATE N., HOYER W.D. (2005), "Do Satisfied Customers Really Pay More? A Study of the Relationship Between Customer Satisfaction and Willingness to Pay", *Journal of Marketing*, vol. 69, n. 2, pp. 84-96.
- JACOBY J., OLSON J.C., HADDOCK R.A. (1971), "Price, brand name, and product composition characteristics as determinants of perceived quality", *Journal of Applied Psychology*, vol. 55, n. 6, pp. 570-9.
- JAFFE E., NEBENZAHL I. (2006), *National image & competitive advantage: The theory and practice of place branding*, (2. ed.), Copenhagen: Copenhagen Business School Press.
- KELLEY H., MICHELA J. (1980), "Attribution theory and research. *Annual Review of Psychology*, vol. 31, pp. 457-501.
- KOSCHATE-FISCHER N., DIAMANTOPOULOS A., OLDENKOTTE K. (2012), "Are consumers really willing to pay more for a favorable country image? A study of country-of-origin effects on willingness to pay", *Journal of International Marketing*, vol. 20, n. 1, pp. 19-41.

- LEE E., BAE J., KIM K.H. (2020), “The effect of environmental cues on the purchase intention of sustainable products”, *Journal of Business Research*, vol. 120, pp. 425-433.
- LU I.R.R., HESLOP L.A., THOMAS D.R., KWAN E. (2016), “An examination of the status and evolution of country image research”, *International Marketing Review*, vol. 3, n. 6, pp. 825-850.
- MAGNUSSON P., WESTJOHN S.A., ZDRAVKOVIC S. (2015). An examination of the interplay between corporate social responsibility, the brand’s home country, and consumer global identification”, *International Marketing Review*, vol. 32, n. 6, pp. 663-685.
- MILLER S., TAIT P., SAUNDERS C., DALZIEL P., RUTHERFORD P., ABELL W. (2017), “Estimation of consumer willingness-to-pay for social responsibility in fruit and vegetable products: a cross-country comparison using choice experiments”, *Journal of Consumer Behaviour*, vol. 16, n. 6, pp. 13e25.
- MONTANARI M.G., MATARAZZO M., DIAMANTOPOULOS A. (2023), “The role of country-of-origin in the relationship between sustainability and consumers’ willingness to pay for a brand”, *Conference Proceedings in Sinergie-SIMA Management Conference 2023*, pp. 121-125.
- NARAYANAN S., SINGH G.A. (2023), “Consumers’ willingness to pay for corporate social responsibility: Theory and evidence”, *International Journal of Consumer Studies*, vol. 47, n. 6, pp. 2212-2244.
- OLSON J.C. (1972), *Cue utilization in the quality perception process: A cognitive model and an empirical test*, In Purdue University.
- OLSON J.C., JACOBY J. (1972), “Cue utilization in the quality perception process”, *Chicago, IL* pp. 167-79.
- PAUL J., MODI A., PATEL J. (2016), “Predicting green product consumption using theory of planned behavior and reasoned action”, *Journal of Retailing and Consumer Services*, vol. 29 pp. 123-134.
- RICHARDSON P.S., DICK A.S., JAIN A.K. (1994). Extrinsic and intrinsic cue effects on perceptions of store brand quality”, *Journal of Marketing*, vol. 58, n. 4, pp. 28-36.
- ROBERTS J.A. (1996), “Green Consumers in the 1990s: Profile and Implications for Advertising”, *Journal of Business Research*, vol. 36 pp. 217-231.
- ROSENBAUM M.S., RUSSELL-BENNETT R., CONTRERAS-RAMÍREZ G. (2022), “Editorial: Research priorities in the new service marketplace”, *Journal of Services Marketing*, vol. 36, n. 8, pp. 1009-1014.
- SU L., GONG Q., HUANG Y. (2020), “How do destination social responsibility strategies affect tourists’ intention to visit? An attribution theory perspective”, *Journal of Retailing and Consumer Services*, vol. 54, C.
- SUN X., TIAN Z., WANG J., SU W. (2022), “The impact of environmental commitment on green purchase behavior in China”, *Journal of Retailing and Consumer Services*, vol. 69, 103169.
- WERTENBROCH K., SKIERA B. (2002), “Measuring consumers’ willingness to pay at the point of purchase”, *Journal of Marketing Research*, vol. 39, n. 2, pp. 228-242.
- YUE, T., ZHOU J, ZHANG Y, LI M, WANG Q, LONG R, LIU J. (2023), “Impact of Attributional Style of Behavior Outcome on the Sustainable Development of Residents’ Energy-Saving Behavior: Differences in Policy Responses of Residents”, *Applied Sciences*, vol. 13, n. 5, pp. 3319.
- YUEN K.F., THAI V., WONG Y. (2016), “Are customers willing to pay for corporate social responsibility? A study of individual-specific mediators”, *Total Quality Management and Business Excellence*, vol. 27 pp. 912-926.

Conceptualizing perceptions of the institutionally derived ‘maneuverable space’ for value (co)creation

JIMMIE RÖNDELL¹ PETER EKMAN²

Framing of the research. Understanding how to successfully identify, generate, and offer resources to customers and other stakeholders is essential for any business enterprise. This process involves attending to the ever-changing needs of customers, which are influenced by shifts in market regulations, cultural practices, and cognitive frameworks. These institutional arrangements shape and are shaped by business and societal behavior, affecting perceptions of the available solution space, which refers to the boundaries of resource integration for generating solutions.

Continuous evaluation and reevaluation of activities and resources in relation to the business landscape are crucial for enterprises to adapt to the market environment, often described as a service ecosystem. Conceptual frameworks provide a roadmap for navigating this changing terrain, enabling businesses to cope with incremental or radical changes by understanding market dynamics and innovating new resource combinations to address customer needs.

In recent years, there has been growing interest in incorporating institutional aspects into theoretical developments of markets as ecosystems, where value creation is seen as a co-creative process involving the integration of resources from various actors. However, there remains a need for further research on how institutional elements shape value co-creation processes and market dynamics. Incorporating institutional elements into market theories is essential because regulatory, normative, and cognitive rules influence resource integration and shape market behaviors. These elements are fundamental for understanding market changes and innovation diffusion, as they both enable and constrain how resources are accessed and integrated, thereby affecting the perceived value of solutions.

Business enterprises must understand how to effectively identify, generate, and offer resources to customers while navigating changing institutional arrangements in markets. Institutional elements, such as regulations, norms, and cognitive frameworks, shape market behavior and influence the perceived ‘solution space’ (the potential and experiences value) for resource integration. Recent research emphasizes integrating institutional aspects into theoretical frameworks to comprehend value co-creation processes.

Purpose of the paper. To move beyond traditional views of value-added transactions towards understanding value-in-use from resource integration, this paper introduces the concept of the institutional solution space. This concept focuses on how institutional arrangements enable or limit the potential solution space for resource integration activities, deepening our understanding of value generation through actor-generated institutions. Drawing on a case study of the music industry's digitalization and market transformation, this paper illustrates the concept of the institutional solution space in practice. It proposes pathways for mid-range theory developments on market change and the role of institutions in shaping markets as ecosystems, complementing recent research on market innovation and emergence. Viewing markets as ecological networks of organized behavior systems, marketing activities involve the integration and recombination of resources to solve specific problems and meet customer needs. The accessibility and utilization of resources affect the potential and perceived value of solutions, known as the solution space, which is influenced by institutional arrangements.

Institutional elements, including regulatory, normative, and cultural/cognitive aspects, enable and constrain value co-creation processes by shaping actor interactions and resource integration. Understanding the dynamic nature of institutional logics and shared arrangements is essential for grasping the contextual dimension of resource integration and value creation.

In conclusion, the concept of the institutional solution space offers a framework for understanding how institutional arrangements influence resource integration and value co-creation in markets. By considering regulatory, normative, and cultural/cognitive aspects, businesses can better navigate the evolving market landscape and innovate to meet changing customer needs.

Methodology. The paper is primarily conceptual in nature, we do however rapport on on findings from the the music industry's digitalization illustrate the changing institutional solution space, hence, contextualizing the papers conceptual approach.

Results. The music industry contextualualization demonstrates how institutional elements influence resource integration and value co-creation. The institutional solution space concept helps understand the dynamic interplay between institutions, resource integration, and value creation. It emphasizes the need for firms to adapt to changing institutional elements to capitalize on emerging opportunities. The institutional solution space comprises regulative,

¹ e-mail: jimmie.rondell@mdu.se

² e-mail: peter.ekman@mdu.se

normative, and cultural-cognitive elements that enable or limit resource integration possibilities (Fehrer et al., 2020). Firms must recognize these elements' impact on value propositions and adapt to changing institutional arrangements. By focusing on resource integration and the institutional solution space, firms can better navigate market changes and enhance value creation.

We report on findings stating that, initially relying on vinyl records and CDs, the industry was unprepared for the shift to digital music facilitated by the internet. Early P2P file-sharing platforms disrupted traditional distribution models, challenging existing norms and regulations. However, market reactions, such as Apple's iTunes and the iPod, adapted to these changes by offering legal alternatives, reshaping the industry. The digitalization of the music industry provides a compelling example illustrating the evolving institutional solution space, without making broad empirical generalizations.

-From Vinyl Records to CDs:

For decades, the music industry thrived on vinyl records and CDs until the late 1990s when the emergence of the World Wide Web introduced new challenges. While the industry capitalized on the transition to CDs by re-issuing back-catalogs, it underestimated the impact of high-speed internet connections and online piracy. Initially dismissing online piracy as a minor inconvenience, industry leaders failed to anticipate users' increasing access to affordable computers, larger storage capacities, and faster internet speeds. Consequently, consumers found it easier to download music illegally than to purchase CDs.

-The Music Goes Online:

Early adopters utilized peer-to-peer (P2P) software to share music, exploiting a legal grey area. As technology advanced, new P2P platforms like Pirate Bay made accessing music easier and more widespread, challenging traditional norms of music ownership and consumption. With limited legal alternatives, users gravitated towards P2P platforms, reshaping perceptions of legality and ethicality.

-The Market Reacts:

Facing declining CD sales, the music industry had to adapt its value proposition. Apple's iTunes and iPod emerged as pioneers in offering legal digital alternatives, allowing users to purchase individual songs and compile personalized playlists. Rather than resisting technological change, Apple's approach embraced it, expanding opportunities for both users and companies. Today, consumers can access music through various channels, including digital platforms like iTunes and Spotify, as well as traditional formats like CDs and vinyl records.

Contrary to early predictions of a decentralized music distribution landscape, digital distribution is now dominated by a few key players such as Apple's iTunes, Tidal, and Spotify. While the range of solutions for accessing and enjoying music has expanded in recent years, the number of major players remains relatively concentrated compared to traditional record stores.

In summary, the illustration of the music industry's digitalization highlights the dynamic interplay between technological innovation, consumer behavior, and institutional change. By adapting to shifting market dynamics and embracing digital solutions, the industry has managed to evolve and thrive in the digital age, offering consumers a diverse range of options for accessing and enjoying music.

Research limitations. This conceptual paper prioritizes dynamic actor and resource constellations within service ecosystems over linear value chains. It aligns with the notion of markets as constituted by value constellations rather than linear value chains. However, while the paper aims for midrange theory development, it does not propose specific predictions due to its focus on presenting a comprehensive model. Future research could focus on developing propositions to predict the outcomes of resource integration in light of institutional elements and arrangements. Complementary empirical studies and conceptual refinements of the institutional solution space are encouraged to further elucidate the role of institutions in markets and marketing. While this paper presents a conceptual framework for understanding the institutional solution space, further empirical research is needed to validate and refine the concept. Future studies could develop propositions to predict value co-creation outcomes based on institutional arrangements. Additionally, exploring the role of institutions in specific industries and contexts could provide deeper insights into market dynamics and resource integration processes.

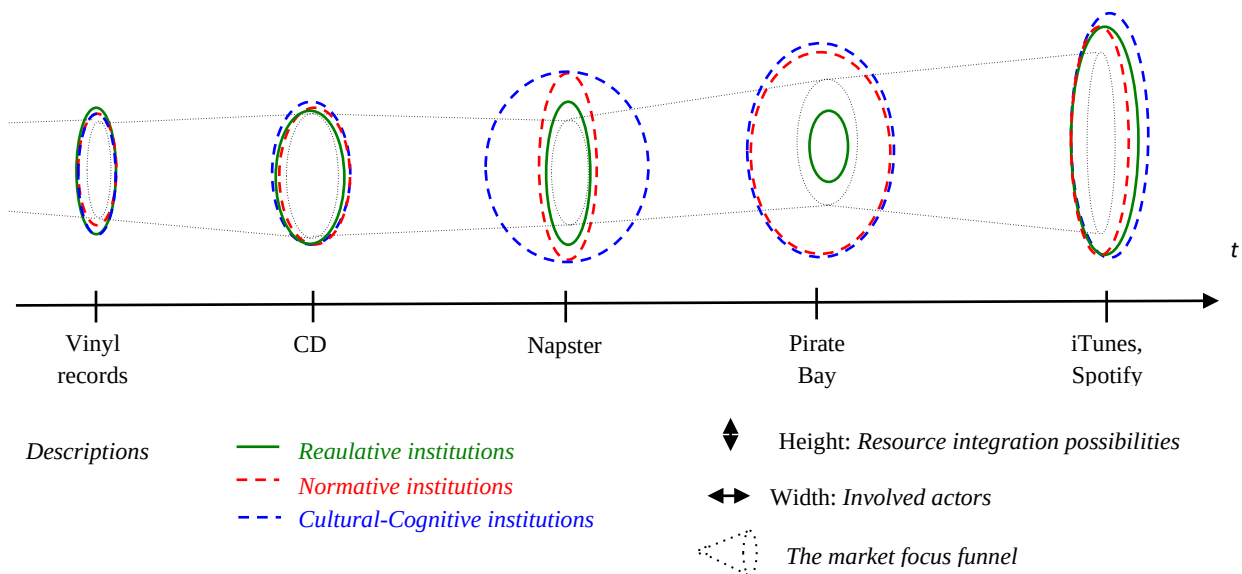
Managerial implications. Managers can leverage the institutional solution space concept to understand how institutional elements influence resource integration and value co-creation. This understanding can inform strategic decisions and help firms adapt to changing market conditions. The concept offers a holistic view of markets as starting point for analysis, and enables managers to identify opportunities for innovation and growth.

From a business perspective, the provided illustration shows how institutional elements interchangeably affect the actors actually being considered part of the context (and consequently the relevance and value of the resources they provide) and if and how their activities and resources affect the potential value that can be generated (in terms of the perceived "space" in which actors can integrate the resources). The solution space, as the perceived value creation potential, is both enabled and delimited over time by institutional elements—can be guided by regulation or deregulation, normative behavioral changes, or shifting cognitive-cultural frames of reference amongst social and business actors. By recognizing the business practice relevance of the "institutional solution space" as equally important to understanding

its role in the current market space, firms can be better prepared for changes beyond, for example, new technologies per se. As illustrated in the case study, the advent of new technologies is sometimes only an instigator of change, whereas the interplay of the changes in the institutional elements generate more transformative changes. The institutional elements change over time, affecting both resource integration activities, the prominence of involved actors, and how both social and business actors reposition their value propositions (i.e., leading to a realigned opportunity space). As previously outlined, different competing institutional elements are at play at different points in time, both enabling and limiting the potential value generated through actors' resource integration activities. The case also illustrates how different (established and non-established) actors can be both directly and indirectly engaged in and affected by institutional change, shaping their configuration in the service ecosystem and the nature of resource integration. It thus offers insights into the institutional solution space market's shaping and market innovating potential.

Fig. 1 contextualizes the institutional solution space as the area of resource integration possibilities (height) and engaged actors (width), also illustrating how the studied actors position their value proposition (opportunity space) at each point in time (dotted circles).

Fig. 1: Conceptualizing the institutional solution space (the case of the music industry).



Source: Authors own illustration.

The music industry transformation illustrates how the different institutional elements change over time based on the involved actors' (both business and social actors) reframing of current practices and norms. It also illustrates how the foci for a study—whether at the macro, meso, or micro level (i.e., a market, a group of companies, or an organization)—will need to adapt when it comes to framing the boundaries of the phenomena and the related actors. The institutional elements are often connected to the pre-designated actor roles (Thornton et al., 2012), as well as how “the rules of the game” (North, 1990) are understood. In Figure 1, the regulative elements that offer a certain institutional space are marked, but the normative or cultural-cognitive can differ. Therefore, there will often be a degree of friction between the different elements.

The case can be seen as a micro-level contextualization of the institutional solution space concept. The case illustrates how the dynamics of institutional elements affect the perceived boundaries (the resource integration potential) of available solutions in how the perceived nature of resources and the dynamic role and “functional identity of actors” (Rondell and Sorhammar, 2010) are integrated to generate a solution. The music listeners' newly acquired cognitive abilities of integrating digital technology iteratively created a cultural change that had a profound effect on the normative behavior of how music is marketed, distributed, and accessed. This, in turn, led to a change of legislation (i.e., the regulative institutional element) (Scott, 2014), thus enforcing and offering new opportunities for firms to redesign their value propositions. Rather than offering a pre-defined utilization of “plastic discs” as resource integration between CDs and a CD player, recorded music became a resource in itself, used as input for experiencing music in a number of contexts. Not only did the changes in culturally and cognitively derived behaviors led to changes in the normative and regulative dimensions, but the changes in the institutional elements also explained the changes in the very nature of the resources used for enjoying music (i.e., how new combinations and constellations of actors, resources, and activities were integrated to generate value).

Resources not considered relevant in the music context prior to the transition (telephone/modem lines, optical fiber internet connections) “became” relevant and vital (Fischer et al., 2010; Löbler, 2013; Peters et al., 2014) and the nature of “existing” resources was transformed in terms of their operand and operand natures. As stated above, rather than

focusing on the operand characteristics of music on a CD and firm output, music as a resource has become more operant in its nature, being used as input for value creation and transitioning the business from selling plastic discs to facilitating resource integration conditioned by the actors' perceived institutional solution space. This transitional change is not over; for instance, some artists and record companies provide user-toolkits in the form of snippets from a song to enable and even encourage fans to make personal versions of songs to be posted on social network websites. Facilitating user value co-creation (through resource integration) thereby contributes to a dynamic institutional solution space, in which the traditionally divided consumption and production contexts become more embedded. The opportunities offered by the changing and an expanding institutional solution space by using and integrating non-traditional resources and practices-competencies, capabilities and attributes-are potentially beneficial for all (social and economic) actors (as resource integrators) in markets (as networks and service ecosystems).

Originality of the paper. The institutional solution space concept also relates to market innovation, where alignment of institutional elements determines the success of new value propositions. Proactive engagement with institutional change can provide first-mover advantages and strengthen performance. Firms should develop institutional capabilities to leverage changing institutional arrangements for competitive advantage. The institutional solution space concept offers insights into how actors engage in resource integration and value co-creation within a service ecosystem. It highlights the role of institutional elements in shaping market dynamics and provides a framework for understanding market changes and business practices. Managers can use this concept to navigate evolving market conditions and optimize resource integration strategies.

The institutional solution space comprises regulative, normative, and cultural-cognitive elements, alongside actors' resource integration possibilities, shaping viable resource integration scenarios within a service ecosystem. This conceptualization underscores the dynamic nature of the institutional solution space, emphasizing its role in guiding value propositions within evolving institutional contexts.

Understanding the institutional solution space is crucial for grasping the dynamics of resource integration and value co-creation. It highlights the evolving nature of resources and actors' roles, transcending traditional notions of value creation. The dynamic interplay of institutional elements influences resource integration potential and value propositions, driving market evolution.

Market innovation hinges on the alignment of institutional elements. Actors can influence institutional dynamics through proactive engagement, paving the way for new forms of resource integration. However, regulatory alignment is essential for fully-fledged market innovations to materialize, creating legal opportunity spaces for value propositions to thrive.

Enterprises embracing the institutional solution space recognize the importance of offering new solutions aligned with evolving institutional arrangements. This goes beyond mere bundling of offerings, focusing on providing inputs for resource integration that leverage the institutional solution space. Proactive engagement with institutional change can confer first-mover advantages, emphasizing the need to develop institutional capabilities.

In conclusion, the institutional solution space concept offers conceptual originality through valuable novel insights for navigating market dynamics and capitalizing on emerging opportunities for value creation. By embracing this concept, businesses can strategically position themselves within evolving institutional landscapes, driving innovation and fostering competitive advantage.

References

- ALDERSON W. (1965), *Dynamic Marketing Behavior: A Functionalist Theory of Marketing*. Homewood, IL: Richard D. Irwin.
- BACKALER J. (2010), Haier: A Chinese company that innovates. *Forbes.com*, 17 June. Available at: <http://www.forbes.com/sites/china/2010/06/17/haier-a-chinese-company-that-innovates/> (accessed 18 January 2017).
- BAKER J.J., STORBACKA K., BRODIE R.J. (2019), "Markets changing, changing markets: Institutional work as market shaping", *Marketing Theory*, vol. 19, n. 3, pp. 301-328.
- BALDWIN C., VON HIPPEL E. (2011), "Modeling a paradigm shift: From producer innovation to user and open collaborative innovation", *Organization Science*, vol. 22, n. 6, pp. 1399-1417.
- BALLANTYNE D., VAREY R.J. (2006), "Creating value-in-use through marketing interaction: The exchange logic of relating, communicating and knowing", *Marketing Theory*, vol. 6, pp. 335-348.
- BARRETT M., DAVIDSON E., PRABHU J., VARGO S.L. (2015), "Service innovation in the digital age: Key contributions and future directions", *MIS Quarterly*, vol. 39, n. 1, pp. 135-154.
- CHANDLER J.D., VARGO S.L. (2011), "Contextualization and value-in-context: How context frames exchange", *Marketing Theory*, vol. 11, n. 1, pp. 35-49.
- CHANEY D., CARRILLAT F.A., ZOUARI A. (2019), "Uncovering institutional orientation as a new strategic orientation in industrial marketing", *Industrial Marketing Management*, vol. 80, pp. 242-250.
- CLAYTON P. (2006), *Conceptual foundations of emergence theory*, In Clayton P., Davies P. (eds), *The Re-Emergence of Emergence*. Oxford, UK: Oxford University Press, pp. 1-34.
- DAHLANDER L., GANN D.M. (2010), "How open is innovation? Research Policy 39, n. 6, pp. 699-709.
- DIMAGGIO P., POWELL W.W. (1983), "The iron cage revisited: Collective rationality and institutional isomorphism in organizational fields", *American Sociological Review*, vol. 48, n. 2, pp. 147-160.
- EDVARDSSON B., KLEINALTENKAMP M., TRONVOLL B., MCHUGH P., WINDAHL C. (2014), "Institutional logics matter when coordinating resource integration", *Marketing Theory*, vol. 14, n. 3, pp. 291-309.

- EKMAN P., RAGGIO R.D., THOMPSON S.M. (2016), "Service network value co-creation: Defining the roles of the generic actor", *Industrial Marketing Management*, vol. 56, pp. 51-62.
- EKMAN P., RÖNDELL J. (2019), "Bridging S-D Logic and Business Practice with Midrange Theory: From Dichotomous Dualities to Relational Dualities and beyond, in central marketing concepts", In: Vargo S.L. and Lusch R. (eds), *Handbook of Service-Dominant Logic*. SAGE: Thousand Oaks, CA. pp. 619-634.
- EKMAN P., RÖNDELL J., KOWALKOWSKI C., RAGGIO R.D., THOMPSON S.M. (2021), "Emergent market innovation: A longitudinal study of technology-driven capability development and institutional work", *Journal of Business Research*, vol. 124, pp. 469-482.
- FEHRER J.A., CONDUIT J., PLEWA C., LI L.P., JAAKKOLA E., ALEXANDER M. (2020). Market shaping dynamics: Interplay of actor engagement and institutional work", *Journal of Business & Industrial Marketing*, vol. 35, n. 9, pp. 1425-1439
- FISCHER T., GEBAUER H., GREGORY M., REN G., FLEISCH E. (2010), "Exploitation or exploration in service business development? Insights from a dynamic capabilities perspective", *Journal of Service Management*, vol. 21, n. 5, pp. 591-624.
- FROW P., MCCOLL-KENNEDY JR, PAYNE A., GOVIND R. (2019). Service ecosystem well-being: conceptualization and implications for the theory and practice", *European Journal of Marketing*, vol. 53, n. 12, pp. 2657-2691
- FYRBERG A., JÜRIADO R. (2009), "What about interaction? Networks and brands as integrators within service-dominant logic", *Journal of Service Management*, vol. 20, n. 4, pp. 420-432.
- GIDDENS A. (1984), *The Constitution of Society: Outline of the Theory of Structure*. Berkeley, CA: University of California Press.
- GÖLGEÇI I., ALI I., RITALA P., ARSLAN A. (2021), "A bibliometric review of service ecosystems research: current status and future directions", *Journal of Business & Industrial Marketing*, vol. 37, n. 4, pp. 841-858.
- GONÇALVES S.M., DA SILVA R.V., TEIXEIRA N. (2019), "Individual actors and embeddedness in business-to-business interactions", *Industrial Marketing Management*, vol. 76, pp. 181-191.
- HIBBERT S., WINKLHOFFER H., TEMERAK M.S. (2012), "Customers as resource integrators", *Journal of Service Research*, vol. 15, n. 3, pp. 247-261.
- HUNT S.D. (2002), *Foundations of Marketing Theory: Towards a General Theory of Marketing*. Armonk, NY: M. E. Sharpe.
- KAARTEMÖ V., NENONEN S., WINDAHL C. (2020), "Institutional work by market-shaping public actors", *Journal of Service Theory and Practice*. DOI: 10.1108/JSTP-08-2019-0176
- KJELLBERG H., HELGESSON C-F (2007), "On the nature of markets and their practices", *Marketing Theory*, vol. 7, n. 2, pp. 137-162.
- KLEINALTENKAMP M., BRODIE R.J., FROW P., HUGHES T., PETERS L.D., WORATSCHEK H. (2012), "Resource integration", *Marketing Theory* 12, n. 2, pp. 201-205.
- KOWALKOWSKI C., PERSSON RIDEELL O., RÖNDELL J.G., SÖRHAMMAR D. (2012), "The co-creative practice of forming a value proposition", *Journal of Marketing Management*, vol. 28, n. 13-14, pp. 1553-1570.
- LAWRENCE T.B., SUDDABY R. (2006), "Institutions and institutional work. In: Clegg SR, Hardy C., Lawrence T and Nord WR (eds), *The SAGE Handbook of Organization Studies*. London: SAGE, pp. 215-254.
- LAWRENCE TB, SUDDABY R AND LECA B (2011), "Institutional work: Refocusing institutional studies of organization", *Journal of Management Inquiry*, vol. 20, pp. 52-58.
- LÖBLER H. (2013), "Service-dominant networks: An evolution from the service-dominant logic perspective", *Journal of Service Management*, vol. 24, n. 4, pp. 4204-4234.
- MCCRACKEN G. (1986), "Culture and consumption: A theoretical account of the structure and movement of the cultural meaning of consumer goods", *Journal of Consumer Research*, vol. 13, pp. 71-84.
- MÖLLER K., NENONEN S., STORBACKA K. (2020), "Networks, ecosystems, fields, market systems? Making sense of the business environment", *Industrial Marketing Management*, vol. 90, pp. 380-399.
- NENONEN S., STORBACKA K., WINDAHL C. (2019), "Capabilities for market-shaping: triggering and facilitating increased value creation", *Journal of the Academy of Marketing Science*, vol. 47, n. 4, pp. 617-639.
- NG I., PARRY G., SMITH L., MAULL R., BRISCOE G. (2012), "Transitioning from a goods-dominant to a service-dominant logic: Visualising the value proposition of Rolls-Royce", *Journal of Service Management*, vol. 23, n. 3, pp. 416-439.
- NORDIN F., KOWALKOWSKI C. (2010), "Solutions offerings: A critical review and reconceptualisation", *Journal of Service Management*, vol. 21, n. 4, pp. 441-459.
- NORMANN R., RAMIREZ R. (1993), "From value chain to value constellation: Defining interactive strategy", *Harvard Business Review*, vol. 71, n. 4, pp. 65-77.
- NORMANN R. (2001), "Reframing Business: When the Map Changes the Landscape. New Sussex: Wiley.
- NORTH D.C. (1990), "Institutions, Institutional Change and Economic Performance. Cambridge: Cambridge University Press.
- MICHEL S., VARGO S.L., LUSCH R.F. (2008), "Reconfiguration of the conceptual landscape: a tribute to the service logic of Richard Normann", *Journal of the Academy of marketing science*, vol. 36, pp. 152-155.
- ORLIKOWSKI W.J. (1992), "The duality of technology: Rethinking the concept of technology in organizations", *Organization Science*, vol. 3, n. 3, pp. 398-427.
- PENROSE E. (1959), *The Theory of the Growth of the Firm*. Oxford: Basil Blackwell.
- PETERS L.D., LÖBLER H., BRODIE R.J., BREIDBACH C.F., HOLLEBEEK L.D., S.M.ITH S.D., SÖRHAMMAR D., VAREY R.J. (2014), "Theorizing about resource integration through service-dominant logic", *Marketing Theory*, vol. 14, n. 3, pp. 249-268.
- REAY T., HININGS C.R. (2009), "Managing the rivalry of competing institutional logics", *Organization Studies*, vol. 39, pp. 629-652.
- RIDEELL O.P., RÖNDELL J.G., SÖRHAMMAR D. (2013), "How open is open innovation? Considering, adapting and adopting user knowledge and competence in the solution space", In: Eriksson Lundström JSZ, Wiberg M., Hraštinski S., Edenius M. and Agerfalk P. (eds), *Managing Open Innovation Technologies*. Springer-Verlag Berlin Heidelberg, pp. 253-273.
- RÖNDELL J.G., SÖRHAMMAR D. (2010), "Functional identities, resource integrators and the service-dominant logic", *Journal of Customer Behaviour*, vol. 9, n. 1, pp. 19-36.

- RÖNDELL J.G., SÖRHAMMAR D., GIDHAGEN M. (2016), "Co-governance in the consumer engagement process: Facilitating multi-beneficial value creation", *Journal of Strategic Marketing*, vol. 24, n. 3-4, pp. 327-345.
- SCOTT W.R. (2014), *Institutions and Organizations: Ideas, Interests, and Identities*. Thousand Oaks, CA: SAGE.
- SKLYAR A., KOWALKOWSKI C., TRONVOLL B., SÖRHAMMAR D. (2019), "Organizing for digital servitization: A service ecosystem perspective", *Journal of Business Research*, vol. 104, pp. 450-460.
- SLIMANE KB, CHANEY D, HUMPHREYS A., LECA B (2019), "Bringing institutional theory to marketing: Taking stock and future research directions", *Journal of Business Research*, vol. 105, pp. 389-394.
- SMETS M., JARZABKOWSKI P. (2013), "Reconstructing institutional complexity in practice: A relational model of institutional work and complexity", *Human Relations*, vol. 66, n. 10, pp. 1279-1309.
- MELE C., PELS J., STORBACKA K. (2015), "A holistic market conceptualization", *Journal of the Academy of Marketing Science*, vol. 43, n. 1, pp. 100-114.
- STORBACKA K. (2019), "Actor engagement, value creation and market innovation", *Industrial Marketing Management*, vol. 80, pp. 4-10.
- THORNTON P.H., OCASIO W., LOUNSBURY M. (2012), *The Institutional Logics Perspective: A New Approach to Culture, Structure, and Process*. Oxford: Oxford University Press.
- YADAV M.S. (2010), "The decline of conceptual articles and implications for knowledge development", *Journal of Marketing*, vol. 74, n. 1, pp. 1-19.
- VARGO S.L., AKAKA M.A., WIELAND H. (2020), "Rethinking the process of diffusion in innovation: A service-ecosystems and institutional perspective", *Journal of Business Research*, vol. 116, pp. 526-534.
- VARGO S.L., LUSCH R.F. (2004), "Evolving to a new dominant logic for marketing", *Journal of Marketing*, vol. 68, pp. 1-17.
- VARGO S.L., LUSCH R.F. (2011), "It's all B2B... and beyond: Toward a systems perspective of the market", *Industrial Marketing Management*, vol. 40, n. 2, pp. 181-187.
- VARGO S.L., LUSCH R.F. (2016), "Institutions and axioms: An extension and update of service-dominant logic", *Journal of the Academy of Marketing Science*, vol. 44, pp. 5-23.
- VARGO S.L., WIELAND H., AKAKA M.A. (2015), "Innovation through institutionalization: A service ecosystem perspective", *Industrial Marketing Management*, vol. 44, pp. 63-72.
- VARGO S.L., PETERS L., KJELLBERG H., KOSKELA-HUOTARI K., NENONEN S., POLESE F., SARNO D., VAUGHAN C. (2022). Emergence in marketing: an institutional and ecosystem framework", *Journal of the Academy of Marketing Science*, pp. 1-21: <https://doi.org/10.1007/s11747-022-00849-8>
- VON HIPPEL E. (2001), "User toolkits for innovation", *Journal of Product Innovation Management*, vol. 18, n. 4, pp. 247-257.
- VON HIPPEL E., KATZ R. (2002), "Shifting innovation to users via toolkits", *Management Science*, vol. 48, n. 7, pp. 821-833.
- WIELAND H., KOSKELA-HUOTARI K., VARGO S.L. (2016), "Extending actor participation in value creation: An institutional view", *Journal of Strategic Marketing*, vol. 24, n. 3-4, pp. 210-226.
- WIELAND H., VARGO S.L., AKAKA M.A. (2015), "Zooming out and zooming in: Service ecosystems as venues for collaborative innovation", In: Toivonen M. (ed), *Service Innovation*. Tokyo: Springer, pp. 35-50.
- WINDAHL C., KARPEN IO AND WRIGHT, M. (2020), "Strategic design: orchestrating and leveraging market-shaping capabilities", *Journal of Business & Industrial Marketing*, vol. 35, n. 9, pp. 1413-1424.
- WOOLTHUIS R.K., LANKHUIZEN M., GILSING V (2005), "A system failure framework for innovation policy design", *Technovation*, vol. 25, n. 6, pp. 609-619.
- ZIMMERMANN E. (1951), *World Resources and Industries* (2nd edition). New York: Harper & Row.

Narrating the past. Exploring the antecedents of investments in heritage marketing tools by centenarian Italian companies

ANGELO RIVIEZZO¹ GIUSY MIGNONE² ANTONIO LUCADAMO³
MARIA ROSARIA NAPOLITANO⁴

Abstract

In recent years, corporate heritage has assumed considerable importance both in academic debate and managerial practice, in line with the growing attention given to the temporal dimension of organizations and questioning the traditional marketing approach to seeing the past as a “foreign country”. As the past has started to play a role in corporate-level marketing and communication purposes, corporate heritage marketing has emerged as a new academic field. Heritage marketing is based on the strategic use of the company’s historical and cultural heritage and the system of principles and beliefs of individuals and the organization. It offers the opportunity to build long-lasting relationships with all stakeholders. The main aim of this study is to investigate if and how Italian long-lived companies are oriented towards strategic exploitation of their cultural and historical heritage by investigating the actual use of the different tools potentially available to implement a heritage marketing strategy. Indeed, we investigate some potential antecedents of the adoption of the different tools among centenarian companies, namely the family nature of the business, its longevity, its size, and its social responsibility. To this aim, we collected information about 181 large companies entered in the National Register of Italian Historical Firms edited by Unioncamere. Data collection was conducted through desk research, while the Poisson regression model was used to test the hypotheses.

Key words: *heritage marketing; heritage marketing tools; corporate heritage; centenarian companies; Italy.*

Framing of the research. *Although all companies and all brands have a history, whether it be long or short, it is necessary to strategically enhance their journey to be able to boast a heritage (Riviezzo et al., 2021). In recent years, corporate heritage has assumed considerable importance both in academic debate and managerial practice (Balmer, 2011, 2013), in line with the growing attention given to the temporal dimension of organizations (Burghausen and Balmer, 2014). Within the corporate heritage canon, scholars have highlighted the centrality of the past, along with its significance for the present and the future of the company, questioning the traditional marketing approach to seeing the past as a “foreign country” (Balmer and Burghausen, 2019). As the past has started to play a role in corporate-level marketing and communication purposes and its strategic interpretation has offered more and more opportunities for strengthening relationships with corporate stakeholders (Napolitano et al., 2018), corporate heritage marketing has emerged as a new academic field, in search of a shared theoretical framework to be explored in terms of its managerial implications (Riviezzo et al., 2021).*

Adopting a strategic perspective in the process of heritage marketing is essential for a firm to rediscover, affirm and enhance the system of values, resources, skills and events that are the basis of its identity. Heritage marketing is intended as an integrated set of activities starting from the analysis of potentialities of stakeholder engagement and ending in the choice of tools that can communicate the historic and cultural patrimony (Napolitano et al., 2018; Riviezzo et al., 2021; Riviezzo et al., 2015c). More specifically, the past is interpreted from an evolutionary perspective, looking to the future and able to motivate and involve the internal and external stakeholders in the company project.

At the operational level, the company could theoretically use any tools and activities that function in storytelling. The company can use multiple narrative tools to leverage the heritage assets and, in this way, better convey the multidimensional nature of the corporate identity to different stakeholders (Napolitano et al., 2018; Burghausen and Balmer, 2014). Drawing on our previous works (Riviezzo et al., 2016; Napolitano et al., 2018; Garofano et al., 2020;

¹ University of Sannio
e-mail: angelo.riviezzo@unisannio.it

² University of Sannio
e-mail: gmignone@unisannio.it

³ University of Sannio
e-mail: alucadam@unisannio.it

⁴ University Napoli Parthenope
e-mail: mariarosaria.napolitano@uniparthenope.it

Riviezzo et al., 2021), we propose a classification of potential operational tools, reducing the heritage marketing 'kit' to four essential categories:

- **Narrating through words, images and sounds:** this includes all tools and activities where the story is expressed through words, images and sounds, regardless of the medium, e.g. from the most traditional 'paper-based' media - as the monography - to those using computerised technologies, such as websites and social networks.
- **Narrating through products and brands:** all activities carried out to position and communicate the brand and or the product through its heritage, particularly by leveraging evocative and emotional elements, such as historically symbolic brands, aspects of product design, and other elements that contribute to retro-branding and the revival or continuation of historical products.
- **Narrating through places:** this category refers to all the places and structures serving to preserve, enhance and transmit the company's historical memory, such as the original factories, headquarters and plant systems, and newly founded corporate museums and archives, as well as points of sale.
- **Narrating through celebrations and relationships:** this category includes events, celebrations of the crucial stages, milestones and personalities, and participation in associations and networking with historic companies at national and international levels.

Many of the actions used to develop the cultural-historic patrimony of companies would fit into more than one of the above categories. For example, implementing a museum would involve written and, perhaps, audiovisual material, as well as brand communication (Riviezzo et al., 2022). Likewise, the organisation of celebratory events would draw on materials from company archives. Our categorisation serves as an example and is not exhaustive, since the range of potential tools is infinite and subject to continuous innovation and development.

Purpose of the paper. The present contribution focuses on the strategic and operational methods through which the past can be transformed into a competitive asset. Indeed, management scholars have widely investigated the antecedents of business longevity and its relationship with performance (Napolitano et al., 2015; Riviezzo et al., 2015), while scant attention has been devoted to strategies and tools necessary to enhance the historical and cultural heritage accumulated over time. Furthermore, the studies carried out to date on the topic are mainly based on the analysis of individual company experiences, while there is a lack of more far-reaching analyses aimed at detecting the degree of use of heritage marketing tools and methods on a large scale. Thus, even "basic" hypotheses are far from having been empirically tested. For instance, is it or is it not conceivable that the use of heritage marketing tools is influenced by the company's nature of family business? Considering that the entwinement between the history of the family and the company provides "a particular basis for firms to uncover, activate and nurture heritage-based corporate identities and brands" (Blombäck and Brunninge, 2013, p. 328) we can expect such a result, but empirical evidence is missing to date. Similarly, the answer to other questions is not clear and unambiguous: is there a relationship between company longevity and the use of heritage marketing tools? The complex relationship between history and heritage has been the subject of several contributions (Arnold et al., 1998). On the one hand, scholars highlighted how the mere fact of having spanned the decades gives a company and its products a special appeal (Burghausen and Balmer, 2014). On the other hand, scholars have recognized how even the traces of a shorter journey can be exploited through narrative elements capable of generating emotional involvement in the stakeholders (Riviezzo et al., 2021). Also, scholars emphasized that corporate heritage does not only reflect firm-specific elements but also embraces place-specific resources that are embedded in company products and may be communicated through heritage marketing tools, such as, for instance, a corporate museum (Rudd and Davis, 1998). In this perspective, the establishment of a corporate museum is even intended as an expression of the social responsibility of the firm (Bonti, 2014). Thus, does it make sense to hypothesize that the use of heritage marketing tools is influenced by the company's social responsibility? And, finally, it is known that the process of heritage marketing is very complex, both at the strategic and operational levels, and requires heterogeneous and specialised skills that may not be fully available within the organization (Riviezzo et al., 2021). Thus, can the use of heritage marketing tools be influenced by the company's availability of resources, in term of size and turnover?

We used the categorisation of tools described above as a main guidance in investigating the most common and diffused tools used by Italian long-lived companies, but we limited the analysis to only part of the above-mentioned tools. Then, we tested the following hypotheses:

- H1: the family nature of the business enhances the use of heritage marketing tools.
- H2: the longevity of the business enhances the use of heritage marketing tools.
- H3: the size of the business enhances the use of heritage marketing tools.
- H4: the social responsibility of the business enhances the use of heritage marketing tools.

Methodology. In order to identify the antecedents that can determine the propensity of long-lived companies to invest in communication tools for heritage enhancement, comprehensive desk research was conducted. This research aimed to gather detailed and up-to-date information on the primary heritage marketing tools and activities previously identified.

In particular, the study focused on companies listed in the National Register of Italian Historical Firms edited by Unioncamere. All companies of any legal form operating in any economic sector, active, with uninterrupted operation within the same product sector, for a period of no less than 100 years can be enrolled in this Register (established by Unioncamere in 2011). We decided to focus only on active companies, in the form of joint-stock companies. In fact, we believed that for this type of business, the heritage marketing action could be more structured and robust. Furthermore, it was considered easier for these companies to find the necessary information from secondary sources, with desk research. Finally, in a first phase of the research whose results are presented here, we decided to further narrow the

sample, by focusing only on joint-stock companies that were large in size (annual turnover exceeding 50 million euros and number of employees exceeding 249). Using this additional restriction, 181 companies were ultimately identified. In this group, 77 are family businesses.

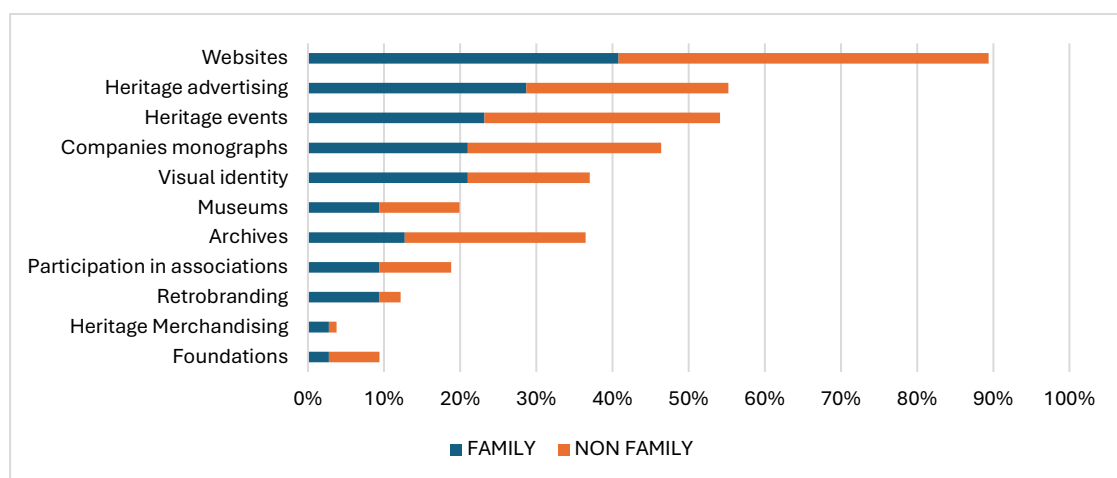
The historical companies under investigation operate mainly in the industrial sector (72.30%), services (29.81%), and commerce (7.75%). A residual portion is engaged in other activities, including agriculture and craftsmanship, representing 2.76%. Looking at the foundation year, the vast majority (72.9%) can boast a history ranging from 100 to 150 years. 20.44% have a history spanning from 150 to 200 years, while 3.30% can claim a history of more than two centuries. Finally, considering the geographical distribution of the investigated companies, they are primarily concentrated in the North of Italy (81.76%), followed by the Center (12.70%), and the South with a residual presence (5.52%). Specifically, Lombardia stands out as the region with the highest concentration of centenarian companies, accounting for 32.04 % of the total sample under investigation. Piemonte (14.36%) and Emilia Romagna (12.70%) are the following regions.

For each of the 181 historic companies identified, we followed a standard research protocol which allowed to collect the information necessary to investigate the use of the various heritage marketing tools from secondary sources. As a first step, the institutional website of each company was consulted. Subsequently, any institutional pages created on the main social networks and other websites possibly dedicated by the company to specific heritage marketing activities were consulted (for example, the website of the company museum, the archive and so on). Further secondary sources were then consulted to delve deeper into specific activities and initiatives. For instance, press articles (for events, anniversaries, awards or other initiatives promoted by companies) were widely used. Finally, external and specialized sources were used to support or integrate the information found on the company's website and social networks. For instance, to verify the possible presence of a museum, information were also sought in the database created by Museimpresa, the Italian association of business archives and museums; to verify the possible creation of an archive, the list of company archives in the National Archives System (SAN) was also considered; to verify the existence of a monograph, the database of the Business Monographs Observatory (OMI) was regularly consulted; and so on.

In line with the established aims, information on factors that could affect the use of heritage marketing tools were also collected from secondary sources (including the database Orbis by Bureau van Dijk). We collected information related to company's shareholder structure (assessed as a business owned by a family or not), company's longevity (measured in years of uninterrupted activity), company's size (measured in turnover), and corporate social responsibility (assessed through the regular publication of a social report).

Results. The results reveal a heterogeneous use of the different heritage marketing tools investigated, with companies' clear predilection for some more common tools and little attention to other tools. As shown in Figure 1, the companies under scrutiny mainly use their institutional websites to tell their story (89.5%). The main other tools used are events organized to celebrate special anniversaries and other historical occasions (54.14%), traditional advertising campaigns in the mass media, in which there are clear references to the historical and cultural heritage of the company (55.2%), and the use of visual identity to highlight the historicity of the company (37%). Also significant is the number of companies that have decided to tell their story in a corporate monograph (46.40%). Equally important is the increasingly widespread diffusion of business archives 36.46%, followed by corporate museums 19.88%.

Fig. 1: Frequency distribution of investigated companies by heritage marketing tools



If we focus exclusively on family businesses, it emerges a greater propensity to convey their narrative through videos and advertising, referred to as heritage advertising (28.7%). These companies strategically use visual identity (21%) to accentuate the historical significance inherent in both the family and the company. They also increasingly engage in retrobranding activities (9.4%). Thus, some differences seem to emerge based on the family nature of the business. And, in turn, this makes more interesting the analysis of the possible antecedents of the use of heritage marketing tools.

To this aim, we consider the number of tools used by companies as the dependent variable in a Poisson regression, which is an appropriate statistical model for count data.

Tab. 1: Estimates for the Poisson regression model

Variable	Estimate	Std. Error	Z value	p-value
Family Business	0.2115	0.0795	2.660	0.0078 **
Longevity	0.0011	0.0004	2.387	0.0170 *
Size	0.0282	0.0105	2.677	0.0074 **
Social responsibility	0.2947	0.0770	3.827	0.0001 ***

*** < 0.001 ** < 0.01 * < 0.05

Table 1 shows the results of the analysis. All the estimates have a p-value lower than 0.05, indicating that the considered antecedents have a significant impact on the use of heritage marketing tools. To evaluate their influence, we highlight that in the Poisson model the relationships are not linear, but multiplicative. This means that, for example, focusing on first explicative variable, if the shareholder structure is a family business, the expected number of heritage marketing tools is multiplied for 1.236 ($\exp(0.2115)$) respect to expected value for the not family business. Thus, the first hypothesis is supported. The same considerations can be done for the second hypothesis. When companies have a higher longevity, the number of tools increases (for each year a multiplicative effect of 1.0011 ($\exp(0.0011)$)). The multiplicative impact of the size (turnover) is about 1.0286. This supports H3. Also, with reference to the last estimate there is a positive multiplicative effect ($\exp(0.2947) = 1.3427$). This means that the presence of a social report enhances the use of heritage marketing tools, and this confirms H4.

Research limitations. The present work is not without its limitations. The analysis was conducted on a relatively large sample (181 observations), but one that takes into consideration only large companies. However, this is only the first step in a research path that aims to extend the analysis to small and medium-sized companies registered in the National Register of Historical Italian Historical Firms edited by Unioncamere.

Secondly, our analysis was underpinned by a diverse array of secondary sources, encompassing corporate websites, archives of various organizations, press reviews, and other pertinent outlets. Consequently, it's imperative to acknowledge the potential for missing data throughout this investigative endeavor.

Finally, it is important to note that the analysis conducted focused only on companies registered in the Register of Historical Firms, whose registration process takes place voluntarily, although subject to specific requirements. This implies that the study may not have considered other large Italian long-lived companies.

Managerial implications. Our results highlight how long-lived businesses, traditionally recognized as custodians of a unique historical and cultural heritage capable of guaranteeing a competitive advantage through a distinctive positioning, very often miss the innumerable opportunities linked to the enhancement of their deepest roots. In fact, companies approach the individual heritage marketing tools in an experimental way, without a transversal vision that allows them to exploit the different dimensions of the company's historical identity. In fact, as our data clearly pointed out, none of the companies investigated uses all the tools considered and there are very few (27%) that use at least one tool in the different categories mentioned above.

In a nutshell, therefore, our research pointed out that long-lived companies, despite their growing attention to the narration of corporate heritage, have not yet fully developed an integrated vision, placing heritage at the center of a communication strategy conveyed through multiple tools and channels. It is worth noting that the family nature of the business emerged as one of the variables explaining the increased propensity to invest in heritage marketing tools. In the specific case of family businesses, narrating both company and family history as strictly related to corporate heritage can be a means of managing the duality of continuity and change (Blombäck and Brunninge, 2013), highlighting how the family business has renewed over time without losing a connection with the past generations. It is also very interesting the relationship between the social responsibility of the company and the use of heritage marketing tools. Through the narration of company's heritage, corporate culture becomes collective culture, thus contributing to the development and transmission of local heritage, with clear benefits for the place and the community. The results show also that larger and more structured companies are the most oriented towards the exploitation of the company's heritage in terms of market relations, using more tools at the same time. This result is in line with the marketing literature that shows that smaller companies, in general, tend to implement marketing activities in a more informal and unstructured manner (Blankson et al., 2006; Riviezzo et al., 2013). Finally, although the literature clearly shows that the concept of "history" and the concept of "heritage" are separate (Arnold et al., 1998), with the consequence that a heritage marketing strategy can be pursued regardless of the age of the company, the results of this study lead to the assertion that the tendency to invest in heritage activities is greater in companies that are older. It is therefore conceivable that the focus on heritage marketing increases with the longevity of the company, especially with the attainment of certain milestones that often coincide with the first convinced investments in this direction (e.g. the publication of a monograph or the opening of a museum to celebrate the first 100 years).

Originality of the paper. This study is the first example of large-scale investigation aimed at observing the use of different tools of heritage marketing and the first attempt to identify possible antecedents at organizational level that may affect the use of such strategy. However, it is just the first step of a research process, which is aimed to extend the analysis

to other centenarian companies enrolled in the National Register of Italian Historical Firms edited by Unioncamere, also including medium and small-sized ones, and to investigate if the identified antecedents may affect differently the diverse categories of heritage marketing tools.

References

- ARNOLD J., DAVIES K., DITCHFIELD S. (a cura di) (1998), *History and heritage: consuming the past in contemporary culture*, Shaftesbury, Donhead.
- BALMER J.M.T. (2011), "Corporate heritage identities, corporate heritage brands and the multiple heritage identities of the British Monarchy", *European Journal of Marketing*, vol. 45, n. 9/10, pp. 1380-1398.
- BALMER J.M.T. (2013), "Corporate heritage, corporate heritage marketing, and total corporate heritage communications: What are they? What of them?", *Corporate Communications: An International Journal*, vol. 18, n. 3, pp. 290-326.
- BALMER J.M.T., BURGHUSEN M. (2019), "Marketing, the past and corporate heritage", *Marketing Theory*, vol. 19, n. 2, pp. 217-227.
- BALMER J.M., GREYSER S.A., URDE M. (2006), "The Crown as a corporate brand: Insights from monarchies", *Journal of Brand Management*, vol. 14, n. 1, pp. 137-161.
- BLANKSON C., MOTWANI J.G., LEVENBURG N.M. (2006), "Understanding the patterns of market orientation among small businesses", *Marketing Intelligence & Planning*, vol. 24, n. 6, pp. 572-590.
- BLOMBÄCK A., BRUNNINGE O. (2013), "The dual opening to brand heritage in family businesses", *Corporate Communications: An International Journal*, vol. 18, n. 3, pp. 327 - 346.
- BONTI M. (2014), *The corporate museums and their social function: some evidence from Italy*, European Scientific Journal ESJ, vol. 10, n. 10.
- BURGHUSEN M., BALMER J.M. (2014), "Corporate heritage identity management and the multi-modal implementation of a corporate heritage identity", *Journal of Business Research*, vol. 67, n. 11, pp. 2311-2323.
- GAROFANO A., RIVIEZZO A., NAPOLITANO M.R. (2020), "Una storia, tanti modi di raccontarla. Una nuova proposta di definizione dell'heritage marketing mix/ One story, so many ways to narrate it. A new proposal for the definition of the heritage marketing mix", *IL CAPITALE CULTURALE. Studies on the Value of Cultural Heritage*, vol. 10, pp. 125-146.
- NAPOLITANO M.R., MARINO V., OJALA J. (2015), "In search of an integrated framework of business longevity", *Business History. Special Issue on business longevity*, vol. 57, n. 7, pp. 955-969.
- NAPOLITANO M.R., RIVIEZZO A., GAROFANO A. (2018), *"Heritage marketing. Come aprire lo scrigno e trovare un tesoro"*, Napoli: Editoriale Scientifica.
- NISSLEY N., CASEY A. (2002), "The politics of the exhibition: Viewing corporate museums through the paradigmatic lens of organizational memory", *British Journal of Management*, vol. 13, S36.
- RIVIEZZO A., NAPOLITANO M.R., GAROFANO A. (2013), "10. Entrepreneurial orientation and market orientation in SMEs: an explorative study", *Conceptual Richness and Methodological Diversity in Entrepreneurship Research*, 197.
- RIVIEZZO A., GAROFANO A., NAPOLITANO M.R., MARINO V. (2015), "Moving forward or running to stand still? The relationship between family firms' strategic posture and longevity", *Journal of Family Business Strategy*, vol. 6, n. 3, pp. 190-205.
- RIVIEZZO A., GAROFANO A., NAPOLITANO M.R. (2016), "Il tempo è lo specchio dell'eternità". Strategie e strumenti di heritage marketing nelle imprese longeve italiane (Time is the mirror of eternity). Heritage marketing strategies and tools In Italian long-lived firms", *IL CAPITALE CULTURALE. Studies on the Value of Cultural Heritage*, vol. 13, pp. 497-523.
- RIVIEZZO A., GAROFANO A., NAPOLITANO M.R., (2021), *Corporate Heritage Marketing: Using the Past as a Strategic Asset*, London: Routledge.
- RIVIEZZO A., MASON M.C., GAROFANO A., NAPOLITANO M.R. (2022), "Uncovering the worth of the past: the relationship between corporate museums' strategic orientation and dual performance", *Management Decision*, vol. 60, n. 7, pp. 1852-1874.
- RUDD M.A., DAVIS J.A. (1998), "Industrial Heritage Tourism at the Bingham Canyon Copper Mine", *Journal of Travel Research*, vol. 36, n. 3, pp. 85-89.

Examining Healthy Food Consumption Among People Over 60 years

VINCENZO GISSI¹ ELISABETTA SAVELLI²

Abstract

This research analyzes the perceptions, determinants and behavioral intentions regarding the consumption of healthy food among individuals aged over 60 years. Data collected through an online questionnaire distributed among the Italian population revealed a strong interest in healthy eating motivated by health benefits and personal well-being. However, some concerns about healthy food still represent barriers, which limit their current consumption. The study provides valuable insights for the development of interventions and communication strategies, acting at different levels (i.e., health-care professionals and food companies) aimed at promoting healthy ageing of population and the overall social well-being.

Keywords: healthy food; elderly people; social well-being; food consumption.

Framing of the research. Over the time, food consumption has undergone significant changes under the influence of several factors such as cultural shifts, economic developments, and technological advancements. One of the biggest changes has been the gradual recognition of health as a fundamental motivator of food choices (Cena & Calder, 2020). Indeed, as individuals have become more informed about the connection between dietary habits and overall well-being, there has been a significant increase in prioritizing health in food consumption (Saba & Vassallo, 2012). The Global Health and Wellness Survey carried out by AC Nielsen (2021) on consumer sentiment across 17 diverse global markets revealed that 39% of global population is overweight, 2.8M die each year as a result of being overweight and 21% of global consumers have shifted health priorities because they have gained unwanted weight.

The reasons why health has become an essential priority range from the desire to live longer and to look and feel better, to the sway of social media and the burden of rising costs of healthcare (AC Nielsen, 2021). Moreover, the continuous accumulation of food scandals over the past decades, like the BSE occurring in the mid-to-late 1990s in the UK, the German dioxin scandal in 2011, and the presence of salmonella in certain infant milk-products in 2018, have further contributed to the increasing interest in health-related issues. That's why, Governments and regulatory bodies "have gradually improved their common responsibility and interest in preventing public health problems related to the food chain" (Thomopoulos et al., 2022), by promoting initiatives and practical recommendations in which healthy diet is essential for good health and nutrition (Lambrinoudaki et al., 2013; Patience, 2016). As an example, North America updated FDA guidelines to set voluntary sodium limits for 160+ categories of processed foods with the goal of helping consumers cut their salt intake by 12%, while France and Germany are introducing new labelling initiatives, to provide more clarity on the health effects of their contents, within the overall European "ecolabel" strategy timed for 2024.

People often classify food as either healthy or unhealthy based on factors like perceived fat and sugar content, and the presence of artificial ingredients, which results in a growing avoidance of products such as red meat, sweets and animal fats, and an increasing demand for fruits, vegetables, eggs and fish, or less processed foods like whole grains (Skerrett & Willett, 2010). Frequently, also organic and functional foods have been perceived to be healthier and more natural than conventional ones (Alkhatib et al., 2017). This outlines two main suggestions. First, the concept of healthy food cannot be univocally defined, as it varies according to the individual perception and the focus of attention. Past literature clearly reveals this diversity, as some scholars have related healthy food to a balanced diet full of proteins, carbohydrates, and fats, moderation and regularity in food consumption and meals control, increasing fruits and vegetables eating and reduction of high-fat food intakes (Paquette, 2005; Krahn et al., 2011; Bisogni et al., 2012), while others associated healthy food to the avoidance of specific cooking habits, such as fried meals (Povey et al., 1998). The second suggestion emerging from the current research on healthy food consumption deals with the relationship between healthy and sustainability. As noted by Machin and Chen (2023, p. 9), foods that are "positioned as having some kind of health benefit often also combine ethical consumption ideas, such as 'natural,' 'organic,' 'sustainable,' 'local,' or 'recyclable'". That is, consumers tend to associate sustainability with higher perceived health (Verain, et al., 2016) since they "often encounter health and sustainability together in products" (Cho & Baskin, 2018) as it emerged in several studies on vegetarian meals (Kareklas et al., 2014), organic (Petrescu & Petrescu-Mag, 2015) and regional food, i.e.

¹ University of Pesaro e Urbino
e-mail: v.gissi@campus.uniurb.it

² University of Pesaro e Urbino
e-mail: elisabetta.savelli@uniurb.it

food growing in the surrounding region that are believed to be healthier, fresher and more sustainable than conventional one (Savelli et al., 2022). Therefore, the consumption of healthy food is a central topic in modern society, as it improves both sustainable development and long-term well-being of the population.

Consuming healthy food is particularly important in the early child period of life to support optimal growth and development (Welker et al., 2018). However, it becomes increasingly important also in the later stages of human life cycle, when population ages, since elderly people are particularly vulnerable to health issues and dietary-related diseases (Joyce et al., 2005). Previous research has highlighted the need for continuous education on health risk factors and the importance of seniors taking responsibility for their own health (Cho & Kim, 2022; Ishida et al., 2020). Therefore, dietary education, meal service, and various dietary interventions improving fruit and vegetable intake, dietary variety, and physical condition in older adults, have been recognized to be critical to promote healthy eating and the overall quality of life (Zhou et al., 2018).

Despite this evidence, there is a lack of studies that delve into emotional, behavioral, and motivational factors orienting dieting habits of elderly people towards food selection (Carfora et al., 2022). Moreover, they often focused on specific product categories, such as fruit and vegetables (e.g. Appleton et al. 2017), protein (Linschooten et al. 2021), and beans (Doma et al. 2019), thus reducing the results' generalizability, and usually considered the elderly population as a whole, without analyzing specific sub-groups with different food choices and habits (Caso and Vecchio 2022).

In addition, it must be said that past research often provided contradictory findings, especially when comparing elderly food behaviours with younger ones. For instance, some scholars have shown a bigger consumption of sugary and fatty foods in younger people than in elderly ones (Bleich et al., 2018; Nour et al., 2017), while others demonstrated that younger generations are highly interested in health benefits and natural contents of foods, despite their attention to the convenience of preparation and availability of food products, in terms of price and distribution (Mitic & Vehapi, 2021). What seems to be significant in explaining the differences between young and elderly people is the underlying motivations driving healthy food consumption, as adults and elderly are mainly driven by a deep sense of consciousness about health-related consequences of food choices, while proper nutrition and health education is naturally engaged in young people's mind, since they grew up in a social environment driven by a strong sense of responsibility (Savelli et al., 2023).

All this suggests the opportunity to improve the current state of knowledge on healthy food consumption among the elderly generation, by investigating their attitudes, consumption patterns, and perceived benefits and barriers associated to healthy food choices, in order to provide valuable insights for developing interventions and strategies enhancing their overall health and well-being.

Purpose of the paper. This study aims to fill the existing gap by examining the perceptions, determinants, and behavioral intentions regarding healthy food choices of elderly people, ultimately contributing to the development of effective interventions and policies. More specifically, the study addresses the following research questions:

RQ1: How do elderly people perceive healthy food? Do they knowledge the properties of healthy food and what benefits and barriers associate to it? Are they satisfied with their past consumption experience and intend to consume healthy food in the future?

RQ2: Are there any differences among consumers aged over 60 years towards healthy food based on their individual characteristics (i.e. gender, age, body weight condition)?

Methodology. Data for this study have been collected through an online self-administered questionnaire, distributed over a six-month period (September 2023-March 2024).

The survey was conducted online using the computer-assisted web interview (CAWI) method given its efficiency, cost-effectiveness, respondents' anonymity, broad geographic reach, and comprehensive data collection (Kraut et al., 2004; Sowa et al., 2015; Thompson et al., 2003). Specifically, the online questionnaire was shared on social media platforms such as Facebook, Instagram, LinkedIn, WhatsApp, and Telegram.

The sampling procedure was based on a convenient non-random sampling method, considering the Italian population aged over 60 years. Data from ISTAT (2023) have been considered for calculating the Italian population by age, whilst the appropriateness of the sample size was checked by applying the Brasini et al.'s (2002) formula:

$$n = [Z^2 a/2 \times N] / [4(N - 1)\theta^2 + Z^2 a/2] = [1.96^2 \times 17.706.146] / [4(17.706.146 - 1) \times 0.05^2 + 1.96^2] = 384$$

where n =sample size; $Z^2 a/2$ =confidence level=1.96 (calculated using the tables of the standard normal distribution); N =Italian population aged 60-90 years at 01/01/2024=17.706.146 (<https://demo.istat.it/app/?i=POS&l=it>); θ =margin of error allowed (set at 5%).

The data collection process resulted in 334 valid responses at 01/03/2024. The number is still under the threshold suggested by the above formula. However, it is very close to it and therefore acceptable, also considering the ongoing process of the research.

As for the questionnaire, it was divided in four parts. The initial part focused on understanding individuals' knowledge of healthy food and the main sources informing them. The second part focused on motivators, benefits and barriers related to healthy food consumption. The third part examined respondents' satisfaction about healthy food as well as their future behavioral intentions. Lastly, demographic data including age, gender, level of education, and family status were collected. Information on body weight and height have been included in this section to assess the Body Mass Index (BMI), as it is significantly correlated with dietary patterns (Bion et al., 2008).

All the questionnaire items have been carefully chosen and adapted from previous research to assure their content validity. In particular, items for knowledge, satisfaction and behavioural intention have been taken from Lee et al.'s (2018) scales that had already been validated in previous research. Motivations and information sources influencing

healthy food consumption have been defined in line with the '2017 Food and health Survey' provided by the International Food Information Council (IFIC) Foundation, which has been taken in several other studies. Finally, both benefits and barriers associated with healthy food consumption were assessed by using the multi-items-lists of Pawlack and Colby (2009). The responses were measured on a 7-point Likert scale, with 1 representing exceptional disagreement (or unlikely) and 7 representing exceptional agreement (or likely).

Before starting the data collection, the questionnaire was pre-tested by involving a group of academic researchers having a deep knowledge and expertise on both the research subject of the survey and the methodology (i.e. how to collect the most accurate data for our research questions). This allowed us to check the content and form of the questionnaire, improving its comprehension, flow and logic, and length acceptability.

The collected data have been analysed with STATA (StataCorp LLC, 4905 Lakeway Drive College Station, Texas 77845 USA), version 17.0. It is a general-purpose statistical software package for data manipulation, visualization, statistics, and automated reporting, widely used in many research fields, including biomedicine, economics, epidemiology, and sociology. In this step of the research, only descriptive statistics (based on mean values, standard deviations and frequencies) were used to gain a preliminary and exploratory overview of the research topic.

After describing the general characteristics of the sample, we investigated the main results concerning healthy food knowledge, satisfaction, and behavioural intention. Moreover, the main motivations, benefits and barriers have been described to identify potential healthy food patterns characterizing this generation (RQ1). Next, to address the second research question of this study (RQ2), we divided the sample into sub-groups based on gender, age and body weight (i.e. BMI), in order to detect the existence of any differences between them.

Results. Starting from the demographic data, 166 men and 168 women participated in this study, ranging from 60 to 91 years old, with an average age of 68 years. About one third of the participants (96) come from northern Italy, 196 live in the central regions and 42 in the southern part of the country. Most respondents have a high school (163) or a middle school diploma (82), while only 55 participants have a bachelor's or master's degree; the remaining subjects attended just the elementary school (34). Regarding the body mass index (BMI), calculated as $\text{mass(kg)}/\text{height(m)}^2$, the data ranged from a minimum of 17 to a maximum of 41, with an average value of 24.5 (s.d.: 3.3), suggesting an overall tendency of the elderly population to be normo-weight³.

As concerning the individual knowledge of healthy food, more than 60% of the sample responded with a rating of 5 or higher when asked how much they think to know about it. This is a positive result, which foreshadows a favorable attitude by the elderly towards healthy food consumption. Indeed, prior research has empirically demonstrated that knowledge about good nutrition can directly affect personal eating habits, encouraging the adoption of a reduced healthier diet (Trepka et al., 2006). The main sources used to acquire information by the elderly appear quite heterogeneous. They seem to be particularly receptive to dietary advice from health professionals, whereas other sources of information do not always succeed in convincing them. More in detail, 77.5% of the sample responded with a value of 5 or higher to the question on how much they trust the advice of dietitians, while 31.7% declared to trust the advice of bloggers, 29.6% the advice of friends or family, and 38.3% declared to have confidence in newspaper articles. This confirms prior research highlighting the highest confidence of elderly generations in the opinion and recommendations from specialists for matters relating to food (Borges-Tiago et al., 2016).

The second section of the questionnaire investigated the main motivations, benefits and barriers associated to healthy food consumption. Based on the answers, the attention towards these foods mainly comes from the individuals' concern about their health condition (mean: 6.1; sd: 1.1) and potential diseases, followed by health care professionals (mean: 5.3; sd: 1.4). Hence, the motivation for healthy food consumption relies more on the occurrence of a contingent condition rather than a natural preference and attitude towards it. This confirms prior research findings suggesting that a poor health status is a major factor behind elderly's food choice, as health problems increase people's concern for long-term wellbeing (de Moraes et al., 2010). Responding to the perceived benefits, the main aspects coming out from the survey were the sensation of feeling good (mean: 5.9; sd: 1.1), taking care of one's body (mean: 6.0; sd: 1.1), and weight loss (mean: 5.4; sd: 1.4). Specifically, 68.8% of the respondents rated the first factor with a value of 6 or 7; 70.6% rated 6 or 7 the second factor, and 51.8% rated 6 or 7 the third factor. As for the barriers, the price does not seem to be a relevant factor: only 56% of the respondents assigned a value greater than 4 to the question "Healthy foods are too expensive". Similarly, poor appreciation of healthy food by other family members who live with the elderly do not seem to be significant barriers. On the contrary, many participants declare not to like the taste of healthy food: 75% responded with a value above 4 to the question "Healthy foods do not taste good", suggesting that, when barriers to healthy food consumption occur, they are mainly related to people's own hesitation. This result corroborates prior studies (Bloom et al., 2017; Tani et al., 2015) revealing the importance of taste and enjoyment in elderly food choices, which often results in unhealthy food choices with negative health consequences.

Finally, the questionnaire attempted to investigate the degree of satisfaction and behavioral intention of elderly people in consuming healthy food. The results show that the majority of respondents are satisfied with the consumption of healthy food they usually eat (mean: 5.08; sd: 1.58). Moreover, respondents have shown a positive behavioral intention towards healthy food, since they generally intend to keep eating such foods (mean: 5.41; sd: 1.55), to recommend them to personal

³ The World Health Organization classifies the BMI status for adults in agreement with the International Obesity Task Force (IOTF) criteria: BMI<18.49: underweight; 18.5<BMI>24.99: normal range; 25<BMI>29.99: pre-obese; BMI>30: obesity. https://ec.europa.eu/health/ph_determinants/life_style/nutrition/documents/iotf_en.pdf

friends (mean: 5.13; sd: 1.63), and to increase the future intake of healthy food in their dietary habits (mean: 5.43; sd: 1.57). This confirms that the more elderly people are acknowledged about healthy food properties, perceive their benefits and are well satisfied, the more they are prone to consume healthy food and to adopt a healthy eating behaviour (Caso & Vecchio, 2022).

To provide more knowledge about the dietary patterns of elderly people, this study explored whether individual characteristics of the respondents have significant impact on the variables previously analyzed, i.e. knowledge of healthy food, motives, benefits and barriers, satisfaction, and behavioral intention.

The comparison has been made using the percentage of very high responses (value of 6 or 7) compared to the total responses.

Firstly, the analysis compared men and women. Regarding the individual knowledge of healthy food, only 33% of men responded with a very high value, compared to 42% of women. The sources they use are quite different: women tend to prefer the advice of health care professionals (53%; men: 49%) and dieticians (63%; men: 54%), while men believe more in the advice of bloggers (17%; women: 14%) and newspaper articles (15%; women: 14%). There are no major differences regarding the main motivators and barriers for adopting healthy food, while regarding the benefits it provides, women compared to men responded that healthy food helps them feel better (77%; men: 61%) and taking care of their own body (74%; men: 67%). Furthermore, satisfaction with the consumption of this food is higher in women than men (55%; men: 41%), as also results in their behavioral intentions: women generally intend to keep eating healthy food more than men (60%; men: 50%), to recommend them more (59%; men: 40%), and to increase the future intake of healthy food more (64%; men: 47%). All this confirms prior research on the elderly generation revealing that women tend to be much more involved than men in healthy food consumption as they have better nutritional and health knowledge than men (Ueland, 2009).

Secondly, we divided the ages into quartiles and compared the first quartile, made up of participants between 60 and 62 years old (under62), and the fourth quartile, made up of participants between 71 and 91 years old (over71). There is not a big difference in the answers on individual knowledge of healthy food (41% under62 - 38% over71). The greatest difference between the sources used for information concerns the use of bloggers as informant sources (28% over 62 - 5% over 71). No relevant difference between reasons, benefits and barriers towards the consumption of healthy food have emerged. Satisfaction is higher for subjects over71 (56%; under62: 42%) as well as behavioral intention is: they generally intend to keep eating healthy food more than under62 (61% - 49%), to recommend them more (56% - 42%), and to increase the future intake of healthy food more (62% - 52%). Probably, the individual intention increases with age, since elderly people become more aware and worried about their personal health and long-term wellbeing.

Finally, we divided subjects into quartiles based on BMI similarly to what was done for age: the first quartile is named as under22.5 and the last quartile is named as over26.3. Regarding the individual knowledge of healthy food, the high answers are equivalent, however the sources used by the respondents are different: under22.5 trust more dieticians (62% - 50%) and bloggers (20% - 5%) while the group over26.3 trust friends more (21% - 13%). Regarding the reasons that push these subjects to consume healthy food, subjects over26.3 are more worried about their health and potential diseases than subjects under22.5 (76% - 68%), and they listen more to health care professionals than the others (58% - 45%). Besides, this group (over26.3) is more sensitive to benefits such as feeling better (70% - 65%) and taking care of their body (74% - 62%). However, the over26.3 group also perceives healthy food as too expensive (21% - 18%) and not tasty (20% - 18%). In conclusion, satisfaction and general behavioural intention are similar in these two groups. This leaves open the debate on the relationship between BMI and healthy food consumption, suggesting the opportunity to further investigate the “directionality of this relationship, i.e. whether these shopping preferences habits cause overweight and obesity or whether overweight causes people to shop in this manner” (Worsley et al. 2011, p. 877).

Research limitations. Based on the findings of this study, it is evident that elderly people exhibit a strong interest in consuming healthy foods, driven by various factors including their perception of health and personal well-being benefits. However, this research is not sufficient to explain all the reasons that push this age group to eat healthy food. Firstly, the main limitation arises from the adopted sampling procedure. Employing a convenient non-random sampling technique and disseminating the survey through a weblink offered advantages such as quickness, low cost, and anonymity of respondents. However, this approach does not allow for complete generalizability of the study results. Additionally, the analysis was conducted only among Italian people, therefore, specific socio-cultural factors may have influenced the obtained results. Concerning the findings, further analyses are needed, based on multivariate techniques (such as regression and clustering) and validity tests. Finally, another limitation arises from the quantitative nature of the research. While quantitative methods enable the reaching of a large sample of respondents and allow for the generalizability of results, they often lack depth. Therefore, for future research, it would be beneficial to explore qualitative approaches that incorporate both generalizable and in-depth results.

Managerial implications. Overall, the findings of this study provide valuable insights for managers seeking to promote healthy eating among individuals over 60, emphasizing the importance of tailored communication, leveraging trusted sources, addressing taste perceptions, and highlighting the benefits of healthy eating to encourage long-term adherence.

Specifically, despite the good level of self-perceived knowledge, communication strategies and education programs could be improved to enhance the overall acceptance of healthy food by elderly people and their positive attitude towards its consumption. In particular, this study provides suggestions in terms of both communication channels and information content. As for the channels, elderly people tend to trust in health care professionals, such as dieticians. This probably relates to the fact that they usually associate healthy food consumption with health and disease prevention. Therefore,

health professionals should improve both informal communication, by dedicating more time to their patients in face-to-face meetings, and public campaigns aimed at reinforcing the importance of a healthy diet, its benefits for long-term well-being and the need to include healthy food in daily habits. In this respect, for example, organizing local “special days” dedicated to health, where participants can take advantage of some medical services (e.g. free blood pressure measurement), could play as an opportunity to offer information sessions enriching the elderly interest in healthy eating and their desire to change unhealthy habits. This could be particularly effective with elderly women, that seem to be more sensitive to professional information, as well as with those elderly that are over-weight, as it emerged from our data. Traditional channels, like newspapers, and digital ones, like bloggers, could also be useful to inform people over 60 years about healthy food benefits, especially in the case of men and the younger age groups of the elderly. Anyway, this study highlights the importance of understanding the credibility of information sources for promoting healthy eating among adults and older individuals.

By considering the information content, two results are particularly worthy of evidence. Firstly, the concern about taste is an important point to analyze as it emerged among the main barriers to healthy food consumption, especially in the case of over-weight people. Efforts should be made to address taste perceptions and make healthy food more palatable to this population, potentially through innovative cooking techniques. In this respect, also food companies could contribute by offering flavor enhancements and, especially, local ingredients addition. Indeed, as elderly people are particularly attached to their history and eating traditions, the use of some local ingredients, such as ricotta cheese, honey, and San Marzano tomatoes, could taste better on their tongue, thus remaining for a longer time on their mind. Secondly, the comprehension of the main motivators and benefits underlying healthy food consumption provides further suggestions on how to orient the communication efforts. Overall, elderly people recognize health-related advantages in healthy food consumption, such as prevention diseases and weight loss. Therefore, communication campaigns should focus mainly on these benefits, by communicating, for example, that healthy food could act as a substitute of the medical treatments, providing easier solutions to common diseases such as obesity, diabetes, and high cholesterol. However, since women appeared to be more interested than men in their physical appearance, communication should provide targeted messages to catch their attention based on different information and tone contexts which rely mainly on these potential advantages related to healthy eating. Moreover, it could be useful to reinforce information on healthy food within the retail context, since women tend to attend food stores more frequently than men (Worsley et al., 2011).

Originality of the paper. In conclusion, this study enriches prior knowledge on elderly people and healthy food consumption in different ways. First, it provides valuable insights into the comprehension of individual attitudes and behavioral intentions of elderly people towards healthy food consumption, which has been less investigated by previous literature. Notably, it moves the attention from situational (e.g. physical and cognitive status, living condition, social support, etc.) and socio-cultural variables (e.g., income, education, geographical area, etc.) to cognitive (i.e. ‘perceived benefits and barriers’, ‘knowledge about healthy food’) and emotional factors (i.e. ‘satisfaction’) explaining the elderly intention to consume healthy food. These variables have been scarcely analyzed, while being extremely important to understand the elderly consumers’ information processing, behaviours and purchasing intentions (Bagozzi et al. 1999; Bully et al. 2015). Second, the present study attempts to analyse the differences among sub-groups of elderly people. Extant literature demonstrated that this generation is quite heterogeneous, with significant differences in healthy food patterns according to their health status and socio-demographic conditions (Guido et al. 2022). Therefore, it is interesting to investigate such diversity, to provide more specific suggestions to healthcare professionals and policymakers aimed at developing targeted interventions promoting healthier eating habits and the overall improvement of health outcomes of elderly population.

References

- AC NIELSEN (2021), “An inside look into the 2021 Global Consumer Health and Wellness Revolution”, available at: https://nielseniq.com/wp-content/uploads/sites/4/2022/05/NIQ_Global_Health_and_Wellness_Report_2021_1-1.pdf (accessed 13 March 2024)
- ALKHATIB A., TSANG C., TISS A., BAHORUN T., AREFANIAN H., BARAKE R., KHADIR A., TUOMILEHTO J. (2017), “Functional foods and lifestyle approaches for diabetes prevention and management”, *Nutrients*, vol. 9, n. 12, pp. 1310.
- BISOGLI C., JASTRAN M., SELIGSON M., THOMPSON A. (2012), “How People Interpret Healthy Eating: Contributions of Qualitative Research”, *Journal of Nutrition Education and Behavior*, vol. 44, n. 4, pp. 282-301
- BLEICH S.N., VERCAMMEN K.A., KOMA J.W., LI Z. (2018), “Trends in beverage consumption among children and adults, 2003–2014”, *Obesity*, vol. 26, n. 2, pp. 432–441.
- BLOOM I., LAWRENCE W., BARKER M., BAIRD J., DENNISON E., SAYER A.A., ROBINSON S. (2017), “What influences diet quality in older people? A qualitative study among community-dwelling older adults from the Hertfordshire Cohort Study, UK”, *Public Health Nutrition*, vol. 20, n.15, pp. 2685–2693.
- BORGES-TIAGO M.T.P.M., DE ALMEIDA COUTO J.P., TIAGO F.G.B., FARIA S.M.C.D. (2016), “Baby boomers turning grey: European profiles”, *Tourism Management*, vol. 54, pp. 13-22.
- BRASINI S., FREO M., TASSINARI F., TASSINARI G. (2002), *Statistica aziendale e analisi di mercato*, Il Mulino, Bologna.
- CARFORA V., MORANDI M., JELIĆ A., CATELLANI P. (2022), “The psychosocial antecedents of the adherence to the Mediterranean diet”, *Public Health Nutrition*, vol. 25, n. 10, pp. 2742-2757.

- CENA H., CALDER P.C. (2020), "Defining a healthy diet: evidence for the role of contemporary dietary patterns in health and disease", *Nutrients*, vol. 12, n. 2, pp. 334.
- CHO S., KIM S. (2022), "Does a healthy lifestyle matter? A daily diary study of unhealthy eating at home and behavioral outcomes at work", *Journal of Applied Psychology*, vol. 107, n. 1, pp. 23–39.
- CHO Y.N., BASKIN E. (2018), "It's a match when green meets healthy in sustainability labeling", *Journal of Business Research*, vol. 86, pp. 119–129.
- DE MORAIS C., AFONSO C., DE ALMEIDA M.D.V. (2010), "Ageing and food consumption in Portugal: new or old paradigms?", *British Food Journal*, vol. 112, n. 5, pp. 511–521.
- IFIC (2017), "A health perspective: understanding American food values". Retrieved from: <https://foodinsight.org/2017-food-and-health-survey-a-healthy-perspective-understanding-american-food-values/> (last access, 6 May 2024).
- ISHIDA Y., YOSHIDA D., HONDA T., HIRAKAWA Y., SHIBATA M., SAKATA S., FURUTA Y., OISHI E., HATA J., KITAZONO T., NINOMIYA T. (2020), "Influence of the accumulation of unhealthy eating habits on obesity in a general Japanese population: The Hisayama study", *Nutrients*, vol. 12, n. 10, pp. 3160.
- ISTAT (2023), Popolazione residente per cittadinanza o Paese di nascita, available online at: <https://demo.istat.it/app/?i=RCS&l=it> (accessed 12 January 2024).
- JOYCE G.F., KEELER E.B., SHANG B., GOLDMAN D.P. (2005), "The Lifetime Burden Of Chronic Disease Among The Elderly: Reducing chronic illness in future elderly cohorts will have only modest effects on Medicare's financial stability", *Health Affairs*, vol. 24(Suppl2), W5R18–29.
- KAREKLAS I., CARLSON J.R., MUEHLING D.D. (2014), "I eat organic for my benefit and yours: Egoistic and altruistic considerations for purchasing organic food and their implications for advertising strategists", *Journal of Advertising*, vol. 43, n. 1, pp. 18–32.
- KRAHN V., LENGYEL C., HAWRANIK P. (2011), "Healthy Eating Perceptions of Older Adults Living in Canadian Rural and Northern Communities", *Journal of Nutrition in Gerontology and Geriatrics*, vol. 30, n.3, pp. 261–273.
- KRAUT R., OLSON J., BANAJI M., BRUCKMAN A., COHEN J., COUPER M. (2004), "Psychological research online: report of Board of Scientific Affairs' Advisory Group on the Conduct of Research on the Internet", *American psychologist*, vol. 59, n. 2, pp. 105.
- LAMBRINOUDAKI I., CEASU I., DEPYPERE H., EREL T., REES M., SCHENCK-GUSTAFSSON K., SIMONCINI T., TREMOLLIÈRES F., VAN DER SHOUW Y. T., PÉREZ-LÓPEZ F. R. (2013), "EMAS position statement: diet and health in midlife and beyond", *Maturitas*, vol. 74, n. 1, pp. 99–104.
- LEE S.M., JIN N., KIM H.S. (2018), "The effect of healthy food knowledge on perceived healthy foods' value, degree of satisfaction, and behavioral intention: The moderating effect of gender", *Journal of Quality Assurance in Hospitality & Tourism*, vol. 19, pp. 151–171.
- MACHIN D., CHEN A. (2023), "Designing food packaging to present healthy and ethical diets to the New Chinese middle classes", *Food, Culture & Society*, vol. 26, n. 1, pp. 79–101.
- MITIC S., VEHAPI S. (2021), "Food choice motives of generation Z in Serbia", *Економика ВољоУправде*, vol. 68, n. 1, pp. 127–140.
- NOUR M., SUI Z., GRECHA., RANGAN A. (2017), "The fruit and vegetable intake of young Australian adults: A population perspective", *Public Health Nutrition*, vol. 20, n. 14, pp. 2499–2512.
- PAQUETTE M. C. (2005), "Perceptions of healthy eating: State of knowledge and research gaps", *Canadian Journal of Public Health*, vol. 96, pp. S15–S19.
- PATIENCE S. (2016), "Advising patients on nutrition and healthy eating", *British Journal of Nursing*, vol. 25, n. 21, pp. 1182–1186.
- PAWLAK R., COLBY S. (2009), "Benefits, barriers, self-efficacy and knowledge regarding healthy foods; perception of African Americans living in eastern North Carolina", *Nutrition Research and Practice*, vol. 3, n. 1, pp. 56–63.
- PETRESCU D.C., PETRESCU-MAG R.M. (2015), "Organic food perception: Fad, or healthy and environmentally friendly? A case on Romanian consumers", *Sustainability*, vol. 7, n. 9, pp. 12017–12031.
- POVEY R., CONNER M., SPARKS P., JAMES R., SHEPHERD R. (1998), "Interpretations of healthy and unhealthy eating and implications for dietary change", *Health Education Research*, vol. 13, pp. 171–183.
- SABA A., VASSALLO M. (2012), "The influence of health involvement and satisfaction on healthy food choices among people over 60 years", *International journal of consumer studies*, vol. 36, n. 1, pp. 44–53.
- SAVELLI E., GREGORY-SMITH D., MURMURA F., PENCARELLI T. (2022), "How to communicate typical–local foods to improve food tourism attractiveness", *Psychology & Marketing*, vol. 39, n. 7, pp. 1350–1369.
- SAVELLI E., MURMURA F., BRAVI L. (2023), "Healthy and quality food attitudes and lifestyle: a generational cohort comparison", *The TQM Journal*, ahead of print: <https://doi.org/10.1108/TQM-05-2023-0156>.
- SKERRETT P.J., WILLETT W.C. (2010), "Essentials of healthy eating: a guide", *Journal of midwifery & women's health*, vol. 55, n. 6, pp. 492–501.
- SOWA P., PĘDZIŃSKI B., KRZYŻAK M., MAŚLACH D., WÓJCIK S., SZPAK A. (2015), "The computer-assisted web interview method as used in the national study of ICT use in primary healthcare in Poland–Reflections on a case study", *Studies in Logic, Grammar and Rhetoric*, vol. 43, n. 1, pp. 137–146.
- TANI Y., KONDO N., TAKAGI D., SAITO M., HIKICHI H., OJIMA T., KONDO K. (2015), "Combined effects of eating alone and living alone on unhealthy dietary behaviors, obesity and underweight in older Japanese adults: Results of the JAGES", *Appetite*, vol. 95, pp. 1–8.
- THOMOPOULOS R., BISQUERT P., VAN DER BURG B., ENGEL E. (2022). Good practices and ethical issues in food safety related research, *Global Pediatrics*, vol. 2, 100016.
- THOMPSON L.F., SURFACE E.A., MARTIN D.L., SANDERS M.G. (2003), "From paper to pixels: Moving personnel surveys to the Web", *Personnel Psychology*, vol. 56, n. 1, pp. 197–227.
- TREPKA M.J., MURUNGA V., CHERRY S., HUFFMAN F.G., DIXON Z. (2006), "Food safety beliefs and barriers to safe food handling among WIC program clients, Miami, Florida", *Journal of Nutrition Education and Behavior*, vol. 38, n. 6, pp. 371–377.
- UELAND O. (2009), "Meals and gender", in Meiselman, H.L. (Ed.), *Meals in Science and Practice: Interdisciplinary Research and Business Approach*, Woodhead Publishing, Oxford, pp. 92–101.

- VERAIN M.C., SIJTSEMA S.J., ANTONIDES G. (2016), “Consumer segmentation based on food-category attribute importance: The relation with healthiness and sustainability perceptions”, *Food Quality and Preference*, vol. 48, pp. 99-106.
- WELKER E.B., JACQUIER E.F., CATELLIER D.J., ANATER A.S., STORY M.T. (2018), “Room for improvement remains in food consumption patterns of young children aged 2–4 years”, *The Journal of Nutrition*, vol. 148, pp. 1536S-1546S.
- WORSLEY T., CHUN WANG W., HUNTER W. (2011), “Baby boomers' reasons for choosing specific food shops”, *International Journal of Retail & Distribution Management*, vol. 39, n. 11, pp. 867-882.
- ZHOU X., PEREZ-CUETO F.J., SANTOS Q.D., MONTELEONE E., GIBOREAU A., APPLETON K.M., BJØRNER T., BREDIE W.L.P., HARTWELL H. (2018), “A systematic review of behavioural interventions promoting healthy eating among older people”, *Nutrients*, vol. 10, n. 2, pp. 128.

The new dimension of brand in ‘metaverse’: a structured literature review

DOMENICO MORRONE¹ ANNUNZIATA TARULLI² KAROLINA SALLAKU³

Abstract

This study has the aim to verify the actual evolution of brand in the context of metaverse. The latter represents a new dimension where companies and organizations need to redefine their customers’ relationships, inside a total virtual experience. Metaverse could be the latest challenge, connected to other technological developments, to improve the brand policy. The research, being a structured literature review, takes into account more than 50 papers published over the 2006-2022 timeframe. Five main clusters were identified with theoretical and managerial implications. In particular, the results show as the metaverse could play a strategic role in improving the consumer experience through the virtual world.

Key words: brand; metaverse; virtual worlds; metaverse marketing; structured literature review.

Framing of the research. *The technological innovation always played an important role in the evolution of marketing. Actually it is possible to observe the introduction of new instruments, as the metaverse, that could have a concrete impact on the consumer experience. The latter marks the most recent and definitive transition from the physical world to the virtual world, after previous experimentations that were not so totally immersive as the last one. Metaverse represents a complete experience in a not traditional environment but, only in recent years, companies and organizations are concretely testing this improved context. One of the reason of what above mentioned is due to the constant improvement of connections and smartphones, since operations in the metaverse require a fast connection and devices able to manage huge quantities of megabytes. This evolution, being at the beginning, needs to be deeply studied and explored by scholars and practitioners, to highlight the real potential. The leap into the metaverse can concern various marketing strategies/actions, including those linked to the brand. The framework of this research is structured on the papers that will be analyzed below, whose attention is focused on the impact of metaverse on branding.*

Purpose of the paper. *The aim of this structured abstract is threefold. First, this study seeks to extend the research in brand management when ‘metaverse marketing’ is concerned. Second, it provides the state of the key research blocks involving the defined research areas to make a complete picture of the phenomenon under investigation. Finally, a research framework related to the main drivers of the metaverse exploration, as well as future directions for both scholars and practitioners, will be presented. In this way, relevant insights on how metaverse can be employed in brand management practices and consumer behaviour strategies will be provided. Therefore, the paper aims to address to the following research questions:*

RQ1: *What is the state of the art in the field of brand and metaverse?*

RQ2: *What are the key research blocks related to brand strategies in the metaverse?*

RQ3: *What are the future research directions when brand management is applied to the metaverse?*

Methodology. *In order to answer to the defined research questions, a structured literature review (SLR) was performed in the field of brand management and metaverse. This methodology allows to systematise and categorise the state of the art on a specific topic (Vrontis et al., 2020; Vrontis and Christofi, 2021). To better address the research questions the search keywords were identified by analysing the metaverse concept across several studies and sectors. Following Hollensen et al. (2022), the metaverse is defined as an aggregation of virtual worlds. Therefore, the term ‘metaverse’ was integrated by a more extensive interpretation such as ‘virtual worlds’, for this reason the main search keywords resulted in ‘brand’, ‘virtual worlds’, and ‘metaverse’. For data collection, the Scopus database was employed as it is considered the most used instrument by scholars. The search process followed three steps: identification, screening, and inclusion. A sample of 142 published articles was retrieved from the Scopus database from 2002-2022*

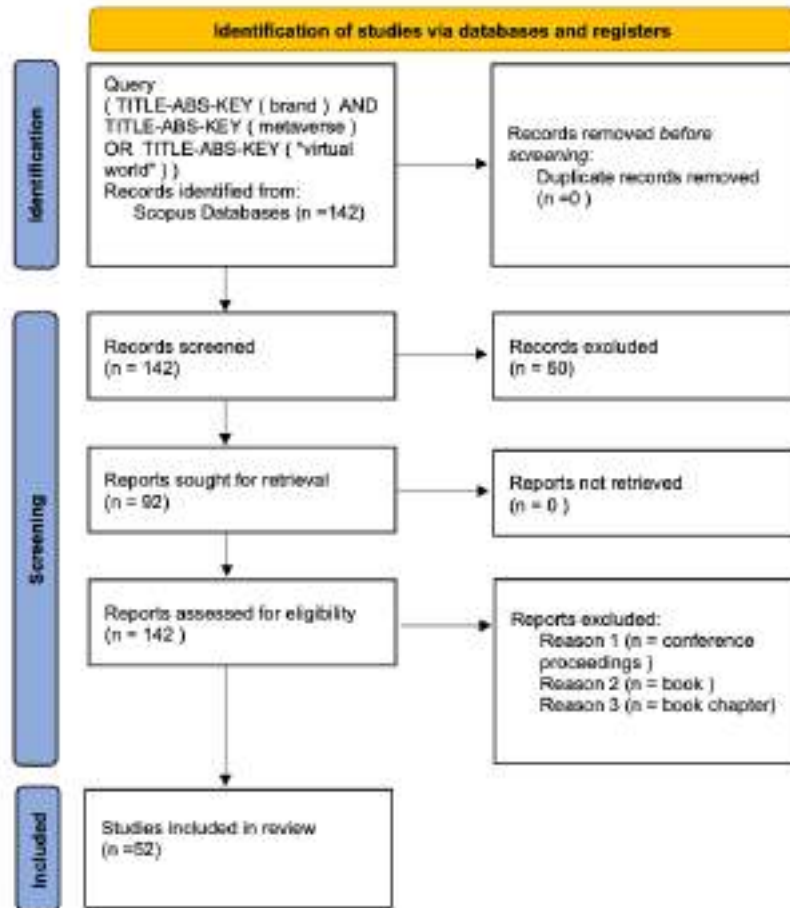
¹ LUM University
e-mail: morrone@lum.it

² LUM University
e-mail: tarulli@lum.it

³ LUM University
e-mail: sallaku.phdstudent@lum.it

by setting the following research query: TITLE-ABS-KEY (brand) AND TITLE-ABS-KEY (metaverse) OR TITLE-ABS-KEY (“virtual world”). A set of exclusion criteria was defined in order to effectively address the study aims and research questions. Consequently, books, book chapters, and conference proceedings were excluded, and papers not coherent with research topics, publication type and language (Kauppi et al., 2018) with a further abstract reading. Thus a final sample of 52 published articles was defined for the final analysis, as described in the Figure 1.

Figure 1 – Search strategy

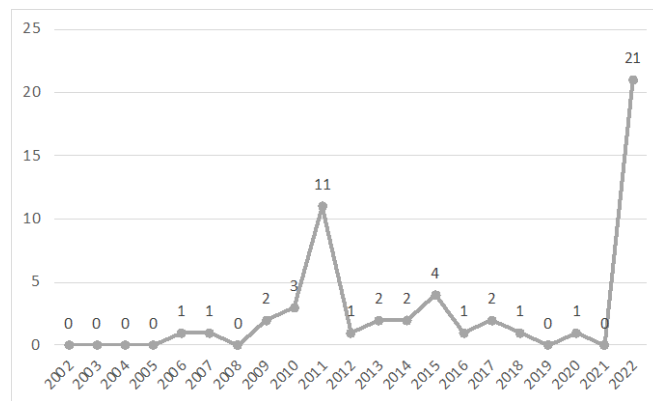


The analysis was developed in three steps to answer our research questions and provide an in-depth understanding of the phenomenon under study. First, a descriptive analysis was used to present the sample’s publication and citation structure, as well as the most influential contributions. Then, a cluster analysis and a content analysis were performed based on a bibliographic coupling method, highlighting exciting research areas. Following others’ contributions (Del Vecchio et al., 2021; Khan et al., 2020; Van Eck and Waltman, 2017), VOSviewer software was adopted for the graphical mapping of the bibliometric data in terms of collaboration and citation connections.

Results.

Descriptive analysis - The goal behind the descriptive analysis was mainly to rank the sample by the number of publications per year, geographical analysis of authorship, number of citations, common keywords, and the identification of the most influential authors. Regarding the distribution over the years, Figure 1 displays the number of published articles over the 2006-2022 timeframe. In particular, the graph shows that the first article was published in 2006 and was the sole publication for that year. The same scenario is evident in the following period, followed by the absence of contributions in 2008. Moving from 2009 to 2011, an increased number of publications was observed, with a peak in 2011 with eleven articles. However, in 2012, there was a drastic drop in the number of publications, followed by a sinusoidal trend in which, after a modest number of published articles, a considerable peak was observed in 2022. These findings demonstrate how the literature on metaverse and virtual worlds began to flourish recently, thus explaining its fragmentation over time. Due to its topicality, the increased number of contributions in recent years is linked to the greater awareness and interest in the subject by academics and practitioners, together with its potential applications in various fields.

Figure 1. Publications Trend



The distribution of articles per country and the number of citations per country were considered to analyse the articles' geographical area (Tab. 1). The count considered the involvement of a country (per university/research institution) in the authorship of the articles. For example, if an article was developed by the cooperation of several countries, the software will assign each country one point. In this way, it was possible to understand which countries have ever shown interest in studying the understudy topic. Furthermore, to get a complete picture, we cross-referenced data on authorship and the number of citations by countries and compared their rankings. Data revealed that the United States, the United Kingdom and Australia ranked first, second and fifth in both the number of contributions and the number of citations. In detail, the United States count 18 published articles and 509 citations, followed by the United Kingdom with 10 published articles and 130 citations, while Australia closes the top five chart with 3 published articles and 38 citations. Although several countries have expressed their interest in the subject, it seems that the United States represents the most influential country. This result could be related to the American nationality of virtual industry giants, being Silicon Valley the place where the metaverse was born and developed. However, the more this environment develops, the more it is likely to spread to other states. Therefore, possible changes of scenario must be taken into account for the future.

Table 1. Top five countries per publications and citations

Ranking		N. of documents		N. of citations
1	United States	18	United States	509
2	United Kingdom	10	United Kingdom	130
3	China	4	France	85
4	Germany	3	Denmark	57
5	Australia	3	Australia	38

Table 2 highlights the top three academic journals in which the papers included in the sample were published. Studying where articles are published represents an important indicator, especially for researchers and authors (Del Vecchio et al., 2021; Dumay and Cai, 2014). So far, the top-ranked journals are Linguistic and Philosophical Investigations (six publications), Journal of Brand Management (five papers), and Journal of Marketing Management (two articles). The ranking shows us a high level of heterogeneity, as topics range from brand to marketing management, with an investigative perspective.

Table 2. Top three journals sources

Scientific journal	N. of paper
Linguistic and Philosophical Investigations	6
Journal of Brand Management	5
Journal of Marketing Management	2

As for the most cited papers, Table 3 confirms the geographical interest around this topic from the United States and the United Kingdom mentioned before. Following previous SLRs (e.g., Massaro et al., 2016; Armstrong et al., 2013), the articles were ranked using citations and CPY (i.e., citations per cited paper per year), showing Nah et al. (2011) as the most influential one, while the publications of Hemp (2006) and Barnes (2007) are in second and third place respectively. The most common keywords resulted in 'virtual worlds', 'virtual reality', and lastly, 'metaverse', demonstrating a temporal shift towards the metaverse concept. Indeed, the metaverse is defined as an aggregation of virtual worlds (Hollensen et al., 2022), moving the research from singular virtual worlds (i.e., Second Life) to a multitude of platforms (e.g., Roblox).

Table 3. Top three articles per citations and cpy

Ranking (citations)	Authors	Title	Year	Source title	Country	Cited by	CPY	Ranking (CPY)
1	NAH, F. F. H., ESCHENBRENNER, B., & DEWESTER, D.	Enhancing brand equity through flow and telepresence: A comparison of 2D and 3D virtual worlds	2011	MIS Quarterly: Management Information Systems	United States	248	20,16	1 (-)
2	HEMP P.	Avatar-based marketing	2006	Harvard Business Review	United States	209	19,92	2 (-)
3	BARNES S.	Virtual Worlds as a Medium for Advertising	2007	Data Base for Advances in Information Systems	United Kingdom	57	5,18	3 (-)

Cluster and content analysis - In order to provide an in-depth understanding of the leading research areas, the 25 papers identified by VOSviewer were grouped into eight clusters. Due to the thematic fragmentation of the topics examined, a content analysis was performed by each researcher individually. Then, a discussion followed, and a reclassification into more homogeneous groups resulted in five remaining clusters. In fact, the topic “Virtual Worlds” was examined across different perspectives such as company-brand-consumer, institutions and brand value-extension. These topics were further investigated among different environments such as: real-world, 2D and 3D virtual worlds and concerning several phenomena. Ultimately, five main clusters were identified such as (1) Brand management and consumer behaviour in virtual worlds; (2) Virtual worlds as a laboratory-like environment; (3) Virtual worlds’ impact on brand-consumer phenomena; (4) Multi-perspective approach of virtual worlds’ technologies; (5) Brand Value in virtual worlds (Table 4).

Table 4 - Final clusters based on research areas

Research area	Authors
Brand management and consumer behavior in virtual worlds	Goh and Ping (2014), Jin and Lee (2010), Palomba (2020), Bames (2007).
Virtual worlds as laboratory-like environment	Belei et al. (2011), Hansen (2013), Jankowski et al. (2018), Singh et al. (2015), Cipresso (2015).
Virtual worlds impact on brand-consumer phenomena	Hassouneh and Brengman (2011), Huang et al. (2013), Melancon (2011), Ramanathan and Purani (2014), Crick (2011), Goel and Prokopec (2009), Gabisch (2011), Gabisch and Gwebu (2011).
Multi-perspective approach of virtual worlds’ technologies	Dwivedi et al. (2022), Kliestik et al. (2022), Rauschnabel et al. (2022).
Brand value in virtual worlds	Barnes and Mattsson (2011), Barnes et al. (2015), Muzellec et al. (2012), Nah et al. (2011), Pamment (2011).

The thematic areas are discussed more thoroughly as follows:

- Brand management and consumer behaviour in virtual worlds. In this group, authors mostly examined the brand-consumer relationship concerning brand experience within Virtual Worlds and potential impacts on consumer behaviour such as attitudes, gratifications, relationships, trust and satisfaction. In these cases, virtual worlds were primarily treated as another environment in which the relationship brand-consumer occurred in terms of consumer experience, and its outcomes were analysed through variables related to satisfaction, trust and loyalty (Jin and Lee, 2010; Palomba, 2020). Moreover, special attention toward advertising was observed (since gaming was one of the first virtual worlds’ experience). Scholars focused on advertising effectiveness in gaming situations treating attitude formation, and behavioural intentions (Goh and Ping, 2014; Barnes, 2007).
- Virtual worlds as a laboratory-like environment. This cluster was characterized by a particular focus on virtual worlds employed as a tool to perform experiments related to behavioural dynamics (Singh et al., 2015; Cipresso, 2015) modelling a virtual replica of real-world environments where several experimental conditions may be controlled and standardized. In addition, virtual worlds were used to analyse the effects of marketing actions, brand strategies and consumers’ responses through simulations within more manageable virtual environments (Hansen, 2013; Jankowski et al., 2018).

- *Virtual worlds impact on brand-consumer phenomena.* This resulted in the most numerous cluster. In fact, most of the authors investigated virtual worlds as a relevant driver, able to influence several dynamics related to brand strategies and opportunities' creation (Ramanathan and Purani, 2014; Melancon, 2011); marketing strategies and consumer behavioural changes such as attitudes and trust (Goel and Prokopec, 2009; Gabisch, 2011; Gabisch and Gwebu, 2011). Lastly, there is evidence of a first sectorial orientation (toward tourism) to better understand how virtual worlds may affect the hospitality industry and its implications for physical places' value extension on virtual environments (Crick, 2011; Huang et al., 2013). In this cluster emerge a potential new concept such as 'metaverse marketing', that is defined here as 'the marketing practices employed in the metaverse'.
- *Multi-perspective approach of virtual worlds' technologies.* This cluster denotes a terminology shift from 3D and virtual worlds to the metaverse. Primary, this is explained by the time of the papers' publication (2022) when the term spread extensively among scholars and practitioners. Moreover, in this multi-perspective narrative, there was a focus on complexities, factors and challenges that may involve consumers (intended as users) and brands (Dwivedi et al., 2022). Also, scholars made efforts to explore the metaverse through an overview of previous literature in an attempt to define the status quo of the research by providing essential insights for future analysis of the metaverse since the phenomenon is at its hype (Kliestik et al., 2022; Rauschnabel et al., 2022).
- *Brand Value in virtual worlds.* In the last group, scholars examined virtual worlds as a factor affecting brand value. The attention focused on the development of new models to better measure the brand value in virtual worlds (Barnes and Mattsson, 2011), the identification of challenges for virtual worlds in the experiential value creation (Barnes et al., 2015), the brand value differences among 2D, 3D and real environments (Muzellec et al., 2012; Nah et al., 2011) and a first practical implication of brand value on virtual worlds related to place branding (Pamment, 2011).

Research limitations. This study represents one of the first attempt to provide an overview of the brand in the context of metaverse. Evaluating the novelty of the topic, it is clear as further and deep analysis are necessary to give a more complete and updated vision of this phenomena. In the practice, the most important brands are present in the metaverse but this presence still needs to be structured. The limited number of selected papers for the structured literature review provided is a concrete signal of this new line of research which will certainly grow in the coming years. The next steps could be represented by the evaluation of the further scientific contributions that will certainly be made, as well as a broader exploration of the research areas identified so far.

Managerial implications. From a theoretical perspective, this study suggests that future research should focus on examining two main aspects. On one hand, the consumer behaviour perspective such as attitudes, perceptions and experiences occurring on the metaverse may be considered. On the other hand, some specific fields of analysis such as tourism, education, place branding, advertising, and gaming in a metaverse context should be a future research focus. This orientation may offer opportunities to better define dynamics and differences in several environments (i.e., real, 2D, 3D). Moreover, this study offers practical implications mainly related to the use metaverse as a space to perform brand positioning strategic choices. Specifically, the metaverse can build strategies for both brand extensions and consumer journey expansion toward a new touching point, moving from a digital to a virtual world.

Originality of the paper. This study seeks to provide a comprehensive review of the articles dealing with brands and consumers from a 'metaverse marketing' new perspective. Despite its relevance and increasing interest, research in this area still needs to be expanded beyond a few fields of study. Therefore, future research should focus more on these unexplored topics theoretically and empirically.

References

- ARMSTRONG H., MCCULLOH I., JOHNSON A. (2013), *Social network analysis with applications*, John Wiley & Sons.
- BARNES S. (2007), *Virtual worlds as a medium for advertising*. *ACM SIGMIS Database: the DATABASE for Advances in Information Systems*, vol. 38, n. 4, pp. 45-55.
- BARNES S.J., MATTSSON J. (2011), "Exploring the fit of real brands in the Second Life 1 virtual world", *Journal of Marketing Management*, vol. 27, n. 9-10, pp. 934-958.
- BARNES S.J., MATTSSON J., HARTLEY N. (2015), "Assessing the value of real-life brands in virtual worlds", *Technological Forecasting and Social Change*, vol. 92, pp. 12-24.
- BELEI N., NOTEBORN G., DE RUYTER K. (2011), "It's a brand new world: Teaching brand management in virtual environments", *Journal of Brand Management*, vol. 18, n. 8, pp. 611-623.
- CIPRESSO P. (2015), "Modeling behavior dynamics using computational psychometrics within virtual worlds", *Frontiers in psychology*, vol. 6, 1725.
- CRICK A.P. (2011), *New third places: Opportunities and challenges*, *Tourism sensemaking: Strategies to give meaning to experience*.
- DEL VECCHIO P., MELE G., SIACHOU E., SCHITO G. (2021), "A structured literature review on Big Data for customer relationship management (CRM): toward a future agenda in international marketing", *International Marketing Review*.
- DUMAY J., CAI L. (2014), "A review and critique of content analysis as a methodology for inquiring into IC disclosure", *Journal of intellectual capital*, vol. 15, n. 2, pp. 264-290.
- DWIVEDI Y.K., HUGHES L., BAABDULLAH A.M., RIBEIRO-NAVARRETE S., GIANNAKIS M., AL-DEBEI M.M., WAMBA S.F. (2022), "Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy", *International Journal of Information Management*, vol. 66, 102542.

- GABISCH J.A. (2011), "Virtual world brand experience and its impact on real world purchasing behavior", *Journal of Brand Management*, vol. 19, n. 1, pp. 18-32.
- GABISCH J.A., GWEBU K.L. (2011), "Impact of virtual brand experience on purchase intentions: the role of multichannel congruence", *Journal of Electronic Commerce Research*, vol. 12, n. 4).
- GOEL L., PROKOPEC S. (2009), "If you build it will they come?—An empirical investigation of consumer perceptions and strategy in virtual worlds", *Electronic Commerce Research*, vol. 9, n. 1, pp. 115-134.
- GOH K.Y., PING J.W. (2014), "Engaging consumers with advergames: An experimental evaluation of interactivity, fit and expectancy", *Journal of the Association for Information Systems*, vol. 15, n. 7, pp. 2.
- HANSEN S.S. (2013), "Exploring real-brand meanings and goods in virtual-world social interaction: Enhanced rewards, rarity, and realism", *Journal of Marketing Management*, vol. 29, n. 13-14, pp. 1443-1461.
- HASSOUNEH D., BRENGMAN M. (2011), "Virtual worlds: A gateway for SMEs toward internationalization", *Journal of Brand Management*, vol. 19, n. 1, pp. 72-90.
- HOLLENSSEN S., KOTLER P., OPRESNIK M O. (2022), "Metaverse—the new marketing universe", *Journal of Business Strategy*.
- HUANG Y.C., BACKMAN S.J., MCGUIRE F.A., BACKMAN K.F., CHANG L.L. (2013), "Second life: The potential of 3D virtual worlds in travel and tourism industry", *Tourism Analysis*, vol. 18, n. 4, pp. 471-477.
- JANKOWSKI J., ZIOŁO M., KARCZMARCZYK A., WĄTRÓBSKI J. (2018), "Towards Sustainability in Viral Marketing with User Engaging Supporting Campaigns", *Sustainability*, vol. 10, n. 1, pp. 15.
- JIN S.A.A., LEE K.M. (2010), "The influence of regulatory fit and interactivity on brand satisfaction and trust in E-health marketing inside 3D virtual worlds (Second Life)", *Cyberpsychology, Behavior, And Social Networking*, vol. 13, n. 6, pp. 673-680.
- KHAN M.A., ALI I., ASHRAF R. (2020), "A bibliometric review of the special issues of Psychology & Marketing: 1984-2020", *Psychology & marketing*, vol. 37, n. 9, pp. 1144-1170.
- KLIESTIK T., NOVAK A., LĂZĂROIU G. (2022), "Live Shopping in the Metaverse: Visual and Spatial Analytics, Cognitive Artificial Intelligence Techniques and Algorithms, and Immersive Digital Simulations", *Linguistic & Philosophical Investigations*.
- MELANCON J.P. (2011), "Consumer profiles in reality vs fantasy-based virtual worlds: implications for brand entry", *Journal of Research in Interactive Marketing*.
- MUZELLEC L., LYNN T., LAMBKIN M. (2012), "Branding in fictional and virtual environments: Introducing a new conceptual domain and research agenda", *European Journal of Marketing*.
- NAH F.F.H., ESCHENBRENNER B., DEWESTER D. (2011), "Enhancing brand equity through flow and telepresence: A comparison of 2D and 3D virtual worlds", *MIS Quarterly*, pp. 731-747.
- PALOMBA A. (2020), "How high brand loyalty consumers achieve relationships with virtual worlds and its elements through presence", *Journal of Media Business Studies*, vol. 17, n. 3-4, pp. 243-260.
- PAMMENT J. (2011), "Innovations in public diplomacy and nation brands: Inside the House of Sweden", *Place Branding and Public Diplomacy*, vol. 7, n. 2, pp. 127-135.
- RAMANATHAN J., PURANI K. (2014), "Brand extension evaluation: real world and virtual world", *Journal of Product & Brand Management*, vol. 23, n. 7, pp. 504-515.
- RAUSCHNABEL P.A., BABIN B.J., TOM DIECK M.C., KREY N., JUNG T. (2022), "What is augmented reality marketing? Its definition, complexity, and future", *Journal of Business Research*, vol. 142, pp. 1140-1150.
- SINGH S., PAYNE S.R., MACKRILL J.B., JENNINGS P.A. (2015), "Do experiments in the virtual world effectively predict how pedestrians evaluate electric vehicle sounds in the real world?", *Transportation research part F: traffic psychology and behaviour*, vol. 35, pp. 119-131.
- VAN ECK N.J., WALTMAN L. (2017), "Citation-based clustering of publications using CitNetExplorer and VOSviewer", *Scientometrics*, vol. 111, n. 2, pp. 1053-1070.

Websites

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Delving into sustainability and Made in Italy fashion brands: Perspectives from Generation Z¹

FEDERICA CECCOTTI² SARA BOCCALINI³ MICHELA PATRIZI⁴
MARIA VERNUCCIO⁵ ALBERTO PASTORE⁶

Abstract

This study is situated within the literature on sustainable fashion and the Made in Italy fashion strand, with the aim to explore consumers' associations with sustainable Made in Italy fashion brands. Through three focus groups with 23 Generation Z consumers and subsequent thematic content analysis, the associations in the overlap area between sustainable fashion brands and Made in Italy fashion brands were explored. Findings showed that consumers associate the sustainable choices of Italian companies mainly with the social dimension of sustainability. Concerning the environmental dimension, Made in Italy products' aesthetics and their qualitative excellence are perceived as almost incompatible with some sustainable practices.

The study contributes to the literature on sustainable branding by focusing on the Made in Italy context for the first time. It enriches the literature on Made in Italy fashion and its sustainability transition, deepening a previously neglected standpoint, i.e., the consumer perspective. Lastly, the findings provide valuable insights to managers of Italian fashion companies engaged in sustainable transition.

Keywords: *Made in Italy; sustainability; fashion industry; focus group; Generation Z (Gen Z); thematic content analysis.*

Framing of the research. Sustainable fashion is grounded in a philosophical framework that emphasizes sustainability principles within the fashion sector. Specifically, it aims to mitigate environmental and social impacts across the entire lifecycle of textile and apparel products, encompassing aspects such as supply chain, production, distribution, and consumption (Henninger et al., 2016). The sustainable transition of fashion brands holds significant relevance, as the fashion industry represents the most environmentally polluting industry worldwide, accounting for 8 to 10% of total greenhouse gas emissions (Gennari, 2023). Additionally, nearly 97% of fashion items originate from countries like Bangladesh and China, where workers often experience ongoing human rights violations (Montero, 2024). Based on this data, it becomes evident that fashion brands are responsible for the environment, workers, and society. Consequently, they are compelled to actively participate in sustainable initiatives to transition away from “fast fashion” practices.

However, although pioneers such as Patagonia have led the way in adopting sustainability as a guiding principle of their business, numerous brands continue to prioritize profit maximization while minimizing costs, therefore resulting in an opaque and transient supply chain (Milano Ferri, 2024). In this regard, it is crucial for marketers to realize that adopting sustainable practices offers fashion brands the potential for long-term benefits. This entails enhancing operational efficiency and resource management, leading to extended-range cost reductions, while also increasing consumers' perceptions of the brand (Grubor & Milovanov, 2016). Indeed, 63% of consumers consider the fashion brand's promotion of sustainability to be relevant in their brand choice (Kolk, 2023). Moreover, research on branding and sustainability has shown that sustainable brand initiatives can positively influence consumer-brand evaluations. For instance, it can enhance the brand image by moving toward a more sustainable direction (Araújo et al., 2023; Parguel

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² Sapienza University of Roma
e-mail: federica.ceccotti@gmail.com

³ Sapienza University of Roma
e-mail: sara.boccalini@uniroma1.it

⁴ Sapienza University of Roma
e-mail: michele.patrizi@uniroma1.it

⁵ Sapienza University of Roma
e-mail: maria.vernuccio@uniroma1.it

⁶ Sapienza University of Roma
e-mail: alberto.pastore@uniroma1.it

et al., 2015; Chen, 2010), increase perceived brand value (Gupta et al., 2013), and shape perceived brand personality (Sander et al., 2021).

Considering the Made in Italy fashion context, world-renowned for its quality and style (Ceccotti et al., 2024), there is a noticeable push toward greater sustainability, thus infusing an ethical dimension alongside the intrinsic aesthetic appeal of Italian products (Fabietti, 2015). As early as 2012, the National Chamber of Italian Fashion promoted the Decalogue on Social and Environmental Responsibility in the Fashion Industry, to steer fashion in a responsible and sustainable direction (Mortara & Fragapane, 2016). Concurrently, several iconic Made in Italy fashion brands have incorporated sustainability into their activities. For example, Giorgio Armani has been involved in humanitarian projects since 2006 (e.g., Product Red, Acqua for Life) and, with the launch of the Armani Values website in 2022, constantly communicates its social and environmental commitments to consumers (Armani Values, 2024). Considering the historical impact of Made in Italy on both domestic and international fashion markets (Terenzi & Benelli, 2021), exploring consumer perceptions of Italian fashion brands transitioning toward sustainability sends a positive signal also to international fashion companies. In this regard, although data suggests that three out of four Italian consumers born between the 1990s and 2010s prioritize a brand's sustainable practices in their choices (Valleriani, 2022), the emerging literature on sustainable Made in Italy fashion brands fails to address consumer perceptions of their sustainable transition. For instance, Tebaldi and colleagues (2022) investigated, from a managerial standpoint, the factors that drive companies to adopt eco-friendly practices, along with the levels of implementation and performance of these initiatives. Similarly, other studies have examined case studies of Italian companies to identify sustainable best practices within the supply chain of the Italian fashion system (Terenzi & Benelli, 2021), as well as how the Italian fashion value chain has responded to the COVID-19 crisis through digitalization (Di Maria et al., 2023). Only the case study by Ceccotti and colleagues (2024) provided the first integrated view of the values of Made in Italy with sustainability (economic, environmental, and social), by analyzing an iconic Italian fashion company that has embarked on a sustainable path. However, the current research has not yet explored consumers' perceptions of Made in Italy brands that are implementing sustainable social and environmental activities.

Purpose of the paper. Exploring the consumers' associations with sustainable Made in Italy fashion brands holds significant importance within the outlined context. Firstly, it elucidates the evaluative consumer's responses achievable from Made in Italy brands that embrace sustainability. Additionally, it can provide valuable guidance to Italian fashion companies in formulating brand positioning and communication strategies. Moreover, given the potential impact of Made in Italy fashion on international market dynamics (Terenzi & Benelli, 2021), this research can motivate other international brands to adopt sustainable practices to enhance consumer perceptions.

Therefore, by merging the literature on sustainable fashion branding and the strand of Made in Italy fashion, this study aims to explore the associations that consumers attribute to sustainable Made in Italy fashion brands.

Methodology. Given the exploratory nature of our research objective, we employed a qualitative methodology centered on focus group discussions involving individuals from Generation Z. This approach, widely utilized in marketing research, serves to uncover insights into consumer behavior and illuminate areas of inquiry that have received relatively little attention (Jenkins & Harrison, 1990; Fernqvist et al., 2015). Furthermore, focus groups provide valuable insights into respondents' cognitive, emotional, and behavioral responses, which are often difficult to capture through methods like questionnaires or observations (Gibbs, 1997). Moreover, Krueger and Casey (2009) highlighted that in a focus group, participants engage in a dynamic social environment where they interact and exchange ideas. Unlike individual interviews, focus groups allow for the organic emergence of insights as participants actively shape and contribute to the discussion. Indeed, the interactive nature and social context of focus groups encourage the emergence of diverse perspectives (Gibbs, 1997), with participants often prompting one another to consider new issues (Lawless & Heymann, 2010), shedding light on shared perceptions, attitudes, and behaviors (Morgan, 2002). Leveraging interactions among participants, focus groups enable data triangulation and validation, as converging experiences and perspectives bolster the credibility and reliability of research outcomes (Stewart et al., 2007).

We have chosen to concentrate on Gen Z consumers due to their well-recognized enthusiasm for fashion and their notable impact on the industry (Cassidy, 2019). In their decision-making process, they are drawn to brands that align with their core values, particularly those emphasizing sustainability (Cassidy, 2019). Indeed, this generation is frequently acknowledged as one of the most environmentally and socially conscious, exhibiting a strong preference for fashion brands that prioritize environmentally friendly production, ethical labor practices, and transparency in the supply chain (PwC, 2020). Moreover, Generation Z is driving the demand for circular fashion models, which include initiatives such as clothing rental services, second-hand marketplaces, and clothing recycling programs (McKinsey & Company, 2021). This inclination also extends to Made in Italy fashion brands, renowned for their commitment to craftsmanship and environmental stewardship (McKinsey & Company, 2021).

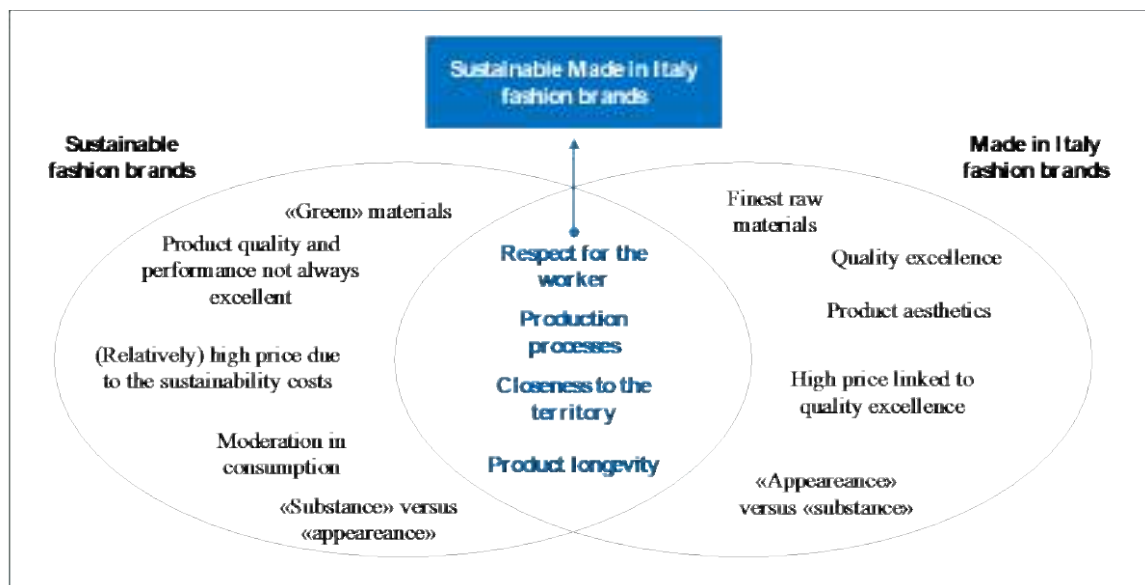
Concerning data collection, participants were initially contacted via email and were invited to participate in the study by completing a self-reported questionnaire. The questionnaire included a screening question to confirm the participants' age, asking, "Are you born between 1996 and 2005?". It also sought to detect the level of importance of Made in Italy fashion brands in purchasing choices (e.g., "When you choose a piece of clothing, how important is it to you that it is a Made in Italy branded product?") and the sustainable orientation of consumers in the fashion industry. Specifically, sustainability orientation was measured by adapting the 14-item scale developed by Roth & Robbert (2013) to the fashion context (e.g., "It is important to me that fashion companies reduce their emissions"). Adopting a purposive sampling strategy, we recruited Generation Z individuals with high mean values for interest in Made in Italy and sustainability orientation. Accordingly, 23 respondents were involved, 17 women and 6 men, aged between 21 and 27, both workers

and students. The three focus groups were conducted in a dedicated room within the Department of Management and took place in November 2023. The discussion guide followed a process of “cyclical development” (Gillham, 2005, p. 22), which reinforced the validity and transparency of the analytical process. The discussion guide's topics first concerned the associations that participants linked to the concept of sustainable fashion brands and then to Made in Italy fashion to identify the overlap area and delineate the perception of sustainable Made in Italy fashion brands. The focus groups, each lasting approximately two hours, were recorded and analyzed through thematic content analysis (King & Horrocks, 2010). To verify the reliability of the analysis, the coding process was performed separately by two members of the research team and subsequently compared. Furthermore, the results were confirmed by two independent expert coders, revealing a satisfactory “ratio of agreement” (i.e., 88%).

Results. The analysis of the three focus groups showed only partial convergence between the participants' associations with sustainability in the fashion industry and the specific characteristics of Made in Italy fashion brands (Figure 1). To obtain a deeper understanding of this overlap area, we will describe the following:

1. The unique associations that are commonly linked to sustainable fashion brands,
2. The unique associations that are commonly linked to Made in Italy fashion brands,
3. The shared associations between sustainable fashion and Made in Italy fashion brands, as perceived by Gen Z consumers who participated in the three focus groups.

Figure 1- Sustainability and Made in Italy fashion brands: The overlap area



1. Sustainable fashion brands

Concerning the unique associations with sustainable fashion brands, the following themes emerged:

- (a) Use of "green" materials such as organic fibers, natural colors, and recycled materials, not from animal exploitation (such as leather, fur and feathers), leading to products that do not harm the environment and society;
- (b) Product quality and performance not always excellent: The choice of sustainable raw materials (e.g., fibers made from food or recycled plastic and eco-leather) can lead to products that sometimes are not aesthetically beautiful and high-performing (e.g., in terms of comfort in use, durability, or softness of fabrics): "Environmental sustainability in clothes makes me think of faded colors, dark brown recycled cardboard labels, and the narrowness of the assortment" (Participant 4, Group 2). Another participant echoed this, saying: "Real leather bags give a whole different feeling than eco-leather bags that are more rigid instead" (Participant 5, Group 2);
- (c) (Relatively) high price to cover the higher costs related to the choice of raw materials and packaging and, above all, to respect workers' conditions. In participants' perception, the price is not necessarily high in absolute terms, but in comparison with that of fast fashion products;
- (d) Moderation in consumption. From the participants' point of view, this theme holds two different meanings. The first is reducing the purchase of large quantities at low prices in favor of more reasoned purchases of sustainable products: "We have been used to buying and wearing clothing almost in disposable mode. This routine is no longer possible; we cannot continue to compulsively buy clothes, even if they are cheap, to use them once, and that is it" (Participant 5, Group 2). On the other hand, one aspect that is emerging as relevant in the participants' perceptions is the extension of product life and recycling of products (i.e., second hand): "We need to take advantage of the garments we have until the end of their useful life, without getting overwhelmed by the logic of the continuous search for low-priced varieties. If they no longer serve us, they can serve others, so why not sell them to keep them alive?" (Participant 6, Group 2);

(e) "Substance" versus "appearance": in the case of sustainable fashion brands, consumers prioritize the impact their clothing choices have on the environment and society over product aesthetics. As a result, they are willing to compromise on product quality, pay higher prices, and even buy fewer garments, rather than continuing to support the fast fashion industry's constant search for new styles.

2. Made in Italy fashion brands

From the analysis of the participants' associations with the Made in Italy fashion brands, the following themes emerged:

- (a) Sophisticated and finest raw materials used to make excellent and durable products;
- (b) Quality excellence: Thanks to the use of fine materials and, as will be discussed, production processes that are still partially artisanal, Made in Italy fashion is "a guarantee of superior quality throughout the world, quality not only in raw materials but also in processes that take great care of all details, such as stitching, packaging, etc." (Participant 6, Group 2);
- (c) Product aesthetics, related to the style, design, and attention to detail (i.e., quality of stitching) of fashion garments offered by Italian companies. "Made in Italy is recognized as beautiful and well made all over the world" (Participant 3, Group 1);
- (d) High price, associated with the high quality of products, style, design, and the awareness of many Made in Italy brands, and only to a lesser extent with the higher costs of sustainability (especially on the social front, connected with respect for workers' conditions);
- (e) "Appearance" versus "substance": the consumer choice is driven by style and the high awareness of Made in Italy fashion brands recognized worldwide. In participants' perceptions, choices driven by product aesthetics (i.e. by "appearance") are almost in opposition to those driven by sustainability (i.e., by "substance"): "Beauty is sometimes associated with superficiality because everyone can appreciate it without too much effort. Sustainability is a different matter. To appreciate it, you must have the will to inform yourself and seek the best solution for you, the environment, and society" (Participant 7, Group 3).

3. Sustainable Made in Italy fashion brands

Several respondents had some difficulties combining the values of sustainability with those of Made in Italy fashion. Indeed, many participants said that the superiority of Made in Italy productions today is still not wholly linked to sustainability: "I think sustainability and Made in Italy in fashion are still disconnected concepts; I have a struggle to put them together" (Participant 5, Group 1). Another participant echoed this consideration: "Made in Italy is still not fully focused on sustainability. Maybe in a few years it will be, but not now" (Participant 1, Group 1). Also, "Not all quality brands, such as Made in Italy fashion brands, are necessarily sustainable, just as it is not that all brands that claim to be sustainable are qualitatively superior to others" (Participant 4, Group 1).

More specifically, the use of "green" raw materials is considered by some participants to be almost not compatible with the high-quality standards and aesthetics of Made in Italy fashion products: "If I buy a Made in Italy fashion product, it is because I am looking for something beautiful, that is of high quality. I believe these characteristics are not found in sustainable products that use eco-friendly materials. Consumers buy the latter for other reasons, not because they are beautiful and high quality" (Participant 6, Group 2). Another participant shared the same opinion: "Certainly, products made from 'green' organic fibers do not stand out in terms of beauty, while Italian fashion products are precisely recognized worldwide for taking care of aesthetic aspects. Are we sure that aesthetics and sustainability are compatible? In my opinion, not at the moment" (Participant 5, Group 2).

More often, in the perception of many participants, there is a spontaneous association between Made in Italy and the social dimension of sustainability. Indeed, delving into the area of intersection between sustainable fashion brands and Made in Italy fashion brands, the following common themes emerged:

- (a) Respect for the worker: in contrast to the dynamics of fast fashion, focus group participants emphasized that one of the defining aspects of sustainable Made in Italy fashion brands is the attention to the quality of workers' conditions and working environments: "I associate Made in Italy with the guarantee that workers cannot be exploited. I take it for granted" (Participant 3, Group 3). In the participants' perception, this is true for companies that still adopt artisanal processes (such as small and medium-sized ones) and for larger companies that nonetheless stand out in the global fashion industry for their attention to the well-being of their human resources;
- (b) Production processes, that are characterized by increasing attention to waste reduction in resource use and care in product disposal, as well as attention to detail at every stage of the materials' transformation;
- (c) Closeness to the territory and the communities they belong to from which they often draw skilled workforce: "The territory becomes part of the company's storytelling. For example, Brunello Cucinelli and Tod's come to my mind: they are firms strongly rooted in a specific area to which they want to give something of what they have built back" (Participant 2, Group 2);
- (d) Product longevity, which is linked to the high quality and artisanal nature of production: in this sense, Made in Italy fashion products are "naturally" associated with sustainability, as they are expected to last longer than those characterized by a lower level of quality. Participants also link the longer life of products to the possibility or willingness to repair them.

Research limitations. This study has some limits that suggest avenues for further research. Limitations primarily relate to the nature of qualitative research and the focus group method. While generating deeper insight into phenomena, the findings are restricted to small numbers of Generation Z individuals, providing findings that cannot be generalized across populations. Consequently, further research should be done to involve other generational groups, like Gen-Y, Gen-X, and/or Baby Boomers, as well as verify our results by applying quantitative approaches (e.g., surveys or experimental studies). This study also focused on fashion brands. Future research should verify whether our results are generalizable to different Made in Italy sectors investing in sustainability, such as furniture and automotive. Moreover, given that many Made in Italy fashion brands are at the beginning of their sustainable transition and are investing in building a sustainability-based positioning, it might be helpful to replicate the study over time to observe the effects of these investments on consumer perceptions in the medium term.

Managerial implications. The results of our study could provide valuable insights to managers of Italian fashion companies engaged in sustainable transition. First, Made in Italy fashion companies should continue strengthening their positioning based on the social sustainability dimension, communicating their closeness to the territory and attention to workers' well-being. Given that many of the processes in Made in Italy fashion are still artisanal, company employees could also be central in the storytelling of the qualitative excellence of Italian products, which are carefully crafted down to the smallest detail, from the choice of raw materials to the different phases of the production process.

Second, the perceived distance found by the participants between environmental sustainability in the choice of raw materials and the aesthetics and quality of the products leads to a relevant challenge: indeed, firms should work to combine beauty and style with "green" raw materials and ecological production processes without betraying the promise of quality excellence guaranteed by Made in Italy productions. This result could initially be achieved through investments in packaging, an integral part of the product system, as many Made in Italy companies already do on labels and packaging, and then try to intervene more directly on the product itself. In addition to using green materials, companies could focus investment on adopting production processes that can reduce the impact of fashion on the environment while enabling them to maintain the high quality of the products.

Finally, another important activity to consider could be consumer education for moderation through communication campaigns that can lead consumers to reflect on the value of Made in Italy fashion products and the opportunity to extend their useful life or give them a second life. Consumer education through communication, especially toward younger generations such as the one involved in our study, could also help lead to more conscious choices in the purchase of clothing, not only related to the aesthetic value of the product (i.e., the "appearance") but also to the contribution that product can make to reducing the environmental and social harms of fashion (i.e., the "substance").

Originality of the paper. Our exploratory study stands at the intersection of research on sustainable fashion branding and studies on Made in Italy fashion, contributing to both fields through an investigation of the associations that consumers attribute to sustainable Made in Italy fashion brands. Specifically, our findings reveal first the values that consumers associate with sustainable brands, such as the use of green raw materials and premium prices directly supported by previous literature on sustainable fashion branding that investigates consumers' underlying values and motivations for sustainable fashion consumption (e.g., long-lasting, natural materials, recycled, environmentally friendly production techniques) (Lundblad & Davies, 2016). Second, consumers' associations with Made in Italy fashion, such as the qualitative excellence, aesthetics and high price, emerge from our study, in line with prior studies identifying attributes such as creativity, aesthetics, quality, and sophistication (Temperini et al., 2016). Focusing on the primary objective of our study, the results unexpectedly highlight a challenge in identifying perceptions related to both Made in Italy and sustainable fashion brands. While unambiguous associations with sustainable Made in Italy fashion emerge, such as respect for workers and connections to the territory and community supported by previous studies from a managerial perspective that identify social responsibility as an integrated value between sustainability and Made in Italy fashion (Ceccotti et al., 2024), significant contrasts also arise. Particularly, differences are evident regarding product aesthetics, a trait that, although naturally linked with Made in Italy fashion, does not extend to sustainable fashion brands in the consumer's perception. This finding aligns with broader discussions in the literature, which identify product aesthetics as a significant factor contributing to the attitude-behavior gap in eco-fashion (Niinimäki, 2010). Another relevant difference is related to the concept of quality. Indeed, qualitative excellence that characterizes Made in Italy fashion cannot automatically be linked to sustainable practices, just as adopting a sustainable approach does not necessarily lead to obtaining qualitatively superior products. On the contrary, our study highlights that consumers perceive high quality as not fully and consistently compatible with environmental sustainability when using "green" raw materials. This result aligns with previous studies in the wider fashion industry that measured consumer disgust with garments made with recycled plastic, perceived as contaminated (Meng & Leary, 2021).

Therefore, our work first contributes to the field of sustainable branding by focusing for the first time on the associations that consumers attribute to a sustainable brand in the specific context of Made in Italy, which has not been studied so far and which could play a central role in the sustainable transition of national and international fashion brands. At the same time, this study enriches the literature on Made in Italy fashion and its transition to sustainability with the consumer perspective, a previously neglected standpoint compared to the managerial one (Ceccotti et al., 2024; Di Maria et al., 2023; Tebaldi et al., 2022; Terenzi & Benelli, 2021).

References

- ARAÚJO J., PEREIRA I.V., SANTOS J.D. (2023), "The Effect of Corporate Social Responsibility on Brand Image and Brand Equity and Its Impact on Consumer Satisfaction", *Administrative Sciences*, vol. 13, n. 5, pp. 118.
- ARMANI VALUES. (2024), *Persone, Pianeta, Prosperità*, Armani/Values. <https://armanivalues.com/it/>. [Accessed March 3, 2024]
- CASSIDY L. (2019), "Young Fashion Consumers: Influences, Attitudes, and Behaviours", In *Fashioning Markets: Entrepreneurship in Fashion* (pp. 123-142). Palgrave Macmillan, Cham.
- CECCOTTI F., VERNUCCIO M., PATRIZI M., BOCCALINI S., SCRIMIEMI C., PASTORE A. (2024), "Made in Italy values 'meet' sustainability: The E. Marinella case", *International Marketing Trends Conference, Ca' Foscari 18-10 January 2024, Venice*.
- CHEN Y.S. (2010), "The drivers of green brand equity: Green brand image, green satisfaction, and green trust", *Journal of Business Ethics*, vol. 93, pp. 307-319.
- DI MARIA E., BETTIOL M., CAPESTRO M. (2023), "How Italian fashion brands beat COVID-19: manufacturing, sustainability, and digitalization", *Sustainability*, vol. 15, n. 2, pp. 1038.
- FABIETTI L. (2015), Made in Italy: quando la moda guarda all'etica, *La Stampa*, n. 6.
- FERNQVIST F., OLSSON A., SPENDRUP S. (2015), "What's in it for me? Food packaging and consumer responses, a focus group study", *British Food Journal*, vol. 117, n. 3, pp. 1122-1135.
- GENNARI C. (2023), *Shein, Temu e gli altri: la corsa al ribasso della moda veloce*, Lab24. Il Sole 24 Ore. <https://lab24.ilsole24ore.com/fast-fashion-crescita-accuse-sostenibilita/#:~:text=L'inquinamento%20che%20fa%20tendenza,del%20totale%20a%20livello%20mondiale>. [Accessed March 3, 2024]
- GIBBS A. (1997), "Focus groups", *Social research update*, vol. 19, n. 8, pp. 1-8.
- GILLHAM B. (2005). *Research Interviewing: The range of techniques: A practical guide*. McGraw-Hill Education (UK).
- GRUBOR A., MILOVANOV O. (2016), Sustainable branding, *ENTRENOVA-ENTERPRISE RESEARCH INNOVATION*, vol. 2, n. 1, pp. 329-336.
- GUPTA S., CZINKOTA M., MELEWAR T.C. (2013), "Embedding knowledge and value of a brand into sustainability for differentiation", *Journal of World Business*, vol. 48, n. 3, pp. 287-296.
- HENNINGER C.E., ALEVIZOU P.J., OATES C.J. (2016), "What is sustainable fashion?", *Journal of Fashion Marketing and Management: An International Journal*, vol. 20, n. 4, pp. 400-416.
- JENKINS M., HARRISON K.S. (1990). "Focus groups: a discussion", *British Food Journal*, vol. 92, n. 9, pp. 33-37.
- KING N., HORROCKS C. (2010). *Interviews in Qualitative Research*, Sage, London.
- KOLK A. (2023), *Successful Greenwashing in Fashion Marketing. Marketing Campaigns*, Epi Produx. <https://epiprodux.com/blog/greenwashing-in-marketing/>. [Accessed March 4, 2024]
- KRUEGER R.A., CASEY M.A. (2009): Focus Groups: A practical guide for applied research, London: Sage.
- LAWLESS H.T., HEYMANN H. (2010). *Sensory evaluation of food: principles and practices*. Springer Science & Business Media.
- LUNDBLAD L., DAVIES I.A. (2016), "The values and motivations behind sustainable fashion consumption", *Journal of Consumer Behaviour*, vol. 15, n. 2, pp. 149-162.
- MCKINSEY & COMPANY (2021). *The State of Fashion 2021: In search of promise in perilous times*. <https://www.mckinsey.com/~media/mckinsey/industries/retail/our%20insights/state%20of%20fashion/2021/the-state-of-fashion-2021-vf.pdf>. [Accessed March 27, 2024]
- MENG M.D., LEARY R.B. (2021). "It might be ethical, but I won't buy it: Perceived contamination of, and disgust towards, clothing made from recycled plastic bottles", *Psychology & Marketing*, vol. 38, n. 2, pp. 298-312.
- MILANO FERRI F. (2024), *Perché le nuove leggi sulla sostenibilità non piacciono ai grandi brand*, Moda-Ultime notizie, Elle. <https://www.elle.com/it/moda/ultime-notizie/a46623724/moda-sostenibilita-leggi-2024/>. [Accessed March 4, 2024]
- MONTERO V. (2024), *Sfruttamento dei diritti umani nell'industria della moda*, The Green Side of Pink. <https://www.thegreensideofpink.com/style/moda/2024/sfruttamento-dei-diritti-umani-nel-settore-della-moda/>. [Accessed March 3, 2024]
- MORGAN D.L. (2002). "Focus group interviewing", *Handbook of interview research: Context and method*, vol. 141, pp. 159-169.
- MORTARA A., FRAGAPANE S. (2016), "Moda: made in Italy e sostenibilità, un connubio possibile?", *Rivista trimestrale di Scienza dell'amministrazione*, n. 4.
- NIINIMÄKI K. (2010), "Eco-clothing, consumer identity and ideology", *Sustainable development*, vol. 18, n. 3, pp. 150-162.
- PARGUEL B., BENOIT-MOREAU F., RUSSELL C.A. (2015), "Can evoking nature in advertising mislead consumers? The power of 'executional greenwashing'", *International Journal of Advertising*, vol. 34, n. 1, pp. 107-134.
- ROTH S., ROBBERT T. (2013, June). "Consumer sustainability orientation—development of a measurement instrument", In *Proceedings of the 42nd EMAC Conference 2013*.
- SANDER F., FÖHL U., WALTER N., DEMMER V. (2021), "Green or social? An analysis of environmental and social sustainability advertising and its impact on brand personality, credibility and attitude", *Journal of Brand Management*, vol. 28, pp. 429-445.
- STEWART A.L., NÁPOLES-SPRINGER A.M., GREGORICH S.E., SANTOYO-OLSSON J. (2007), "Interpersonal processes of care survey: patient-reported measures for diverse groups", *Health services research*, vol. 42, n. 3, pp. 1235-1256.
- TEBALDI L., BRUN A., BOTTANI E. (2022), "Evidences on sustainability issues in the Fashion Supply Chain: An empirical study in Italy", *Sustainable Production and Consumption*, vol. 33, pp. 651-663.
- TEMPERINI V., GREGORI G.L., PALANGA P. (2016), "The brand made in Italy: A critical analysis", *Management Studies*, vol. 4, n. 3, pp. 93-103.
- TERENZI B., BENELLI E. (2021), "Second life in sustainable fashion design. The contribution of Made in Italy", *PROJECT| Essays and Researches, A New Life for Landscape, Architecture and Design*, vol. 6, pp. 224-243.
- VALLERIANI I. (2022), *Gli italiani preferiscono i brand sostenibili: il sondaggio di Google*, Ninja. <https://www.ninja.it/gli-italiani-preferiscono-i-brand-sostenibili-il-sondaggio-di-google/#:~:text=Secondo%20il%20sondaggio%20IPSOS%202022,comportamento%20sostenibile%20di%20quest'ultimo>. [Accessed March 3, 2024].

Websites

<https://armanivalues.com/it/>
<https://lab24.ilsole24ore.com/fast-fashion-crescita-accuse-sostenibilita/#:~:text=L'inquinamento%20che%20fa%20tendenza,del%20totale%20a%20livello%20mondiale>
<https://epiprodux.com/blog/greenwashing-in-marketing/>
<https://www.elle.com/it/moda/ultime-notizie/a46623724/moda-sostenibilita-leggi-2024/>
<https://www.thegreensideofpink.com/style/moda/2024/sfruttamento-dei-diritti-umani-nel-settore-della-moda/>
<https://www.ninja.it/gli-italiani-preferiscono-i-brand-sostenibili-il-sondaggio-di-google/#:~:text=Secondo%20il%20sondaggio%20IPSOS%202022,comportamento%20sostenibile%20di%20quest'ultimo>
<https://www.mckinsey.com/~media/mckinsey/industries/retail/our%20insights/state%20of%20fashion/2021/the-state-of-fashion-2021-vf.pdf>

Drinking with eyes: how colors elicit consumers' taste expectations of coffee

DANIELE PORCHEDDU¹ RAFFAELE CAMPO² PIERFELICE ROSATO³ FABRIZIO PIU⁴

Abstract

Research on sensory marketing reveals that the interactions between sight and the other senses is particularly powerful. Specifically, this paper is focused on the role of colors and their impact in affecting consumers' taste expectations towards coffee. The researchers, by considering some previous studies, have presented 4 visual stimuli (white cup, orange-reddish cup, cream colored cup and red cup) and 5 different flavors (aroma intensity, creaminess, degree of caffeine, sweetness, degree of temperature), in a lab experiment involving 300 participants. By applying an inferential analysis, conducted through the one-way between subjects ANOVA, we found that red is the most indicated to arouse pre-conceptions of the aroma intensity, caffeine-content and temperature. Implications and limits are further discussed.

Key words: sensory marketing; consumers; coffee; colors; taste; vendor machine

Framing of the research. Scientific literature shows how research on the relationships between the senses and marketing is growing (Auvray and Spence, 2008), specifically, colors are relevant for food choice (Clydesdale, 1993), as well as beverages (Zellner and Durlach, 2003) and represent a relevant element which affect consumers' taste expectations (Spence, 2024). This is evident in some studies. Carvalho and Spence (2019), verified the role of cup color on perceived coffee taste, finding that pink (versus white) generated a sweeter perception and less acidity. Interestingly, Reinoso-Carvalho et al. (2017) demonstrated that beverages with different colors but same taste may stimulate different expectations, in particular their study was focused on beers. According to Koch and Koch (2003) colors create pre-concepts on taste. Specifically, they investigated the role of colors (red, green, blue, yellow, orange, brown, purple, grey, white and black) on soft drinks. In terms of results, red and orange were associated with sweet taste, white with salty taste, yellow and green with sour taste. Likewise, a connection emerged between yellow and orange to citrus taste, brown to syrup taste and red, orange, yellow to the fruity taste. no color was positively associated with the fizzy "taste". On the contrary, in terms of negative associations, there were the following results:

- the colors green, brown, gray and black were not associated with sweet taste;
- blue, red, white and black were not associated with sourness;
- red, blue, gray and white were not connected to bitterness;
- nine out of ten colors were not perceived as salty (except white);
- red and brown were not connected to citrus taste;
- grey, white and black were not linked to syrup taste;
- grey, white and black were not perceived as fruity;
- brown, red, black and gray were not linked to the fizzy taste of alcohol-free drinks.

As highlighted by Guéguen and Jacob (2014), the color of the container could influence the evaluation of drink. They carried on the following experiment: each participant was invited to enter a room and, on a table, they could find four identical cups, different exclusively for their color (blue, green, yellow and red). Furthermore, the room was subjected to constant temperature control, which had to remain at 23° C. In each cup the drink served - Colombian coffee - had to have a temperature of 40° C and between the various cups the portions of coffee had to be identical. The researchers found that the red cup was considered the one with the hottest drink, followed by yellow green and, finally, blue. The aforementioned results provided strong experimental support for the hypothesis that the color of the container can influence the perception of the temperature of a drink. They also proposed to increase the perceived heat of drinks by

¹ University of Sassari
e-mail: daniele@uniss.it.

² University of Bari Aldo Moro
e-mail: raffaele.campo@uniba.it.

³ University of Bari Aldo Moro
e-mail: pierfelice.rosato@uniba.it.

⁴ PhD
e-mail: fabrizio.piu@live.it.

using red cups, also considering the fact that this mechanism could reduce energy consumption and, therefore, the quantity of electricity consumed by bar managers and restaurants, consequently reducing some costs.

Another interesting experiment was organized by Risso et al. (2015). The experimental study indicated therein demonstrated that the color of a plastic glass can influence both the perception and the expectation of mineral water taste. The experiment was divided into different tests, each having a different focus but, in any case, constantly linked to the color of the container. The first was used to evaluate the aspects of pleasantness, freshness and lightness of the three types of mineral water considered, all through the use of specific visual analogue scales. For the aforementioned first test, the types of water used were: natural, lightly carbonated and carbonated. In addition, plastic cups with three different colors were used: white, red and blue. Through the experiment number two, expectations were analysed, taking into account only the color of the container, without the possibility to taste the liquid. With regards to the experiment number one it emerged that the sample perceived water as more carbonated if contained in a red or blue plastic glass, unlike what happened if it was contained in a white glass. Instead, with the second test it was demonstrated that the participants expected the sparkling water contained in a blue glass to be less carbonated than the same water contained in a red or white glass. Likewise, participants expected the water in a white glass to be cooler than that served in a red plastic glass.

Piqueras-Fiszman and Spence (2012) studied the impact of colors on the consumption of hot chocolate. Each individual involved had to drink four hot chocolates, which were contained in four glasses (different colors-same dimensions). The colors used were cream, in a dark variant, reddish-orange, white and red (colors were chosen because they are the most commonly used both in vending machines and on sale in shops). Results revealed that color of the glasses had a significant impact on the liking of hot drinks. Specifically, the intensity of the flavor of the drink was rated higher when the latter was served in a reddish-orange cup. However, cream-colored glasses were preferred for the aroma of chocolate and supported the perception of sweetness. Moreover, cream-color did not appear to be connected to bitterness.

Another study which inspired our experimental design is the one by Van Doorn et al. (2014), whose analysis was focused on coffee with milk. In particular, three cups were used, in three versions (transparent, white and blue) and different in materials. The experimentation was divided into two distinct, but still connected, tests. The first experimental test involved eighteen volunteers aged between 18 and 62: they had to consume 200 ml of milky coffee. Then, the participants were divided into three groups of six members each: the first group was given the white porcelain cup; the second was given the transparent glass cup; the last group was given the blue porcelain cup. Due to the small size of the sample considered for the first experiment, in order to avoid possible errors, it was decided to proceed with a second test. In experimental test number two it emerged that the type of cup used exerted a significant influence on the participants' evaluation of the perceived sweetness of the coffee and milk. This test involved thirty-six volunteers aged between 17 and 66 and they also had to drink 200 ml of milky coffee obtained by combining 135 ml of whole milk and 65 ml of coffee. Twelve people were given a glass cup with a white rubber band; twelve other people were given a glass cup with a blue rubber band; the last twelve adherents were given a clear glass cup.

The second test demonstrated that the milky coffee was perceived significantly as less sweet when served in the white cup. So, both experiments demonstrate that the color of a container can influence people's evaluations of the taste of a hot drink. In addition, in both studies, the statistically significant results concerned the use of the white cup. In this regard, as a possible reason, the possible effect given by the chromatic contrast between the color of the cup and that of the coffee was taken into account: indeed, the white cup could have influenced the perception of the brown of the milky coffee. As a consequence, it is possible to state that the color of the cups could influence the multisensory experience in force during the moment of consumption of hot drinks.

Finally, a relevant research was carried on by Maga (1974) whose study was aimed at understanding the possible interaction between colors and the four basic tastes through an experiment conducted with colored water. For the experimental test, the colors considered were red, green, yellow and colorless and the tastes were salty, sour, bitter and sweet. The "aqueous solutions" used for the research were made with agents such as sodium chloride, sucrose, citric acid and caffeine and the quantity of chemical substance was diluted with demineralized water which, depending on what was required by the different steps of the experiment, could be colorless or colored red, green or yellow by adding tasteless dyes. As a consequence of this study, Maga (1974) clearly demonstrated that color could influence the ability to distinguish the four basic tastes and, also, identify the psychological role in the association between foods and colors. Furthermore, Maga noted that the sample considered did not associate the yellow color with the sweet taste; green color led to an increased sensitivity to sweetness, while the red color did not influence it. On the other hand, both yellow and green decreased sensitivity with regards to sourness.

Purpose of the paper. Inspired by some studies, this research is aimed at shedding light to the role of colors for Italian consumers, with particular reference to coffee, whose consumption is a custom in Italy. For this reason, the researchers want to explore how colors can impact on taste expectations, with implications for those small firms that sell coffee (bars and cafeterias).

Methodology. This is a lab experiment involving 300 participants (199 females, 101 males). The visual stimuli was represented by images depicting a vending machine with a cup of coffee in the foreground.

The images used during the experiment were originated from an original image, appropriately modified for experimental purposes using computer graphics software. In order to have different versions, both the color and the container itself represented in the images were manipulated in the various experimental groups. This was the original visual stimulus:

Fig.1: The original stimulus



Source: <https://www.canteen.com>.

Continuing with the explanation of the use of the original real image, through Photoshop CS6, we proceeded to create four images “gemmed” from the real image. Each “gemmed” image differed from the original only in terms of the glass color; in terms of position, in each version the glass is in the foreground.

In particular, our visual stimuli (the glass) were 1) white, 2) orange-reddish color, 3) cream color and, finally, 4) red. These colors were selected on the basis of the experiment carried on by Piqueras-Fizman and Spence (2012). The participants were randomly assigned to one of the following 4 groups:

- Group n. 1 = people exposed to the image with the white cup;
- Group n.2 = people exposed to the image with the orange-reddish cup;
- Group n. 3 = people exposed to the image with the cream-colored cup;
- Group n. 4 = people exposed to the image with the red cup.

Then, every participant had to fill a short questionnaire. Each participant was asked to answer questions about:

- degree of aroma intensity attributed to the coffee (Q1);
- degree of creaminess attributed to the coffee (Q2);
- degree of sweetness attributed to the coffee (Q3);
- degree of caffeine attributed to the coffee (Q4);
- degree of temperature attributed to the coffee (Q5).

Every question was organized as a Likert-scale one, with scores from 1 to 7.

On the basis of previous studies, our hypothesis are:

Hp.1: The cream-colored disposable cup is the one that “conveys” the preconception of intensity of aroma of the coffee dispensed better than the others.

Hp.2: The color of the disposable cup has no bearing on the preconception of creaminess of the coffee dispensed.

Hp.3: The disposable cream-colored cup is the one that “conveys” the preconception of sweetness of the coffee dispensed better than the others.

Hp.4: The white disposable cup is the one that “conveys” the preconception of a high caffeine content in the coffee dispensed better than the others.

Hp.5: The red disposable cup is the one that “conveys” the preconception of the high temperature of the coffee dispensed better than the others.

In our experiment, the manipulated independent variable is represented by the color of the coffee cup illustrated on the image the participants were exposed to; the dependent variables, in addition, are represented by the ratings expressed on the Likert-scale by the participants.

It is fundamental to underline that the evaluations given by the participants were expressed in the same context and in the same conditions, except for the color of the cup of coffee in the foreground.

The evaluations expressed by the participants, then, were merged into a database and were subjected to a One-way between subjects ANOVA, considering the color of the disposable coffee cup as the between-subjects factor.

In the presence of a significant ANOVA we were led to think that at least one of the means referring to the experimental groups was significantly different from the others and it was necessary to proceed with post-hoc tests.

In particular, to identify which treatment modality (which color of the coffee cup) the significantly different medians referred to, we proceeded by comparing them two by two (pairwise comparison) by applying the Bonferroni method.

We used the software SPSS, v.17.0.

Fig.2: The colored cups



Source: Our elaboration with Photoshop

Result. First of all we have collected data about the average values of the evaluations expressed by the participants, which shows some differences

Table 1: Average values

Colors/Questions	Q1	Q2	Q3	Q4	Q5
White	4,27	4,28	3,87	4,25	5,04
Orange-reddish	4,47	4,08	3,79	4,12	4,69
Cream	3,84	4,10	3,92	3,90	4,32
Red	4,97	4,40	3,80	5,08	5,48

For each of the questions from Q1 to Q5, these are the results of the inferential analysis conducted through the one-way between subjects ANOVA:

- with reference to question Q1: we calculated a value of the statistic $F(3, 296)=6.084$; $p<0.01$; this test was therefore highly significant and the post hoc tests revealed, in pairwise comparisons, statistically significant differences between some levels of the treatment (the color of the disposable cup) about the ability to arouse the idea of aroma intensity in observers; in particular, the red color proved to be the best performing from the point of view of its ability to arouse pre-conceptions of the aroma intensity of the coffee dispensed;
- with regards to Q2, we calculated a value of the statistic $F(3, 296)=0.570$; this test was therefore not significant. We did not detect differences in the ability of the colors to “convey” the preconception of creaminess of the coffee dispensed;
- regarding question Q3: we calculated a value of the statistic $F(3, 296)=0.96$; this test was also not significant. Essentially, we found no differences in the ability of the colors to “convey” the preconception of the sweetness of the coffee dispensed;
- question Q4: we calculated a value of the statistic $F(3, 296)=7.527$; $p<0.01$; this test was therefore highly significant and the post hoc tests revealed, in pairwise comparisons, statistically significant differences between some levels of the treatment (the color of the disposable cup) in the ability to arouse the preconception of a high presence of caffeine in observers; in particular, the color red is the most associated one with the idea of caffeine. However, we did not find any differences between the remaining colors;
- finally, referring to question Q5: we found a value of the statistic $F(3, 296)=6.361$; $p<0.01$; this test was therefore highly significant and the post hoc tests revealed, in pairwise comparisons, statistically significant differences between some levels of the treatment (the color of the disposable cup used to serve the coffee) in the ability to “convey” the temperature preconception of the drink served at the observatories. In particular, the color red proved, from this point of view, to be the best performing among the colors compared.

For 3 questions out of 5 these differences were also statistically significant at the usual levels of first type error.

In particular:

1. with reference to the preconception of aroma intensity (see question Q1), the color of the best performing disposable cup was red; this result does not support Hp.1 (formulated on the basis of Piqueras-Fiszman and Spence, 2012).
2. regarding the preconception of creaminess (Q2), none of the colors compared seem to show an ability to “convey” this variable better than the others; this result is consistent with Hp.2 (formulated on the basis of Piqueras-Fiszman and Spence, 2012).
3. with reference to question Q3 (relating to the preconception of the sweetness of the coffee dispensed), equally, none of the colors compared seem to show an ability to “convey” this characteristic better than the others; this result does not support Hp.3 (formulated on the basis of Piqueras-Fiszman and Spence, 2012).
4. regarding question Q4 (referring to the preconception of caffeine contained in the coffee dispensed) the best performing color was red; this result does not support Hp.4 (formulated on the basis of the study by Van Doorn, Willemin and Spence, 2014).

5. finally, regarding question Q5 (referring to the preconception of temperature of the drink dispensed), the best performing color was, once again, red; Incidentally, this result is in line with Hp 5, which was formulated starting from the study by Guéguen and Jacob (2014).

Research limitations. The results just summarized were obtained during a laboratory study, in a “ceteris paribus” context in which several potential confounding variables were controlled.

These variables are so called because they are able to (potentially) affect the cause-effect relationships between the independent variable (in this case, the color of the cup) and the dependent variable of interest from time to time (we refer to the dimensions referred to questions Q1 to Q5 of our Questionnaire).

Given the experimental nature of our work, the degree of internal validity of our results can be considered high; however, there may be problems with the generalizability of the results of our study. In particular, the external validity of our results could be reduced by the non-representativeness of the sample of participants compared to the Italian population that uses coffee vending machines on a daily basis; other problems could arise from the “non-ecological” context in which the experimental task was carried out.

Managerial implications. We can affirm that the color of the disposable cup used to dispense coffee is capable of arousing preconceptions on the part of observers regarding a series of characteristics that we have examined. the results lead us to think that the color of the disposable cup chosen to dispense the coffee can significantly influence some preconceptions relating to the drink (we are referring, in particular, to dimensions such as the intensity of aroma, the caffeine content and the temperature of the drink).

In light of the above, those who manage automatic coffee vending machines should take into account that certain colors perform better than others, as long as they want to “convey” certain characteristics of the coffee being dispensed. The choice of color of the disposable cup therefore seems to influence preconceptions relating to some characteristics of the drink in question. Preconceptions, on the other hand, are important precursors of perceptions of product characteristics, influencing, albeit in probabilistic (and non-deterministic) terms, the processes of choice and repetition of purchases and consumption by customers.

To conclude, from our study it clearly emerges that the red color is the most appropriate for the disposable cup if you want to emphasize the dimension of the intensity of the coffee aroma and its temperature.

On the other hand, since red is the color most strongly associated with the idea of caffeine, it appears the least suitable when you have to dispense decaffeinated coffee through the vendor machine.

Originality of the paper. The original contribution of this paper is to apply three different studies to an Italian context, which needs more research on this kind of studies. Moreover, given that coffee is a rite in Italy, this is particularly relevant for catering firms.

References

- AUVRAY M., SPENCE C. (2008), “The multisensory perception of flavor”, *Consciousness and Cognition*, vol. 17, n. 3, pp. 1016-1031.
- CARVALHO F.M., SPENCE C. (2019), “Cup colour influences consumers’ expectations and experience on tasting specialty coffee”, *Food Quality and Preference*, vol. 75, pp. 157-169.
- CLYDESDALE F.M. (1993), “Color as a factor in food choice”, *Critical Reviews in Food Science and Nutrition*, vol. 33, n. 1.
- GUEGUEN., JACOB C. (2014), “Coffee cup color and evaluation of a beverage’s “warmth quality””, *Color Research and Application*, vol. 39, pp.79-81.
- KOCH C., KOCH E.C. (2003), “Preconceptions of Taste Based on Color”, *The Journal of Psychology: Interdisciplinary and Applied*, vol. 137, n. 3, p. 233.
- MAGA J. A. (1974), “Influence of color on taste thresholds”, *Chemical Senses and Flavor*, vol. 1, pp. 115-119.
- REINOSO-CARVALHO F., MOORS P., WAGEMANS J., SPENCE C. (2017), “The Influence of Color on the Consumer’s Experience of Beer”, *Frontiers in Psychology*, vol. 19, n. 8, 2205.
- RISSE P., MAGGIONI E., OLIVERO N., GALLACE A. (2015), “The association between the colour of a container and the liquid inside: An experimental study on consumers’ perception, expectations and choices regarding mineral water”, *Food Quality and Preference*, vol. 44, pp. 17-25.
- SPENCE C. (2024), “On the psychological effects of food color”, in *Handbook on Natural Pigments in Food and Beverages* (Second Edition, chapter 2), Industrial Applications for Improving Food Color, Woodhead Publishing Series in Food Science, Technology and Nutrition, pp. 33-60.
- VAN DOORM G.H., WUILLEMIN D., “Does the colour of the mug influence the taste of the coffee?”, *Flavour*, vol. 3, n.10.
- ZELLNER D.A., DURLACH P. (2003), “Effect of Color on Expected and Experienced Refreshment, Intensity, and Liking of Beverages”, *The American Journal of Psychology*, vol. 116, n. 4, pp. 633-647.

Aging and social influence: An empirical investigation of the effect of age on consumers' susceptibility to word of mouth*

ALESSANDRO M. PELUSO¹ ANTEA GAMBICORTI² GIOVANNI PINO³ MIHAELA GIANNELLI⁴

Abstract

The present research investigates the relationship between consumers' age and their susceptibility to word of mouth (WOM), that is, their tendency to rely on WOM in their purchase decision-making. Two empirical studies shed light on this relationship and explore a potential underlying mechanism involving consumers' sense of control. Study 1 (N = 450) shows that consumers at older ages feel a greater lack of control, and this feeling in turn increases their susceptibility to WOM. Study 2 (N = 150) provides further evidence for the central role of sense of control by showing that the aforementioned mediated relationship is stronger among consumers with a higher chronic desire for control, that is, those who are particularly motivated to pursue control over their lives and thus may perceive a significant decline in their sense of control due to aging. Interestingly, both the studies reveal a residual negative relationship between age and susceptibility to WOM, suggesting that the examined relationship may be complex and other mediators might intervene to explain why, in specific circumstances or for certain consumer segments, susceptibility to WOM might decrease, rather than increase, with age. Theoretical, policy, and practical implications are discussed.

Keywords: aging; older consumers; WOM; lack of control; consumer susceptibility; chronic desire for control

Framing of the research. Industrialized countries are witnessing a deep demographic transformation due to population's aging compared to a decline in birth rate (Drolet and Yoon, 2021; Guido, 2018). This demographic shift is leading to significant changes in the proportion of older individuals (i.e., those aged 65 and older; Amatulli et al., 2018; Berg and Liljedal, 2022) compared to other age groups (Laukkanen et al., 2007). For example, it is estimated that by 2050 the percentage of older individuals will make up 29% of the total population (PopulationPyramid.net, 2023). Consequently, this age group may become a relevant segment for companies (Kennett, Moschis, and Bellenger, 1995; Lambert-Pandraud, Laurent, and Lapersonne, 2005), which should thus consider attitudinal and behavioral differences across age groups. In parallel with this demographic transformation, information sources are growing more and more, with consumers being increasingly exposed to a wide range of marketing communications: from traditional advertising to interpersonal communications and user- or AI-generated content (Barreto, 2014; Longoni, Cian, and Kyung 2023). In this context, one aspect that is worth exploring is how aging affects consumers' use of information sources. For example, prior research suggests that, compared to their younger counterparts, older consumers are more conservative in their adoption of new communication channels. In contrast, young consumers are more likely to use the Internet for collecting information about products and services (Lopez and Sicilia, 2011). Furthermore, older consumers seem to prefer detailed messages with extensive information, while younger ones seem to prefer shallow messages that go straight to the point (Guido, 2018; Iyer, Yazdanparast, and Strutton, 2017).

Nonetheless, little is known about older consumers' susceptibility to word of mouth (WOM), namely, the extent to which they are persuaded by information about goods, services, and companies that is typically exchanged among consumers in both online and offline contexts (Westbrook, 1987). WOM is one of the most relevant sources of information in today's markets, with approximately 70% of consumption decisions being influenced by this type of communication

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¹ University of Salento, Lecce (Italy)
e-mail: alessandro.peluso@unisalento.it

² University of Salento, Lecce (Italy)
e-mail: antea.gambicorti@unisalento.it

³ University of Chieti-Pescara (Italy)
e-mail: giovanni.pino@unich.it

⁴ University of Salento, Lecce (Italy)
e-mail: mihaela.giannelli@unisalento.it

(Baltes, 2008). However, empirical evidence on how consumers differently react to WOM communications as a function of their age is mixed and inconclusive. For instance, Lopez and Sicilia (2011) state that age differences do not affect consumers' susceptibility to WOM, while East, Uncles, and Lomax (2014) support the idea that older consumers are less influenced by WOM due to their social isolation, which reduces their exposure to this form of communication. Instead, Iyer, Yazdanparast, and Strutton (2017) show that, compared to their younger counterparts, older consumers are more susceptible to WOM messages provided in their preferred communication modes, which are face-to-face and telephonic conversations; however, this difference could be partially overcome when WOM messages are communicated by a peer. Despite valuable, these preliminary findings seem inconclusive about the role of age in consumers' susceptibility to WOM. Therefore, the present research tries to fill this gap by exploring the psychological process underlying the relationship between consumers' age and their susceptibility to WOM.

Prior literature on aging and consumer behavior suggests that, as consumers age, they tend to strengthen their beliefs, thus increasingly relying on habits (Lambert-Pandraud, Laurent, and Lapersonne, 2005; see Guido, 2018, for a review), resisting innovations (Laukkanen, 2016), and expressing change aversion (Wallach and Kogan, 1961). As a result of this tendency, consumers at older ages are less inclined to change their mind and preferences, remaining loyal to their favorite brands (Lambert-Pandraud, Laurent, and Lapersonne, 2005). In general, this resistance to change might stem from older consumers' progressive deterioration of information processing capacity, due to a progressive decline in cognitive, physical, and relational abilities (Kennett, Moschis, and Bellenger, 1995). Considering these cognitive and behavioral patterns, it is feasible that older consumers (i.e., 65 years and older), compared to their younger counterparts, are more cautious in revising their beliefs and preferences and, consequently, less susceptible to information about products, brands, or companies that other people provide in the form of WOM (East, Uncles, and Lomax, 2014).

Despite the plausibility of this prediction, one more counterintuitive possibility is that consumers at older ages are more susceptible to WOM. As preliminary evidence for this possibility, research by the University of Cambridge's Dignity Project (Dignity Project, 2020) shows that consumers aged 65 years and older tend to rely more on WOM as a primary source of information. Consistent with this idea, Carrigan, Szmigin, and Wright (2004) found that, despite older consumers' perception of television and press as more reliable information sources, WOM from friends and family predominantly influences their purchasing behavior, especially in health and well-being (Gibler, Lumpkin, and Moschis, 1998). Taken together, these prior findings suggest that older consumers might be more susceptible to WOM. Yet, little is known about the potential mechanism underlying such a possible relationship. The current research hypothesizes that a possible mechanism is a decline in the sense of control, which may contribute to explaining why consumers at older ages may be more susceptible to WOM.

Sense of control is the belief that the events and the outcomes in life are the consequences of one's own actions (Mirowsky and Ross, 1989). This aspect has been described in the extant literature by using various definitions, such as internal locus of control (Rotter 1966), personal efficacy (Downey and Moen, 1987), personal autonomy (Seeman, 1983), and primary control (Heckhausen et al., 2010). Prior studies have documented a negative relationship between age and sense of control, so that individuals tend to lose their sense of control as they age (Heckhausen et al. 2010; Heckhausen and Farruggia, 2003; Lang and Heckhausen, 2001). Indeed, with aging, individuals' health and physical functioning deteriorate; thus, their perceived ability to control their lives and the surrounding environment decreases, generating greater challenges for such individuals and increasing their vulnerability (Heckhausen et al., 2010).

Lack of control typically leads individuals to engage in compensatory strategies to restore their sense of control (Beck et al., 2020; Landau, Kay, and Whitson, 2015; Peluso et al., 2017). For example, consumers experiencing a low sense of control tend to seek structured consumption (e.g., they prefer products with sharp edges) and show a preference for products that require a lot of personal effort (e.g., items for physical activity) to feel more competent in achieving desired results (Cutright, 2012; Cutright and Samper, 2014). Another interesting compensatory strategy implemented by individuals is described as "agentic shift", intended as "delegating" decision-making responsibility about their choices and behaviors to external sources, allowing others to decide for them (Fennis et al., 2012). Indeed, when individuals have a lower sense of control, they experience a higher need for input from others. In such a situation, they not only become more open to taking advice (Tost et al., 2012) but also tend to act according to what other individuals say (Fennis et al., 2012). Based on this reasoning, we hypothesize that consumers at older ages feel a greater lack of control, and this feeling increases their susceptibility to WOM. Thus, lack of control should serve as a mediator in the relationship between age and susceptibility to WOM, explaining why older consumers may become more open to social influence, in general, and to WOM communications, in particular.

Purpose of the paper. In this research, we explore the complex relationship between age and susceptibility to WOM. Based on prior literature on aging, consumer behavior, and sense of control, we hypothesize a two-faced relationship between age and susceptibility to WOM, which includes both a negative path (consumers at older ages are less susceptible to WOM) and a more intriguing, positive path mediated by control (consumers at older ages feel less in control and thus are more susceptible to WOM), which is the main focus of this research. We tested this relationship in two distinct studies. Specifically, Study 1 is designed to test whether consumers at older ages feel a lower sense of control, and this feeling, in turn, is associated with higher susceptibility to WOM. Then, Study 2 digs deeper into this control-based mechanism. Building on the notion that such a mechanism should be magnified among consumers who chronically seek to be in control over their environment (Burger, 1992; Peluso et al., 2017), Study 2 tests the moderating role of consumers' chronic desire for control (Burger, 1992), which is a personality trait that captures the extent to which individuals are generally motivated to control the events that happen in their lives (Burger and Cooper, 1979). Consistent with this

reasoning, Study 2's results show that, as consumers age, those with a higher (vs. lower) chronic desire for control experience a more pronounced perception of lack of control and, consequently, an increased susceptibility to WOM.

Study 1: Methodology. Four hundred fifty consumers ($M_{Age} = 49.27$, $SD_{Age} = 20.44$, 227 males) were recruited in a mid-sized Italian city to participate in a survey study during Fall 2019 and Winter 2020. Data were collected by three trained interviewers blind to the study's goal. Although the interviewers adopted a convenience sampling procedure, allowing respondents to participate in the study on a voluntary basis, the data set adequately covered all ages (age range: 18-96 years). After some filler questions (e.g., "How many times in a week do you go to the supermarket?"), the participants were asked to complete a three-item seven-point Likert scale drawn from Ferguson and Goodwin (2010) to assess respondents' perceived lack of control (e.g., "I often feel that most situations are out of my control"; 1 = strongly disagree, 7 = strongly agree). Subsequently, they were asked to indicate their susceptibility to WOM by answering three items (e.g., "How much do you rely on advice and opinions of others when making purchases?"), which were adapted from Iyer and Mitch (2021) and assessed on a seven-point rating scale (1 = not at all, 7 = very much). Finally, the participants provided data about their gender (0 = male, 1 = female), year of birth, education level (1 = less than high school, 2 = high school diploma, 3 = bachelor's degree, 4 = master's degree or higher), and income level (1 = less than €20,000, 2 = €20,000 - €39,999, 3 = €40,000 - €59,999, 4 = €60,000 - €79,999, 5 = €80,000 - €100,000, 6 = over €100,000).

Study 1: Results. The three items assessing perceived lack of control ($\alpha = 0.80$) and the three items assessing susceptibility to WOM ($\alpha = 0.91$) were combined to constitute two aggregated measures of the respective constructs (lack of control: $M = 3.78$, $SD = 1.46$; susceptibility to WOM: $M = 3.32$, $SD = 1.46$). Then, we estimated a mediation model using the PROCESS SPSS Macro (Model 4) by Hayes (2022), in which susceptibility to WOM served as the dependent variable, lack of control was the mediator, and age was the independent variable. Therefore, we first regressed lack of control on age. The results revealed a significant positive relationship between these two variables ($b = 0.009$, $p = 0.005$), suggesting that older consumers experience a greater lack of control. Then, we regressed susceptibility to WOM on lack of control, controlling for age. The results showed a significant positive relationship between lack of control and susceptibility to WOM ($b = 0.194$, $p < 0.001$), suggesting that consumers who feel less in control rely more on WOM. Interestingly, the analysis also showed a significant negative relationship between age and susceptibility to WOM ($b = -0.020$, $p < 0.001$), which was compatible with the two-faced nature of the relationship between these two constructs. To test the predicted mechanism based on control, we estimated the indirect effect of age on susceptibility to WOM via lack of control, which was positive and significant ($b = 0.002$, 95% confidence interval [CI] = 0.0004, 0.0037). Repeating the analysis by adding gender, education level, and income levels as covariates did not change our substantive results.

Overall, this study's results support the idea that older consumers are more susceptible to WOM, and this age-related effect is driven by a reduced sense of control. This study sheds light on the complex relationship between age and consumer susceptibility to WOM. More specifically, this positive control-mediated path competes with a negative path, whereby consumers at older ages may be less susceptible to WOM, likely due to an overreliance on their beliefs and preferences. In the subsequent study, we dig deeper into the positive path by exploring the moderating role of chronic desire for control in the relationship between age and lack of control. However, we acknowledge that the negative path also deserves further investigation (an exploration of possible mechanisms underlying this negative path is currently in progress).

Study 2: Methodology. This study is designed to provide converging evidence for the central role of sense of control in the relationship between age and susceptibility to WOM, by testing whether the control mechanism is magnified among consumers with a higher chronic desire for control. More specifically, in this study, we used a completely different sample from that employed in Study 1 to show that older consumers perceive a greater lack of control and, consequently, are more susceptible to WOM. However, this perception is stronger among those who chronically desire to be in control over their environment as compared to those with lower levels of this desire. To this end, one hundred fifty consumers ($M_{Age} = 51.35$, $SD_{Age} = 22.08$, 67 males) were recruited in a mid-sized Italian city to participate in a survey study during Spring 2022. Data were collected by a trained interviewer blind to the study's goal, using the same sampling procedure as in Study 1 to cover all ages (age range: 20-90 years). The questionnaire used the same measures as in Study 1, plus a three-item measure of chronic desire for control drawn from Peluso et al. (2017) and assessed on a seven-point Likert scale (e.g., "I enjoy having control over my own destiny", 1 = strongly disagree, 7 = strongly agree).

Study 2: Results. We averaged the scores of the three items assessing chronic desire for control ($\alpha = 0.73$), the three items assessing lack of control ($\alpha = 0.77$), and the three items assessing susceptibility to WOM ($\alpha = 0.93$) to constitute aggregate measures of the respective constructs (chronic desire for control: $M = 5.65$, $SD = 1.20$; lack of control: $M = 3.70$, $SD = 1.36$; susceptibility to WOM: $M = 3.44$, $SD = 1.47$). Then we estimated a moderate mediation model (Model 7 in the PROCESS SPSS Macro; Hayes, 2022), in which susceptibility to WOM was the dependent variable, lack of control served as mediator, age was the independent variable, and chronic desire for control was the moderator of the relationship between the independent variable and the mediator. We first regressed lack of control on age, chronic desire for control (mean-centered), and their interaction. The results revealed a significant positive effect of age ($b = 0.024$, p

< 0.001), confirming what emerged in Study 1, and a significant positive effect of chronic desire for control ($b = 0.209$, $p = 0.014$). More importantly, the analysis revealed an interaction effect of age and desire for control on lack of control ($b = 0.008$, $p = 0.088$). Despite its marginal significance, we decomposed this interaction effect by estimating the effect of age on lack of control at lower ($M - 1SD$) and higher ($M + 1SD$) levels of the moderator. As expected, the effect of age on lack of control was marginally significant for consumers low in chronic desire for control ($b = 0.015$, $p = 0.052$) and significant and stronger for those high in this individual characteristic ($b = 0.033$, $p < 0.001$). Subsequently, we regressed susceptibility to WOM on lack of control by controlling for age. The results revealed a significant positive relationship between lack of control and susceptibility to WOM ($b = 0.358$, $p < 0.001$), and a significant negative relationship between age and susceptibility to WOM ($b = -0.014$, $p = 0.019$). Finally, we estimated the indirect effect of the interaction term (age $\times$ chronic desire for control) on susceptibility to WOM via lack of control, which was significant at a 90% level (index of moderated mediation: $b = 0.003$, 90% CI = 0.0001, 0.006). The indirect effect of age on susceptibility to WOM via lack of control, estimated for those with a lower chronic desire for control ($M - 1SD$; $b = 0.005$, 95% CI = 0.0002, 0.011), and the same effect, estimated for those with a higher desire for control ($M + 1SD$; $b = 0.012$, 95% CI = 0.004, 0.022), were both significant, yet the latter was more than double the former in size. Adding gender, education level, and income levels as covariates in the model did not change our substantive results. Despite the marginal significance of the index of moderated mediation and the related conditional indirect effects, taken together this study's results are compatible with our theorizing and thus provide further support to it.

Research limitations. The present research encompasses three main limitations that provide opportunities for future studies. First, it provides preliminary evidence for the central role of sense of control in the complex relationship between age and susceptibility to WOM, by demonstrating that older consumers feel less in control and, as a result of this feeling, are more influenceable by external information provided by others in the form of WOM. Coherently with our reasoning, the central role of sense of control is magnified among those who put high importance on their own ability to control the environment out of a chronic desire to do so. Importantly, our two studies provide evidence that the relationship between age and susceptibility to WOM is a complex one since it seems to be driven by two competing mechanisms that operate in the opposite direction. Therefore, to shed further light on this relationship, future studies could explore other potential mediators (e.g., social isolation, cognitive rigidity; East, Uncles, and Lomax, 2014) that might elucidate the mechanism underlying the residual negative relationship between age and susceptibility to WOM, which has received relatively little attention in the present research. Secondly, our two studies focused on Italy. Even if this country represents an ideal setting, as the Italian population is aging at an increasing pace due to a rise in life expectancy and a reduced fertility rate (Italian National Institute of Statistics, 2022), future studies could try to generalize our findings to other countries. Thirdly, we acknowledge that surveys allow a partial understanding of consumers' attitudes and behaviors because of the correlational nature of data. Future studies could adopt experimental techniques to establish cause-effect relationships among the variables of interest. Such experimental techniques might be useful to test the effectiveness of potential interventions aimed at making older consumers feel more in control, thus mitigating their susceptibility to WOM and, by extension, to external social influence.

Managerial implications. Our results provide relevant insights for companies and policymakers. For companies, older consumers represent an important marketing segment, due to their higher disposable income compared to young consumers and their substantial presence in the population (Drolet and Yoon, 2021). Therefore, it becomes of interest to advance our understanding of how older consumers behave in the market (Amatulli et al., 2018). Our results revealed that consumers at older ages may be more susceptible to WOM. This suggests that companies may rely on this form of interpersonal communication to inform older consumers about their products and services, in addition to relying on traditional communication tools, such as newspapers and television. However, the psychological mechanism of lack of control that drives older consumers' higher susceptibility to WOM raises important questions related to their potential vulnerability to persuasive attempts in the form of offline and online messages, with implications in terms of their capability of recognizing deception and untruthful information (Guido, 2018). In this respect, this research sheds initial light on potential drawbacks deriving from older consumers' lack of control and susceptibility to external information. Companies and policymakers should consider such drawbacks to develop policies that can help older consumers feel more in control.

Originality of the paper. To the best of our knowledge, the present research represents the first attempt to understand the mechanisms underlying the complex relationship between age and consumers' susceptibility to WOM. Although prior literature suggests a seemingly negligible relationship between these two constructs (e.g., Lopez and Sicilia, 2011), the present research is the first to introduce the idea that susceptibility to WOM may significantly vary with consumers' age. This phenomenon has been previously overlooked because its outward nonsignificant relationship; however, this research indicates that it is instead characterized by two mechanisms that operate in the opposite direction. Consistent with this idea, our findings provide preliminary, yet promising, evidence that this relationship incorporates potentially competing mechanisms that may lead older consumers to be differently susceptible to WOM and social influence in general, depending on individual and contextual factors. On one hand, our findings demonstrate that the positive effect of age on susceptibility to WOM is driven by perceived lack of control, which pushes them to rely more on external information. Thus, we clarify the role of sense of control, by contributing to the literature on aging and social influence. On the other hand, our findings hint at the possibility that, parallel to this positive mechanism, there are other intervening factors that might explain the residual negative relationship between age and susceptibility to WOM, paving the way for further exploration of the relationship between these two variables and contributions to the growing literature on the so-called silver economy (e.g., Colurcio, Vigolo, and Edvardsson, 2022).

References

- AMATULLI C., PELUSO A.M., GUIDO G., YOON C. (2018), "When feeling younger depends on others: The effects of social cues on older consumers", *Journal of Consumer Research*, vol. 45, n. 4, pp. 691-709.
- HAYES A.F. (2022), *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*, Guilford, New York.
- BALTER D. (2008), *The word of mouth manual*, vol. 2. Bzz Pubs, Boston.
- BARRETO A.M. (2014), "The word-of-mouth phenomenon in the social media era", *International Journal of Market Research*, vol. 56, n. 5, pp. 631-654.
- BECK J.T., RAHINEL R., BLEIER A. (2020), "Company worth keeping: Personal control and preferences for brand leaders", *Journal of Consumer Research*, vol. 46, n. 5, pp. 871-886.
- BERG H., LILJEDAL K.T. (2022), "Elderly consumers in marketing research: A systematic literature review and directions for future research", *International Journal of Consumer Studies*, vol. 46, pp. 1640-1664.
- BURGER J.M. (1992), *Desire for control: Personality, social, and clinical perspectives*, Plenum, New York.
- BURGER J.M., COOPER H.M. (1979), "The desirability of control", *Motivation and Emotion*, vol. 3, n. 4, pp. 381-393.
- CARRIGAN M., SZMIGIN I., WRIGHT J. (2004), "Shopping for a better world? An interpretive study of the potential for ethical consumption within the older market", *Journal of Consumer Marketing*, vol. 21, n. 6, pp. 401-417.
- COLURCIO M., VIGOLO V., EDVARDSSON B. (2022), "Fifty years of research on silver economy: A bibliometric analysis", *Sinergie – Italian Journal of Management*, vol. 40, n. 3, pp. 149-171.
- CUTRIGHT K.M. (2012), "The beauty of boundaries: When and why we seek structure in consumption", *Journal of Consumer Research*, vol. 38, n. 5, pp. 775-790.
- CUTRIGHT K.M., SAMPER A. (2014), "Doing it the hard way: How low control drives preferences for high-effort products and services", *Journal of Consumer Research*, vol. 41, n. 3, pp. 730-745.
- DOWNEY G., MOEN P. (1987), "Personal efficacy, income, and family transitions: A longitudinal study of women heading households", *Journal of Health and Social Behavior*, vol. 28, pp. 320-333.
- DROLET A., YOON C. (Eds.) (2021), *The aging consumer: Perspectives from psychology and marketing*, Routledge, New York.
- EAST R., UNCLES M.D., LOMAX W. (2014), "Hear nothing, do nothing: The role of word of mouth in the decision-making of older consumers", *Journal of Marketing Management*, vol. 30, n. 7-8, pp. 786-801.
- FENNIS B.M., AARTS H. (2012), "Revisiting the agentic shift: Weakening personal control increases susceptibility to social influence", *European Journal of Social Psychology*, vol. 42, n. 7, pp. 824-831.
- FERGUSON S.J., GOODWIN A.D. (2010), "Optimism, and well-being in older adults: The mediating role of social support and perceived control", *International Journal of Aging and Human Development*, vol. 71, n. 1, pp. 43-68.
- GIBLER K.M., LUMPKIN J.R., MOSCHIS G.P. (1998), "Making the decision to move to retirement housing", *Journal of Consumer Marketing*, vol. 15, n. 1, pp. 44-54.
- GUIDO G. (2018), *Il comportamento di consumo degli anziani. Effetti per le strategie di marketing delle imprese*, Il Mulino, Bologna.
- HECKHAUSEN J., FARRUGGIA S.P. (2003), "Developmental regulation across the life span: A control-theory approach and implications for secondary education", *BJEP Monograph Series II, Number 2-Development and Motivation*, vol. 85, n. 102, pp. 85-102. British Psychological Society.
- HECKHAUSEN J., WROSCHE C., SCHULZ R. (2010), "A motivational theory of life-span development", *Psychological Review*, vol. 117, n. 1, 32.
- IYER P., YAZDANPARAST A., STRUTTON D. (2017), "Examining the effectiveness of WOM/eWOM communications across age-based cohorts: Implications for political marketers", *Journal of Consumer Marketing*, vol. 34, n. 7, pp. 646-663.
- IYER R., MITCH G. (2021), "Modeling word of mouth: A replication", *Journal of Business Research*, vol. 126, pp. 512-523.
- KENNETT P.A., MOSCHIS G.P., BELLENGER D.N. (1995), "Marketing financial services to mature consumers", *Journal of Services Marketing*, vol. 9, n. 2, pp. 62-72.
- LAMBERT-PANDRAUD R., LAURENT G., LAPPERSONNE E. (2005), "Repeat purchasing of new automobiles by older consumers: Empirical evidence and interpretations", *Journal of Marketing*, vol. 69, n. 2, pp. 97-113.
- LANDAU M.J., KAY A.C., WHITSON J.A. (2015), "Compensatory control and the appeal of a structured world", *Psychological Bulletin*, vol. 141, n. 3, pp. 694-722.
- LANG F. R., HECKHAUSEN J. (2001), "Perceived control over development and subjective well-being: Differential benefits across adulthood", *Journal of Personality and Social Psychology*, vol. 81, pp. 509-523.
- LAUKKANEN T. (2016), "Consumer adoption versus rejection decisions in seemingly similar service innovations: The case of the Internet and mobile banking", *Journal of Business Research*, vol. 69, n. 7, pp. 2432-2439.
- LAUKKANEN T., SINKKONEN S., KIVIJÄRVI M., LAUKKANEN P. (2007), "Innovation resistance among mature consumers", *Journal of Consumer Marketing*, vol. 24, n. 7, pp. 419-427.
- LONGONI C., CIAN L., KYUNG E.J. (2023), "Algorithmic transference: People overgeneralize failures of AI in the government", *Journal of Marketing Research*, vol. 60, n. 1, pp. 170-188.
- LOPEZ M., SICILIA M. (2011), *The impact of e-WOM: Determinants of influence*. In *Advances in Advertising Research*, vol. 2, Breaking New Ground in Theory and Practice, pp. 215-230, Wiesbaden: Gabler.
- MIROWSKY J., ROSS C.E. (1989), *Social causes of psychological distress*, Aldine, New York.
- PELUSO A.M., BONEZZI A., DE ANGELIS M., RUCKER D.D. (2017), "Compensatory word of mouth: Advice as a device to restore control", *International Journal of Research in Marketing*, vol. 34, pp. 499-515.
- ROTTER J.B. (1966), "Generalized expectancies for internal vs. external control of reinforcements", *Psychological Monographs* vol. 80, pp. 1-28.
- SEEMAN M. (1983), "Alienation motifs in contemporary theorizing", *Social Psychology Quarterly*, vol. 46, pp. 171-84.
- TOST L.P., GINO F., LARRICK R.P. (2012), "Power, competitiveness, and advice taking: Why the powerful don't listen", *Organizational Behavior and Human Decision Processes*, vol. 117, n. 1, pp. 53-65.

- WALLACH M.A., KOGAN N. (1961), "Aspects of judgment and decision making: Interrelationships and changes with age", *Behavioral Science*, vol. 6, n. 1, pp. 23–36.
- WESTBROOK R. A. (1987), "Product/consumption-based affective responses and postpurchase processes", *Journal of Marketing Research*, vol. 24, n. 3, pp. 258-270.

Websites

- ITALIAN NATIONAL INSTITUTE OF STATISTICS (2022), Storia demografica dell'Italia dall'Unità a oggi. https://webpub.istat.it/sites/default/files/pdf/Storia_demografica_Italia_4.pdf. Accessed 14 February, 2024.
- DIGNITY PROJECT (2020), Survey data about digital characteristics. https://www.inclusivedesigntoolkit.com/tools_surveys/#datasets. Accessed 14 February, 2024.
- POPULATIONPYRAMID.NET (2023), Population Pyramids of the World from 1950 to 2100. https://www.populationpyramid.net/europe/2050/#google_vignette. Accessed 19 February, 2024.

The rise of Phygital Reality: insights from Structural Topic Modelling

DANIELE VIRGILLITO¹ FRANCESCO RUSSO² ALESSIA MUNNIA³ MARCO ROMANO⁴

Abstract

Latest technological advancements enabled to go beyond digitalisation, offering opportunities to combine physical and digital realities in a hybrid phygital one, with the potential to disrupt several activities. The aim of this work is to conduct an explorative literature review on the emerging topic of phygital reality. We employed Structural Topic Modelling, a text mining methodology, to analyse data retrieved from Web of Science and Scopus databases. The analysis led to the identification of seven thematic areas that allow to gain a broad understanding of phygital applications in different contexts: (1) Metaverse, (2) Health Technology, cultural heritage and gaming, (3) Fashion & Luxury, (4) Customer experience, (5) Education, (6) Tourism, (7) Retail experience. The study provides some clarity on the exploitation opportunities of phygital reality and identifies a gap concerning the phygital applications to enhance social inclusion toward some disadvantaged and marginalised segments, thus providing insights on business opportunities to fill this gap.

Key words: *phygital, text mining, structural topic modelling, social inclusion*

Framing of the research. *Covid-19 pandemic led consumers worldwide engage in exercise, shopping and socialisation activities from their own homes, thus accelerating an already existing trend. These habits partially survived even after the acute phase of pandemic had passed, encouraging the development of a “phygital reality” (Schneider, 2021).*

The phygital combines two types of realities: the traditional physical one and the digital one (Mele et al., 2023). The term describes the social interactions taking place at the intersection between physical and digital contexts (Mele & Russo-Spena, 2022) based on the combination of physical and digital contents (Gelsomini et al., 2021). Phygital experience originally dealt with retail, but it was subsequently developed in fashion and banking industry (Ballina et al., 2019). Phygital is however an overarching phenomenon that leverages technological breakthroughs in the field of computing, artificial intelligence, augmented reality and virtual reality to transform many of our daily activities, from work and study to travel and entertainment, toward the integration of virtual environments in real life. Research on this topic is still in its infancy and embraces different fields. The aim of this work-in progress study is to review existing literature on phygital applications by applying structural topic modelling (STM) methodology, in order to make some clarity on the main research streams and identify some gaps to be filled by future research. The remaining of the manuscript is organised as follows: a methodology section represents the main steps taken collect data and conduct the STM analysis, a results section presents and discusses the main topics identified, and eventually we highlight the limitations, managerial implications and the originality of our work.

Methodology. *We retrieved all the papers pertaining to the subject of interest by searching for the term “phygital” in the Web of Science and Scopus databases. Both searches were limited to works published only in English, with no specific time frame. There were 324 records retrieved in total. We decided not to restrict the search to a specific publication type because, given the exploratory nature of the study and the novelty of the topic, it was deemed appropriate to be as inclusive as possible at this stage of the research.*

Next, we used KNIME Analytics to carry out the text mining procedures, implementing the standard stages of text pre-processing on the extracted abstracts (Tursi & Silipo, 2018). Initially, we removed the repeated entries, resulting in a final sample size of 196 observations. Next, we eliminated stop words and non-descriptive words based on their low word frequency, and then we used the Kuhlen Stemmer. Ultimately, we constructed the bag of words by taking into account all the individual words and the most occurring bi-grams.

¹ University of Catania
e-mail: daniele.virgillito@unict.it

² University of Catania
e-mail: francesco.russo@phd.unict.it

³ University of Catania
e-mail: alessia.munnia@phd.unict.it

⁴ University of Catania
e-mail: romanom@unict.it

In order to get the main themes that may effectively summarise the content of the 196 abstracts, we used the Structural Topic Modelling (STM) approach developed by Roberts et al. (2019). STM, like the Latent Dirichlet Allocation (LDA) model introduced by Blei et al. (2003), enables the summarization of a collection of texts into a set of themes. Each topic is described by a list of terms, and each document is assigned a probability of belonging to each subject (Blei et al., 2003). In LDA, it is believed that all documents have the same distribution of themes (topic prevalence). On the other hand, in Structural Topic Modelling (STM), each document is estimated to have a unique distribution of topics, and the model also allows for correlation between topics. When determining the best number of topics, four factors may be taken into account: exclusivity, semantic coherence, held-out likelihood, and residual variance. In our scenario, exclusivity implies that the best answer is achieved by selecting between 6 and 11 topics. Semantic coherence is achieved with fewer than 7 topics. The held-out probability is achieved with between 6 and 11 topics. The residual variance is around 13 topics. Next, we assessed three potential options for subjects: 6, 7, and 8. Ultimately, we chose the second option since it was simpler to read and had less instances of overlapping themes in terms of their real significance.

Results. The table below provides a concise summary of the subjects and keywords that have been identified.

Table 1: Identified topics and keywords

Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6	Topic 7
business	data	consumer	brand	development	approach	behavior
concept	design	customer	consumer	digital	art	customer
digital	digital	customer-experience	consumption	education	cultural	dimension
emerg	game	design	experience	educational	digital	experience
future	information	engagement	fashion	generation	experience	play
metaverse	interaction	experience	luxury	learn	innovation	positive
potential	physical	journey	online	proces	museum	retail
technology	robot	market	product	student	social	service
virtual	space	physical-digital	retail	support	tool	store
world	system	strategy	strategy	teacher	tourism	technology

The following subsections provide a discussion of the identified topics.

Topic 1: Metaverse

The convergence of physical and digital realms, commonly known as “phygital”, has received significant scholarly attention in recent literature, particularly regarding its integration with the expanding concept of the metaverse (Omarali, 2023). As a result, new mechanisms of value creation and capture at the intersection of physical and virtual economies emerge in the metaverse (Mancuso et al., 2023). Technological developments are expected to introduce a new organization to physical and virtual socio-spatial relations, as well as new socio-technological groups (Hamurcu, 2022).

The new human dynamics will be a seamless integration of both physical and digital realms, known as phygital (Sui & Shaw, 2022). The pandemic has accelerated the shift towards phygital marketing, with social media and e-commerce playing a crucial role (Silvia et al., 2023). Scholars have explored various applications of this integration across different domains, including retail. Particularly, they have focused on an innovative approach to consumer behaviour (Johnson & Barlow, 2021; Silva & Cachinho, 2021). Existing literature emphasizes the transformative potential of using the metaverse to enhance user engagement and interaction by adding digital overlays to physical spaces (Chrétien-Ichikawa, 2022; Ioannidis & Kontis, 2023; Tse & Pun, 2024). It explores the hybridization of marketing tools, including phygital omnichannel promotion and contactless sales across new digital frontiers. Additionally, it examines the implementation of the empirical concept in world trade activities (Nozdreva et al., 2023); research has shown how retailers can use the metaverse to create immersive shopping experiences that combine digital product visualization with physical store environments, potentially transforming the retail industry (Mengalli et al., 2023). In addition to the need to measure how customers find, interact with, and consume content and images, the metaverse ecosystem has identified the need to optimize relationships with consumers in order to mitigate purchase difficulty gaps (Davies et al., 2024; Mengalli et al., 2023). Furthermore, the education sector has recognized the potential of the metaverse to facilitate immersive learning environments where students can engage with educational content in a dynamic and interactive manner, such as in a game (Aydoğdu et al., 2021; Guga, 2015). Likewise, the entertainment industry is at the leading edge of embracing digital metaverse experiences, allowing users to participate in interactive stories beyond the boundaries of traditional media (Del Vecchio et al., 2023; Giovannini & Bono, 2023; Russo et al., 2024). A number of studies highlight that these integrations are capable of transforming industries such as retail, entertainment, education, healthcare, etc (Terenzi & Vignati, 2021). While the literature acknowledges the myriad opportunities presented by phygital metaverse applications, it also highlights several challenges and considerations. Concerns about privacy, ethical implications, and technological limitations emerge as critical factors that warrant the attention of the scientific community.

Topic 2: Health Technology, cultural heritage and gaming

Researchers have investigated various applications of phygital technologies, including wearable devices, remote monitoring systems, augmented reality (AR) and virtual reality (VR) interventions (Bini et al., 2023) related to healthcare industry. These technologies have the potential to transform healthcare delivery by improving patient engagement, enabling personalized interventions, and optimizing clinical workflows. The convergence of virtual, augmented, mixed,

and extended reality, mobile tools, the Internet of Things, and artificial intelligence has enabled the growing symbiosis between human spaces and computers. This is leading to the emergence of mixed physical and digital ecosystems that will have a transformational impact on people's lives (Gaggioli et al., 2023).

The potential role that phygital systems could play in enhancing mental health and well-being is still under investigation (Spitale et al., 2019). By simulating realistic healthcare scenarios and providing immersive experiences, these technologies can enhance learning outcomes, improve patient comprehension of complex medical concepts, alleviate pain and anxiety during medical procedures, and support people with intellectual disabilities (Gelsomini et al., 2021). Wearable devices equipped with biometric sensors allow for real-time monitoring of vital signs and health parameters, which can facilitate early detection of health issues and empower individuals to proactively manage their well-being (Gennari et al., 2023; Sayem et al., 2023; Schiavi et al., 2023). The literature emphasizes the significance of human-centered design principles and interdisciplinary collaboration in developing effective phygital healthcare solutions (Barresi et al., 2023). By integrating insights from fields such as human-computer interaction and psychology, researchers can design intuitive and user-friendly interfaces that enhance usability and acceptance among healthcare providers and patients alike (Gelsomini et al., 2021).

Research in this topic has explored the potential of phygital gaming experiences to engage audiences with cultural heritage artifacts, sites, and narratives, linking health, heritage, and gaming, discovering the transformative effects of such experiences (Andrade & Dias, 2020; Cirafici et al., 2022). The integration of augmented reality, virtual reality, and mixed reality (MR) with gaming platforms allows users to explore virtual reconstructions of historical sites, interact with digitized artifacts, and participate in narrative-driven experiences that bring the past to life (Bollini, 2022; Borsotti, 2022; Marra et al., 2023; Turco & Giovannini, 2020), especially those that are inaccessible due to restoration work (Hallot et al., 2021). AR can provide additional layers of information to support physical exhibitions while also extending the knowledge produced beyond the art gallery's boundaries.

This highlights the immersive qualities of extended reality technologies and the phygital future that is emerging in the exhibition space (Brusaporci & Maiezza, 2021; Crossley et al., 2023). Researchers have explored the role of phygital gaming in fostering cultural understanding, empathy, and appreciation among diverse audiences. This transcends geographical and temporal boundaries, facilitating meaningful connections with heritage resources (Prajapati & Das, 2023). Moreover, the literature emphasizes the significance of collaborative and participatory approaches in developing phygital gaming experiences. This involves engaging stakeholders, such as cultural institutions, game developers, scholars, and community members, in the co-creation process (Lupetti et al., 2018; Piumatti et al., 2017; Praticò et al., 2019).

Topic 3: Fashion & Luxury

Phygital retailing blends the physical and digital worlds to create unique customer experiences. Papers included in this topic have examined how luxury fashion brands are using phygital approaches to create immersive and cohesive brand experiences that seamlessly integrate physical and digital touch points. While the applications of phygital retailing are on the rise, there is still a lack of understanding of what factors can influence customer experience, particularly hedonic factors (Banik & Gao, 2023). Through initiatives such as virtual fashion shows and interactive digital installations, brands can extend their reach beyond traditional brick-and-mortar stores and engage global audiences in innovative ways. With the increase in consumers' online and offline interactions, there is a greater need for marketers to prompt integrated customer experiences. This can be achieved through online and offline interactions (Lee et al., 2023). Phygital marketing is characterized by its focus on the quality of consumer experiences, but few papers have explored how neuroscience can be used to study these experiences (Johnson & Barlow, 2023). Additionally, the literature emphasizes the importance of phygital technologies in enhancing the exclusivity and desirability of luxury fashion products. These technologies enable brands to provide personalized and customized experiences that appeal to affluent consumers (Jacob et al., 2023). Some research questions explore how human interactions with experienced salespeople contribute to the value of the phygital experience (Samy Soliman & Erakat, 2023). Omnichannel retailing has transformed retailers' strategies for engaging customers in making purchase decisions (Mikheev et al., 2021). Contemporary luxury marketing literature addresses the research gap by explaining the role of phygital functionality in enhancing relationship building, social engagement, and trust and commitment development, resulting in a seamless customer experience and enhanced loyalty and patronage (Pangarkar et al., 2022). Researchers have explored the implications of phygital strategies for brand storytelling. They emphasize the importance of authenticity and heritage in conveying the brand's values and identity across digital platforms (Banik, 2021). Moreover, recent literature emphasizes the importance of luxury fashion brands implementing an omnichannel strategy that seamlessly integrates both online and offline channels to provide a cohesive and uninterrupted shopping experience for consumers (Mele et al., 2021). Current research aims to explore innovative ways in which luxury fashion brands can leverage phygital approaches to enhance brand equity, foster consumer loyalty, and drive sustainable growth in an increasingly digitized marketplace.

Topic 4: Customer experience

Consumers are nowadays accustomed to shift from physical to digital settings and the availability of phygital spaces opens up to novel opportunities to further enrich customer experience (Ballina et al., 2019). The spread of phygital environments has contributed to fill the gap between online and offline along the entire customer journey to deliver an enhanced customer experience, relying on the use of smart technologies (Mele & Russo-Spena, 2022).

Part of the literature included in this topic is focused on luxury customer experience. The intrinsic characteristics of luxury industry (high quality of physical products emphasised by ideals of legacy and craftsmanship as well as the services provided) make it look as mismatched with anything linked to digitalisation (Black, 2022). However, it is actually hugely impacted by the implementation of phygital solutions for enhanced interactions with customers (Kumar, 2023; Pangarkar & Shukla, 2023).

In this topic, research has evidenced the underlying mechanisms of the impact of phygital on customer experience. A key factor is represented by the medium used to provide services and interact with customers during the purchase process, such as mobile applications (Lawry, 2023; Silva e Sousa et al., 2022). Some studies deal with experience-related characteristics that make it phygital, such as the sense of touch simulation in a dematerialised environment (Ornati & Kalbaska, 2022) and phygital connectedness, intended as the tendency of consumers to showcase their physical experience with the product on social media networks (Kumar, 2023). Another aspect highlighted by scholars is the impact of phygital on customer relationship management performance metrics such as customer satisfaction, loyalty and retention (Mishra et al., 2023).

Topic 5: Education

The phygital environment is playing a key role in the digitalisation process of education, significantly accelerated by covid-19 pandemic (Fazzin, 2022; Zaitseva et al., 2023), which raised the need for remote or distance learning (Distefano, 2023), at all levels, from primary and higher education to university and beyond (Fazzin, 2022). Phygital education is the integration of traditional classroom methods with digital learning, thus going beyond the digital education practices developed during pandemic and restructuring the educational process in such a way that the role of both students and teachers is transformed (Zaitseva et al., 2023). It particularly fits students belonging to Generation Z, also known as phygital generation (Tolstikova et al., 2021). Scholars in the education field have started to investigate whether teaching effectiveness can increase in a phygital mode (Chaturvedi et al., 2021).

Literature evidences that phygital environments can innovate the educational process in different ways. It introduces new educational practices, based on the use of smartphones to foster socialization and collaborative learning (Fonseca & Mealha, 2022) as well as on the adoption of phygital textbooks to support an immersive learning experience to enable collaborative active learning (Prajapati, 2023). As emerges from the literature, the implementation of phygital learning practices can also take place by including gaming technologies in the educational process, providing students with the opportunity to train and rehearse their skills in a simulation environment (Zaitseva et al., 2023), also with the support of augmented reality (Chaturvedi et al., 2021). Education gamification in phygital environments is also reported as an effective solution for students with special educational needs (especially those aged between 5 and 12 years, for whom the border between physical and digital disappears), delivering a playful learning experiences by means of specific Apps (Goretti et al., 2020).

Some studies shed light on possible benefits of phygital education. Phygital solutions can therefore guide education towards enhanced inclusiveness, addressing the risk of digital exclusion for students with special needs (Efthymiou, 2023; Hemdan et al., 2023). In addition to being more inclusive, another great potential of phygital education highlighted in literature which however requires further investigation, is personalisation (Chaturvedi et al., 2021).

Topic 6: Tourism

The potential of the phygital environment in tourism industry mainly concerns the delivery of enhanced tourist experience. Tourists can indeed benefit from a dual physical-virtual world in a new experiential model that allows them to explore in an immersive and interactive way (Clemente et al., 2024)

A stream of literature evidences that phygital solutions are becoming increasingly popular in cultural institutions. Many studies in this topic provide examples of phygital applications in museums (Baldi, 2022; Baratta et al., 2022; Debono, 2021; Zhuang & Zheng, 2023). The phygital formula in such contexts represents a means to co-create cultural value (Clemente et al., 2024). The need for museums to implement phygital strategies and deliver phygital experiences has increased during pandemic but even post-pandemic scenarios involve the possibility to rely on phygital experiences. These scenarios may consist in offering a digital version of the physical tour or complementing the physical tour with some digital contents (Debono, 2021). As evidence by Clemente et al. (2024), some internationally popular museums such as Louvre (France), British Museum (UK), National Gallery (UK), National Museum of China (China) and Metropolitan Museum of Art (USA) have already implemented augmented/virtual reality based exhibitions and immersive tours as well as digital environments. Such solutions improve accessibility, enrich the visit and visitors' engagement, also allowing to personalise the visit with specific human-like interactions. According to the authors, such solutions contribute to the four dimensions of phygital experience: extended socialisation, extended self, extended sensation and extended setting. In some contexts, such as wine tourism, the phygital mode can be exploited to deliver an enjoyable learning experience concerning specific aspects tourist may be curious about (e. g. learn how to prune the vines wearing a virtual reality helmet instead of listening to the traditional explanations by winemakers), without losing human contact and relationship with tourists (Lorey et al., 2023).

By implementing a moderate digital approach to guide the physical visit can enhance the tension of artworks and expand the space for public discourse and the creation of game mechanisms that assign missions and roles to the public in a phygital manner, generates excitement and better engages participants. However, an excessive use of sensory stimulation may cause cognitive difficulty and result in negative user experience. The right balance should be found in

establishing a multi-dimensional dialogue relationship between “Person-Content-Object-Field” (Zhuang & Zheng, 2023).

Research in this stream also highlights the impact of the hybridisation of physical and digital components on destination performance, in terms of experience co-creation (Sustacha et al., 2022), tourists satisfaction and the overall competitiveness of smart tourist destinations (Ballina et al., 2019), destination recovery and resilience (Muangasame & Tan, 2023).

Topic 7: Retail experience

Retailers can improve customer engagement, facilitate informed decision-making, and enhance the overall shopping experience through initiatives such as interactive fitting rooms, virtual product try-on experiences, and personalized digital signage (Kumar et al., 2024). Publications included in this topic have examined how phygital technologies, including interactive displays, can be leveraged to create immersive and engaging retail environments that seamlessly blend online and offline interactions (Roten & Vanheems, 2023). The literature also emphasizes the importance of phygital strategies in addressing key challenges facing the retail industry, including showrooming, omnichannel integration, and declining foot traffic in physical stores. Due to mass customization, retailers cannot present all possible configurations in-store for customers to experience. In addition, consumers are shifting to online shopping (Van Rheden et al., 2023). Retailers can bridge the gap between digital convenience and physical touch, offering consumers the best of both-while driving brand loyalty and advocacy. Phygital customers’ needs and expectations that are satisfied through in store technologies and to detect the in store strategies that use these technologies to make the store attractive and experiential (Bonfanti et al., 2023). Furthermore, the impact of these technologies on consumer behaviour is explored, with emphasis on the role of sensory stimulation, emotional resonance, and social interaction in shaping purchase decisions and brand perception; to enhance the phygital customer journey and shopping experience, retailers aim to meet customers’ needs for utilitarian, hedonic, social, and playful experiences. These approaches increase gratification and emotions towards the acceptance of phygital retail, using user-generated content (Ray et al., 2023).

The literature analysed also highlights the importance of retailers adopting a customer-centric approach to phygital retailing, prioritizing seamless integration, personalized experiences, and data-driven insights to meet the evolving needs and preferences of the modern consumer. The in-store experience for customers can be enhanced through the use of phygital devices that showcase the appeal of technology to consumers. Retailers can leverage these perceptions to improve the overall retail experience (Boudkouss & Djelassi, 2021).

Current research has focused on understanding the long-term impact of phygital retail experiences on consumer satisfaction, brand loyalty, customer satisfaction, and business performance, as well as innovative strategies to maximize the potential of phygital technologies in driving retail innovation and competitiveness (Guzzetti et al., 2024; Lecointre-Erickson et al., 2021).

Research limitations. The study has some limitations. We conducted an extensive literature search to encompass all aspects of the topic, which resulted in the inclusion of some less scientifically rigorous document types in the sample (i.e. conference proceedings and book chapters). However, this was deemed appropriate at this explorative stage to conduct a broad investigation of such an innovative domain. Future developments of the research may address this limitation, applying additional filters to the research.

Managerial implications. The study provides some clarity on the exploitation opportunities of phygital reality and identifies a gap concerning the phygital applications to enhance social inclusion toward some disadvantaged and marginalised segments, thus providing insights on business opportunities to fill this gap.

Originality of the paper. The paper addresses a novel emerging topic for which research is still at its infancy, by applying a robust methodology to provide an overview of the state of the art. The findings show that a relevant outcome of phygital applications is represented by enhanced user and customer experience in different fields (luxury consumers, tourists, students). An overarching common thread that links some of the topics between each other is represented by the theme of inclusion. The phygital reality is indeed able to prevent some segments of students from being excluded as well as enables smart engagement strategies of various types of customers and tourists. However, phygital literature still lacks specific contributions able to unveil how the presence of phygital realities can enhance social inclusion, cultural participation and digitalization, by reducing marginalization and creating the conditions for better institutions, trust and social capital that in turn foster social cohesion and social sustainability. Future research may address this gap, investigating how phygital allows to enhance social inclusion toward some disadvantaged and marginalised segments (e.g. migrants, NEETs, the unemployed, older adults, cultural minorities, women, persons with disabilities, and those suffering from chronic disease and mental disorders).

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References

- ANDRADE J.G., DIAS P. (2020), "A phygital approach to cultural heritage: Augmented reality at regaleira", *Virtual Archaeology Review*, vol. 11, n. 22, pp. 15-25.
- BLEI D.M., NG A.Y., JORDAN M.I. (2003), "Latent dirichlet allocation", *Journal of machine Learning research*, vol. 3, n. Jan, pp. 993-1022.
- BOLLINI L. (2022), "Space as a Narrative Interface. Phygital Interactive Storytelling in the Field of Cultural Heritage", *International Conference Design! OPEN: Objects, Processes, Experiences and Narratives*,
- BONFANTI A., VIGOLO V., VANNUCCI V., BRUNETTI F. (2023), "Creating memorable shopping experiences to meet phygital customers' needs: evidence from sporting goods stores", *International Journal of Retail & Distribution Management*, vol. 51, n. 13, pp. 81-100.
- CLEMENTE L., IODICE G., CARIGNANI F., GRECO F., BIFULCO F. (2024), *Phygital approach to value co-creation in international museums*. Measuring Business Excellence.
- DAVIES J., SHARIFI H., LYONS A., FORSTER R., ELSAYED O.K.S.M. (2024), "Non-fungible tokens: The missing ingredient for sustainable supply chains in the metaverse age?", *Transportation Research Part E: Logistics and Transportation Review*, vol. 182, 103412.
- DEBONO S. (2021), "Thinking phygital: A museological framework of predictive futures", *Museum International*, vol. 73, n. 3-4, pp. 156-167.
- EFTHYMIU E. (2023), *Inclusive phygital learning approaches and strategies for students with special needs*. IGI Global.
- FAZZIN S. (2022), *EdTech economy and the transformation of education*. IGI Global.
- FONSECA M.J., MEALHA Ó. (2022), *Student smartphone experience narratives mediated by the phygital school library for learning ecosystems*. Conference on Smart Learning Ecosystems and Regional Development,
- GELSOMINI M., SPITALE M., GARZOTTO F. (2021), "Phygital interfaces for people with intellectual disability: an exploratory study at a social care center", *Multimedia Tools and Applications*, vol. 80, n. 26, pp. 34843-34874.
- GUZZETTI A., CRESPI R., BELVEDERE V. (2024), "Phygital luxury experiences. A correspondence analysis on retail technologies", *International Journal of Consumer Studies*, vol. 48, n. 2, pp. e13008.
- HALLOT P., LAMBERT M., JOUAN P. (2021), "Communication tools for inaccessible places of significance", *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, vol. 46, pp.. 293-299.
- IOANNIDIS S., KONTIS A.P. (2023), "The 4 Epochs of the Metaverse", *Journal of Metaverse*, vol. 3, n. 2, pp. 152-165.
- JACOB F., PEZ V., VOLLE P. (2023), "Shifting to phygital experience management with design science: a six-step method to manage customer journeys", *Journal of Strategic Marketing*, vol. 31, n. 5, pp. 961-982.
- JOHNSON M., BARLOW R. (2021), "Defining the phygital marketing advantage", *Journal of Theoretical and Applied Electronic Commerce Research*, vol. 16, n. 6, pp. 2365-2385.
- KUMAR J., RANA S., RANI G., RANI V. (2024), "How phygital customers' experience transforms the retail banking sector? Examining customer engagement and patronage intentions", *Competitiveness Review: An International Business Journal*, vol. 34, n. 1, pp. 92-106.
- LEE D.J., YU G.B., SIRGY M.J. (2023), "Reflections on phygital experiences: conceptual boundaries, wellbeing benefits and methodological suggestions", *Qualitative Market Research: An International Journal*.
- MELE C., SPENA T.R., MARZULLO M., DI BERNARDO I. (2023), "The phygital transformation: a systematic review and a research agenda", *Italian Journal of Marketing*, vol. 2023, n. 3, pp. 323-349.
- NOZDREVA R., KONINA N., PONOMAREVA E. (2023), *Marketing in Global Business. In World Economy and International Business: Theories, Trends, and Challenges* (pp. 707-720), Springer.
- ORNATI M., KALBASKA N. (2022), "Looking for haptics. Touch digitalization business strategies in luxury and fashion during COVID-19 and beyond", *Digital Business*, vol. 2, n. 2, 100035.
- PANGARKAR A., SHUKLA P. (2023), "Conspicuous and inconspicuous consumption of luxury goods in a digital world: insights, implications, and future research directions", *International Journal of Advertising*, vol. 42, n. 7, pp. 1226-1238.
- PIUMATTI G., LAMBERTI F., SANNA A., MONTUSCHI P. (2017), "Robust robot tracking for next-generation collaborative robotics-based gaming environments", *IEEE Transactions on Emerging Topics in Computing*, vol. 8, n. 3, pp. 869-882.
- RAY A., JANA S., RANA N.P. (2023), "An NLP-based Mixed-method Approach to Explore the Impact of Gratifications and Emotions on the Acceptance of Amazon Go", *Asia Pacific Journal of Information Systems*, vol. 33, n. 3, pp. 541-572.
- ROBERTS M.E., STEWART B.M., TINGLEY D. (2019), "Stm: An R package for structural topic models", *Journal of statistical software*, vol. 91, pp. 1-40.
- SCHNEIDER B. (2021), *Phygital Reality: Consumer lifestyles will straddle the physical and digital worlds in 2021*. P. (Euromonitor).
- SILVA D.G., CACHINHO H. (2021), "Places of phygital shopping experiences? The new supply frontier of business improvement districts in the digital age", *Sustainability*, vol. 13, n. 23, pp. 13150.
- SPITALE M., GELSOMINI M., BECCALUVA E., VIOLA L., GARZOTTO F. (2019), *Meeting the needs of people with neuro-developmental disorder through a phygital approach*. Proceedings of the 13th Biannual Conference of the Italian SIGCHI Chapter: Designing the next interaction,
- TERENZI B., VIGNATI A. (2021), *Smart retail and phygital customer journey in the kids and toys stores*. *Intelligent Human Systems Integration 2021: Proceedings of the 4th International Conference on Intelligent Human Systems Integration (IHSI 2021): Integrating People and Intelligent Systems*, February 22-24, 2021, Palermo, Italy,
- TURCO M.L., GIOVANNINI E.C. (2020), "Towards a phygital heritage approach for museum collection", *Journal of Archaeological Science: Reports*, vol. 34, 102639.
- TURSI V., SILIPO R. (2018), *From words to wisdom: An introduction to text mining with KNIME*. In: Zurich: KNIME Press.
- ZAITSEVA E.V., GONCHAROVA N.V., DAINEKO L.V. (2023), *Application of Phygital Games at the University in the Context of Digitalization*, International Conference on Professional Culture of the Specialist of the Future.

Exploring the Metaverse from the consumer perspective: insight from a systematic literature review.

MARCO FERRETTI¹ MARIA ANTONELLA FERRI² GIUSEPPE LA RAGIONE³ MARIA PALAZZO⁴
FRANCESCO PAROLA⁵ MARCELLO RISITANO⁶

Abstract

The digital transformation has catalyzed the emergence of the metaverse, transitioning from a speculative idea to a vibrant digital ecosystem that merges digital and physical worlds. This research delves into the metaverse's scholarly landscape from a consumer perspective, utilizing a systematic literature review and the PRISMA Protocol to sift through academic contributions. From an initial dataset of 323 papers, 38 articles were rigorously chosen, revealing an uptick in metaverse-focused studies, with an emphasis on consumers. The analysis identified a preference for qualitative research methods and highlighted key journals as prominent publication venues. With a co-occurrence analysis, it has been possible to unearth interconnected research themes, emphasizing the metaverse's potential to transform consumer interactions and experiences. This work sheds light on the implications of digital technologies for developing new consumption models and proposes future research directions and practical applications across various industries.

Key words: metaverse; marketing; consumer behavior; systematic literature review (SLR).

Framing of the research. *The emergence of digitalization is reshaping our world, leading people to spend significant time on digital platforms (e.g., social media, branded apps, metaverse). The enthusiasm of consumers to engage in value co-creation processes and utilize tools that make them feel part of something, such as the metaverse, is noteworthy. The metaverse, a phrase initially introduced by Stephenson (1992), has transformed from a fictional idea into a flourishing digital ecosystem. It presents a series of virtual environments where users can effortlessly transition between digital and physical worlds (Zhao et al., 2022). This digital realm enables users to engage socially through digital avatars, supporting the creation of value and shared experiences. The metaverse integrates mixed reality (MR) technology, ambient intelligence, and progress in information and communication technologies (ICTs), thus acting as a connector between the digital and physical worlds (Gursoy et al., 2022; Buhalis et al., 2023).*

The integration of virtual economies within the metaverse highlights a pivotal shift in consumer engagement and economic transactions. The adoption of cryptocurrencies and NFTs within these environments not only facilitates a novel economic model but also reshapes consumer perception of value and ownership (Ferdig et al., 2022). This paradigm shift prompts a reevaluation of traditional marketing strategies and consumer engagement practices in the context of virtual commerce (Dwivedi et al., 2022).

Exploring the metaverse is vital for its capacity to alter the way consumers interact, work, socialize, and perceive the world. Functioning as a complementary virtual reality, the metaverse delivers immersive experiences unbound by the physical world's constraints (Yoo et al., 2023). It facilitates the discovery of virtual service businesses, interactions with virtual aspects of products and services, and participation in immersive experiences that enhance users' comprehension of offerings (Flavián et al., 2019). The metaverse goes beyond single products or platforms, encompassing a collection of interconnected virtual worlds that act as continuous spaces for information exchange and participation (Gursoy et al., 2022; Visconti, 2022).

¹ University of Napoli Parthenope
e-mail: marco.ferretti@uniparthenope.it

² University Mercatorum
e-mail: a.ferri@unimercatorum.it

³ University of Napoli Parthenope
e-mail: giuseppe.laragione001@studenti.uniparthenope.it

⁴ University Mercatorum
e-mail: maria.palazzo@unimercatorum.it

⁵ University of Napoli Parthenope
e-mail: f.parola@autorita-trasporti.it

⁶ University of Napoli Parthenope
e-mail: marcello.risitano@uniparthenope.it

The social dynamics within the metaverse, including community building and social interactions, play a crucial role in shaping consumer behavior. These virtual communities offer a new avenue for marketing professionals to foster brand relationships and consumer engagement through innovative approaches that leverage the unique social fabric of the metaverse (Dwivedi et al., 2022; Barrera and Shah, 2023).

Investigating the metaverse is imperative for grasping its influence on various areas, including social interactions, commerce, education, and entertainment. Lately, researchers have turned their attention to aspects of the metaverse. For example, Narin (2021) performed a content analysis of metaverse literature, identifying key themes such as virtual worlds, augmented reality, and the social and economic implications of these digital environments. Likewise, Kim (2021) explored the metaverse's ability to boost interactive advertising, highlighting crucial issues related to privacy, ethics, and the assessment of goods and services within these virtual settings.

The significance of the metaverse is also highlighted by its capability to enable immersive interactions that reduce the perceived risks associated with service offerings. Utilizing virtual reality (VR), augmented reality (AR), and mixed reality (MR) technologies, the metaverse offers multisensory experiences that amplify individuals' engagement and satisfaction (Koochang et al., 2023). This immersive setting backs social and economic activities and brings about changes that redefine consumer behavior and value co-creation (Buhalis et al., 2019). As this digital arena progresses, research will be essential in guiding its development, ensuring the metaverse continues to be an inclusive, engaging, and worthwhile part of our digital future (Allam et al., 2022; Wang et al., 2022). From these considerations, the purpose of this paper is to understand the state of the art of the literature regarding the metaverse from a consumer perspective. Based on previous statements, it is vital to define the following research questions to guide our work:

RQ1: What are the main bibliometric variables, research trends and recurrent thematic areas in the use of metaverse from a consumer perspective?

RQ2: What are the knowledge clusters in the intellectual structure in this research area?

Purpose of the paper. The primary purpose of this study is to shed light on the metaverse from a consumer's perspective, marking a significant step towards understanding its multifaceted impact on consumer behavior and interactions within digital environments. By conducting a systematic review of existing literature, this work aims to dissect and analyze the prevailing research trends, themes, and conceptual clusters that have emerged around the consumer experience in the metaverse. Through this analysis, the study seeks to identify gaps in the current body of research, offering a foundation for future investigations to build upon. Additionally, it endeavors to provide valuable insights for both academics and practitioners by illustrating how the metaverse influences consumer engagement, value co-creation, and the overall consumer journey in digital realms. This study ultimately strives to contribute to the scholarly discourse on digital consumer behavior, paving the way for innovative research directions and practical applications in the evolving digital landscape.

Methodology. The study adopts a structured approach to examine academic works, utilizing a multi-step procedure known as the Systematic Literature Review (SLR) methodology. Chaudhary et al. (2021) highlight the SLR's benefits, including the precise selection of research that matches the inquiry question and contributes theoretical insights and frameworks that spur further investigation. The research employs the PRISMA Protocol, as outlined by Moher et al. (2015), to ensure a standardized selection methodology. Conference papers, books, book chapters, and PhD dissertations are excluded due to their minimal impact on academic literature. Following this, a content analysis is conducted on academic articles to extract key bibliographic information from studies focusing on metaverse and consumer. The analysis utilizes Microsoft Excel and VOSviewer Software for further examination. Initially, a bibliometric analysis is undertaken to investigate the research topic, identifying significant journal contributions and categorizing papers by their types and methodologies. Then, trends and thematic areas are explored through a co-occurrence analysis of keywords, providing insights into the evolving research landscape in this field (Tranfield et al., 2003). The PRISMA approach's initial step identifies the dataset and defines the research scope and focus, selecting the Scopus database for its extensive coverage and widespread use in research for its comprehensive selection of scientific journals, using as specific keywords "metaverse and consumer". These keywords have been searched within paper titles, abstracts, or keywords. This process resulted in a preliminary database of 323 records spanning from 2008 to February 2024. After refining through specific exclusion criteria: Ex1, non-article documents; Ex2, documents not in the business, management, or accounting fields; Ex3, non-English documents; Ex4, documents not published in peer-reviewed international journals, the database was narrowed down to 68 articles. The final phases of the PRISMA protocol involve setting eligibility criteria and selecting papers for the final sample after thoroughly reviewing all full-text articles. This led to the exclusion of 30 articles and the compilation of a sample of 38 bibliographic records. All bibliometric information from the final sample is exported to Microsoft Excel, with Scopus facilitating the extraction of essential data such as titles, abstracts, keywords, author names, publication years, citation counts, and journal names. This dataset is then enhanced with additional information relevant to the research objectives, particularly concerning the approach of the analyzed sample.

Results. The analysis shows a growing trend of publications exploring the metaverse from a consumer perspective. The distribution across years reveals a noticeable upward trajectory in the number of studies conducted. This trend underlines the escalating interest in this particular field especially in the last two years. In relation to research focus, 11 studies adopt a quantitative approach, 16 follow a qualitative methodology, 2 encompass a combination of both quantitative and qualitative methods, and 9 embrace a systematic literature review (Table 1).

Table 1. Paper type

Category	n	Percentage
Qualitative	16	42,10
Quantitative	11	28,94
Systematic literature review	9	23,68
Mixed methods	2	5,26

The preeminent outlet for distributing metaverse research is the *Journal of Consumer Psychology*, which encompasses three publications of 38 of the studies within our sample. Other journals that study this topic can be found in Table 2.

Table 2. Top 10 most relevant contributions

Journal	n	Percentage
Journal of Consumer Psychology	3	7,89
International Journal of Consumer Studies	2	5,26
International Journal of Contemporary Hospitality Management	2	5,26
Journal of Business Research	2	5,26
Journal of Retailing and Consumer Services	2	5,26
Psychology and Marketing	2	5,26
Tourism Review	2	5,26
AMS Review	1	2,63
Asia Pacific Journal of Marketing and Logistics	1	2,63
Business Horizons	1	2,63

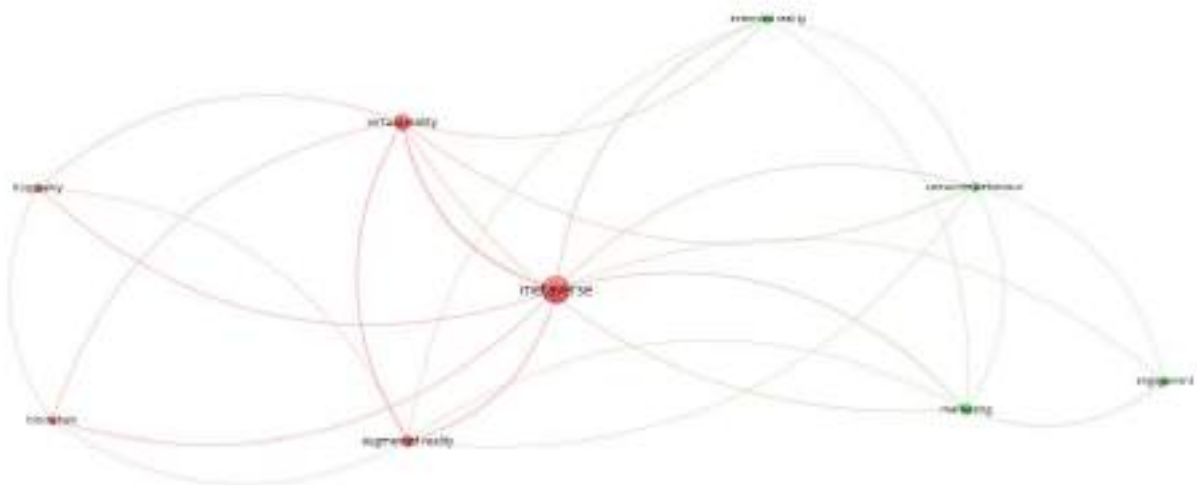
Utilizing VOSviewer software (Van Eck et al., 2010; Biggi and Giuliani, 2020; Secinaro et al., 2022), we conducted a co-occurrence analysis of keywords. This method, grounded in bibliometrics, was developed in the Java programming language. It empowers to chart networks among keywords, resulting in clusters that highlight primary research domains. Through co-occurrence analysis, the paper pinpoints instances where chosen keywords appear together in articles, signifying their interconnectedness. VOSviewer employs a natural language processing algorithm to gauge keyword associations and form clusters, color-coding them for differentiation (Van Eck et al., 2010). The resultant visual representation showcases “bubbles” their sizes reflective of keyword frequency within selected publications (Van Eck and Waltman, 2010). The findings enable us to distinguish and interconnect two discrete clusters, each comprising a collection of keywords exhibiting co-occurrence associations. A keyword is allocated to a sole cluster exclusively.

The bibliographic coupling consists of two clusters (Figure 1), encompassing 9 primary items and interconnected by 25 links. The cumulative strength of these links amounts to 57. In particular:

Cluster 1 (Metaverse and tools) comprises five items: augmented reality, blockchain, hospitality, metaverse and virtual reality.

Cluster 2 (Metaverse to engage consumers) comprises four items: consumer behavior, engagement, extended reality and marketing.

Figure 1. Co-occurrence analysis (VOSviewer)



Source: Our elaboration with VOSviewer.

The identification of clusters allows the authors to propose preliminary future research directions to expand the academic contribution on the topic. Starting from Cluster 1, the authors suggest investigating augmented reality (AR) in enhancing online shopping, blockchain's role in secure digital ownership systems, the potential of virtual hospitality experiences, architectural design principles of metaverse environments, and the educational potential of virtual reality (VR). For Cluster 2, proposed directions include examining how consumer purchasing decisions are influenced in virtual environments, the effectiveness of gamification strategies, the psychological effects of extended reality, and targeted advertising strategies assessing personalization versus privacy concerns.

Research limitations. This study has several limitations that warrant attention in future investigations. Given that the concept of the Metaverse is relatively new and continually evolving, the paper highlights that there is a scarcity of peer-reviewed literature specifically focused on the customers' point of view. This limitation affects the comprehensiveness of the SLR and requires researchers to include a broader range of sources in future studies. Initially, the systematic literature review was confined to the SCOPUS database. Subsequent research could broaden its scope by incorporating additional databases such as EBSCO, Web of Science, and Google Scholar. Moreover, the sampling strategy was restricted to the realms of business, management, and accounting. Expanding this to include disciplines like economics, psychology, and sociology could enrich the research's breadth and depth, providing a more holistic understanding of consumer behavior in the Metaverse. Besides, the possibility exists that certain pertinent studies were overlooked, either due to an incomplete set of keywords or the exclusion of relevant documents during the selection phase. Furthermore, the inclusion of studies predominantly from peer-reviewed journals may overlook valuable insights from industry reports, white papers, and conference proceedings that could provide practical applications and emerging trends not yet reflected in academic literature. In addition, the paper demonstrates that the Metaverse is a complex and multifaceted concept, and different researchers and practitioners define it in various ways. This heterogeneity in definitions poses challenges during the selection and categorization of relevant studies focused on customers, leading to inconsistencies in the review process. Furthermore, the Metaverse is undergoing rapid development, with new technologies, platforms, and applications, available for customers, emerging frequently. As a result, the literature available at the time of the review can quickly become outdated, making it challenging to provide a comprehensive overview of the current state of research in the field. Finally, the Metaverse intersects with various disciplines, including computer science, sociology, psychology, economics, and more. Conducting an SLR that adequately captures all relevant literature from these diverse fields and that focusses mainly on consumers' viewpoint requires expertise in multiple domains and may present challenges in terms of search strategy, study selection criteria, and synthesis of findings.

Future studies, that address these limitations, require careful consideration of search strategies, inclusion criteria, and synthesis methods, as well as ongoing updates to ensure the relevance and currency of the review findings in the rapidly evolving field of the metaverse. Actually a future research agenda may focus on: (i) Conducting a SLR on the emerging technologies and platforms in the Metaverse. Given the rapidly evolving nature of the Metaverse, focusing on emerging technologies and platforms can offer novel insights. Research can explore how advancements in augmented reality (AR), virtual reality (VR), blockchain, or artificial intelligence (AI) are shaping customer experiences in the Metaverse.

(ii) Focusing on the investigation of different cultural and ethical implications of customer interactions within the Metaverse. This could include issues such as privacy concerns, digital identity, cultural representation, and accessibility.

(iii) Implementing a longitudinal Analysis. Instead of just providing a snapshot of current literature, it can be conducted a longitudinal analysis to track changes in customer perceptions and behaviors over time towards the Metaverse. This can help identify trends and patterns that might not be apparent in a static review.

Theoretical and managerial implications. This research provides both theoretical and managerial insights, bolstering the consistency and scholarly framework of existing literature, which will act as a foundational base for future investigations in this domain. Moreover, it introduces a unified perspective to research themes that have previously seemed disparate, by proposing a singular analytical approach. This unified perspective not only enhances the coherence of research within this field but also opens new avenues for comprehensive analysis, facilitating a deeper understanding of the subject matter for both academics and practitioners. To the best of the authors' knowledge, this is the first SLR that studies the Metaverse and its impact on consumers. The research findings provide theoretical insights to evaluate the relevance of the digital technologies related to the Metaverse in creating of new consumption models - not confined to the physical world's limitations – to define “hybrid customer experience” through a multi-sensory involvement of the consumer before the purchase phase, during the purchase and/or after the purchase. Secondly, it allows for an understanding of the current literature's themes on the topic, paving the way for future research and evaluating the academic challenges in terms of adoption of new research methods (e.g. Neuromarketing Techniques) and exploring of specific business contexts (e.g. Tourism, Retail, Gaming, etc.). A systematic literature review on the Metaverse from the customer point of view can have several important managerial implications for businesses looking to capitalize on this emerging trend. First of all, focusing on the analysis of clusters 1 and 2, the SLR provides original insights into what customers may expect from the Metaverse experience. This understanding can guide practitioners in developing products and services that align with these expectations, thereby enhancing customer engagement, satisfaction and loyalty. Besides, by analyzing the existing literature, managers can identify the key features and preferences that customers value in the Metaverse. This information can inform product development and innovation strategies to create offerings that resonate with customers and differentiate a company from competitors. In fact, understanding how customers ‘navigate’ and interact within the Metaverse can help businesses map out real customer journeys and optimize touchpoints to improve engagement and conversion rates. This insight can also aid in refining marketing strategies to effectively target and reach customers within the Metaverse.

Moreover, the SLR reveal to some extent initial insights into the importance of personalization and customization in the Metaverse experience. Managers can leverage this knowledge to tailor offerings and experiences to individual customer preferences, enhancing relevance and satisfaction.

In addition, focusing on the analysis of cluster 2, it is clear that customer trust and security are crucial in any digital environment, including the Metaverse. Insights from the SLR can inform managers about the factors that influence customer trust and perceptions of security within the Metaverse. This understanding can guide the implementation of robust security measures and strategies to build trust with customers.

Finally, by identifying gaps or areas of improvement in the current Metaverse offerings, managers can develop value-added services that address unmet customer needs or pain points. This could involve integrating additional features, enhancing user interfaces, or providing superior customer support within the Metaverse environment. In the light of these considerations, managers can even decide to use this foresight to anticipate customer needs and preferences, enabling them to stay ahead of the curve and adapt their strategies accordingly. Overall, for managers understanding the benefits of Metaverse serves as a powerful competitive tool to achieve consumer engagement and involve the customers in the value co-creation of experiences, maximizing consumer-brand relationships in the long term.

Originality of the paper. This section elaborates on the originality of the work, positioning it as one of the first to examine the metaverse from a consumer perspective. While other systematic literature reviews exist in the field, none, to the authors' best knowledge, specifically focus on the consumer aspect. By analyzing existing papers in the literature, this study has been able to identify previously discussed topics, thereby outlining how future research can be conducted to benefit both academics and managers. This approach not only underscores the uniqueness of the work but also highlights its contribution to expanding the understanding of the metaverse's impact on consumer behavior. Moreover, considering integrating insights from various disciplines such as business, management, and accounting provide a holistic understanding of customers' viewpoint in the Metaverse. This cross-disciplinary approach offers unique insights that needs to be better explored in existing literature reviews. Finally, starting from the analysis of the four items included in cluster 2 (consumer behavior, engagement, extended reality, and marketing) helped the researchers to conduct an initial comparative analysis of how customer experiences in the Metaverse differ from those in the physical world or other virtual environments. Highlighting these differences shed light on the unique challenges and opportunities of the Metaverse that have to be better explained in theory and practice.

References

- ALLAM Z., SHARIFI A., BIBRI S.E., JONES D.S., KROGSTIE J. (2022), "The metaverse as a virtual form of smart cities: Opportunities and challenges for environmental, economic, and social sustainability in urban futures", *Smart Cities*, vol. 5, n. 3, pp. 771-801.
- BARRERA K.G., SHAH D. (2023), "Marketing in the Metaverse: Conceptual understanding, framework, and research agenda", *Journal of Business Research*, vol. 155, 113420.
- BIGGI G., GIULIANI E., (2020, pp. "The noxious consequences of innovation: What do we now?", *Industry and Innovation*, vol. 28, n. 1, pp. 19–41
- BUHALIS D., HARWOOD T., BOGICEVIC V., VIGLIA G., BELDONA S., HOFACKER C. (2019), "Technological disruptions in services: lessons from tourism and hospitality", *Journal of Service Management*, vol. 30, n. 4, pp. 484-506.
- CHAUDHARY S., DHIR A., FERRARIS A., BERTOLDI B. (2021), "Trust and reputation in family businesses: A systematic literature review of past achievements and future promises", *Journal of Business Research*, vol. 137, pp. 143-161.
- DWIVEDI Y.K., HUGHES L., BAABDULLAH A.M., RIBEIRO-NAVARRETE S., GIANNAKIS M., AL-DEBEI M.M., WAMBA S.F. (2022), "Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy", *International Journal of Information Management*, vol. 66, 102542.
- FERDIG R.E., COHEN M., LING E., HARTSHORNE R. (2022), "Examining blockchain protocols, cryptocurrency, nfts, and other web 3.0 affordances in teacher education", *Journal of Technology and Teacher Education*, vol. 30, n. 1, pp. 5-19.
- FLAVIÁN C., IBÁÑEZ-SÁNCHEZ S., ORÚS C. (2019), "The impact of virtual, augmented and mixed reality technologies on the customer experience", *Journal of business research*, vol. 100, pp. 547-560.
- GURSOY D., MALODIA S., DHIR A. (2022), "The metaverse in the hospitality and tourism industry: An overview of current trends and future research directions", *Journal of Hospitality Marketing & Management*, vol. 31, n. 5, pp. 527-534.
- KIM J. (2021), "Advertising in the metaverse: Research agenda", *Journal of Interactive Advertising*, vol. 21, n. 3, pp. 141-144.
- KOOHANG A., NORD J., OOI K., TAN G., AL-EMRAN M., AW E., WONG L. (2023), "Shaping the metaverse into reality: Multidisciplinary perspectives on opportunities, challenges, and future research", *Journal of Computer Information Systems*.
- MOHER D., SHAMSEER L., CLARKE M., GHERSI D., LIBERATI A., PETTICREW M., SHEKELLE P., STEWART L.A. (2015), "Preferred reporting items for systematic review and meta-analysis protocols (PRISMAP) 2015 statement", *Systematic reviews*, vol. 4, n. 1.
- NARIN N.G. (2021), "A content analysis of the metaverse articles", *Journal of Metaverse*, vol. 1, n. 1, pp. 17-24.
- SECINARO S., CALANDRA D., LANZALONGA F., FERRARIS A. (2022), "Electric vehicles' consumer behaviours: Mapping the field and providing a research agenda", *Journal of Business Research*, vol. 150, pp. 399-416.
- TRANFIELD D., DENYER D., SMART P. (2003), "Towards a methodology for developing evidence informed management knowledge by means of systematic review", *British Journal of Management*, vol. 14, n. 3, pp. 207–222.
- VAN ECK N.J., WALTMAN L. (2010), "Software survey: VOSviewer, a computer program for bibliometric mapping", *Scientometrics*, vol. 84, n. 2, pp. 523–538.

- VAN ECK N.J., WALTMAN L., DEKKER R., VAN DEN BERG J. (2010), "A comparison of two techniques for bibliometric mapping: Multidimensional scaling and VOS", *Journal of the American Society for Information Science and Technology*, vol. 61, n. 12, pp. 2405-2416.
- VISCONTI R.M. (2022), "From physical reality to the metaverse: a multilayer network valuation", *Journal of metaverse*, vol. 2, n. 1, pp. 16-22.
- WANG M., YU H., BELL Z., CHU X. (2022), "Constructing an edu-metaverse ecosystem: A new and innovative framework", *IEEE Transactions on Learning Technologies*, vol. 15, n. 6, pp. 685-696.
- YOO K., WELDEN R., HEWETT K., HAENLEIN M. (2023), "The merchants of meta: A research agenda to understand the future of retailing in the metaverse", *Journal of Retailing*, vol. 99, n. 2, pp. 173-192.
- ZHAO Y., JIANG J., CHEN Y., LIU R., YANG Y., XUE X., CHEN S. (2022), "Metaverse: Perspectives from graphics, interactions and visualization", *Visual Informatics*, vol. 6, n. 1, pp. 56-67.

Fifty Shades of Black Friday

FRANCESCA NEGRI¹ ALESSANDRO IUFFMANN GHEZZI²

Abstract

Promotional events, such as Black Friday and Singles' Day, have become prominent fixtures in the calendar worldwide, offering consumers significant discounts and driving immense sales volumes. These events originated in different parts of the world but have gained global recognition due to the proliferation of e-commerce and international trade. They're characterized by retailers offering substantial discounts, both online and in-store, prompting a frenzy of consumer activity. They have also been present in the Italian market, and it might be worth researching today about the effectiveness of these promotions, between different media and channels, also evaluating the implications in terms of sustainability of the customer journey. Through two sessions of three Focus Groups each, this contribution seeks to bring out the point of view of Gen Z, with the dual purpose of integrating the stream of literature on Big Discount Days (BDDs) and providing some managerial implications for the companies.

Key words: Black Friday; Big Discount Days (BDDs); Gen Z; Focus Groups; sustainability; unplanned purchase

Framing of the research. The big discount days were first implemented in the USA under the name "Black Friday", the first Friday after the Thanksgiving: some stores' sales continue to Monday (the so called "Cyber Monday") or for a week ("Cyber Week"). From the United States this shopping tradition has recently spread to Europe, while in Eastern countries Singles Day, November 11th, is very popular. What do these days have in common? Which centralize a large part of people's shopping activities and excitement, across different channels and generations. Today Black Friday and Singles' Day are monumental promotional events that continue to shape consumer behavior and drive substantial economic activity on both a national and global scale. What is influenced is not only the purchasing behavior of the consumer, but also the management of promotions by brands and distributors, who chase, imitate and/or contest these days of deep discounts at a global level. Anything can be done except ignoring them.

Parallel to the cross-countries diffusion, new traits and contaminations have appeared which are modifying its essence (Thomas and Peters, 2011): consumers are shopping earlier, moving online, taking advantage of delivery and curbside pickup, and expecting retailers to provide a safe, socially distanced shopping experience (Peters and Thomas, 2022). This shift represents a push to investigate the phenomenon more deeply. Therefore, the Black Friday and Single Days event have been previously examined trying to understand consumer intentions (Swilley and Goldsmith, 2012; Lennon et al., 2018), within the context of literature on marketing promotions (Khodabakhsh et al., 2018), in terms of communicational ritual (Bell et al., 2014), or focusing on specific Country (Spain in the case of Giroto et al., 2023; Botswana in Jaiyeoba et al., 2020; Greece in Tsiotsou, 2017; USA in Harrison et al., 2010 and Kwon and Brinthaup, 2015). Moreover, literature pointed out both positive and negative emotions on Black Friday, where positive emotions were connected to excitement and happiness, whereas negative emotions involved anger, anxiety, belligerence, disgust, distress, irritability, sadness, and tension (Taylor et al., 2011; O'Sullivan, 2016; Tzeng et al., 2020). Yet, some aspects still remain unanalyzed by the literature. In particular, to the best of our knowledge: the relationship between planned and unplanned purchases over these days, the cross-channel analysis trying to investigate the vocation of online and offline channels in the different stages of shopping behaviour and the theme of economic and environmental sustainability. Topics that we believe are particularly relevant to Gen Z.

Purpose of the paper. Thus, the research questions were as follows:

RQ1) How effective is the Big Discount Days (BDDs) promotion today in determining planned and/or unplanned purchases?

RQ2) Is this promotional effectiveness greater online or offline, or is it the same? Are the two channels competing with each other? How does the experience change between online and offline? What role do these channels have in the phases of the customer journey?

RQ3) How much will the Gen Z's greater sensitivity towards environmental and economic sustainability impact the effectiveness of these mass purchasing days?

¹ Catholic University of Milan
e-mail: francesca.negri1@unicatt.it

² Catholic University of Milan
e-mail: alessandro.iuffmannghizzi@unicatt.it

Methodology. To investigate these aspects, six Focus Groups (Lederman, 1990; Creswell and Creswell, 2018) were carried out, with a first convocation two weeks before Black Friday 2024 and a second convocation ten days after Black Friday 2024, to collect expectations, sentiment and planning (first convocation) and measure actual purchasing behavior, feelings and level of satisfaction *ex post* (second convocation) regarding the shopping journey just experienced. The choice of a double call for the three groups (for a total of six Focus Groups) was aimed to investigate the intentions, perceptions and also the effective behaviors, since our aim (RQ1) was to investigate the effectiveness of the promotional lever of the Big Sales Day in determining planned purchases and/or unplanned. The topic addressed by RQ2 and RQ3 instead emerged both in the first convening session and in the second.

In detail, the participants all belong to Gen Z. The six Focus Groups were run online (via Microsoft Teams) and involved 24 people (8 people per group: the same group was called before and after Black Friday). The participants were selected using Authors' personal networks (opportunistic sampling) according to the following criteria: 1) to have shopping experience both online and offline and 2) have known what Black Friday was for at least 2 years. In collecting the availability to participate in the focus group studies, a small monetary incentive (10 euros) has been offered for participation (Van Laer et al. 2012).

The moderators adopted a soft-empathetic style of conduction making sure that the group dynamics facilitated the emergence of reliable information: through moderation, was ensured 1) the discussion of all points highlighted by previous literature, and 2) a friendly and neutral environment, ensuring that everyone could express their thoughts trying to soften the double social desirability bias. Participants' privacy was ensured at the beginning of the meeting, specifying that any information would have been traced anonymously and in aggregate form. Furthermore, the authorization to record the conversations has been requested and obtained. In order to conduct ethical research, participants were also assured full access to the research outputs once published.

The focus group protocol was designed on literature review and included the following key questions: prevalence of which feeling (impatient waiting and/or overwhelmed by choice/information overload), and how this feeling has changed or not year after year; touchpoints involved to collect information; planning and budgeting, including the impact of planning on "in view of" purchasing stops; purpose of any purchases (for yourself, in view of Christmas, ...); role and function of online and offline sales channels; perception and propensity for risk/innovation (purchases of already known products vs. new products and markets); subscription to newsletters/offers that could encourage loyalty even *ex post*; payment systems (deferred or not); aspects of economic and environmental sustainability considered; actual experience (planned/unplanned purchases ratio, budget used, overall sentiment; Black Friday-Cyber Monday ratio); functional aspects (delivery, couriers); weight and role of any returns. Alongside these planned points, other results emerged which were not foreseen in the schedule, as typically happens in qualitative research, and which will be treated in the next Results section.

Even if this is a small-scale study based on three focus groups, the results can be considered reliable, because the differences that emerge from the three Focus Groups are few and small, and we believe that the exhaustiveness criterion has been reached.

Results. From the analysis of the considerations that emerged during the research phase, it was possible to deduce the new meaning that these days have for the specific generation, the relationship between planned and unplanned purchases across different media and channels, and how these days are dis-connected with the theme of conscious shopping behaviour and of sustainability.

RQ1 discussion: From the discussion of the Focus Groups, it emerges without doubts that the majority of purchases during the typical promotional days of Black Friday are planned. Even the choice to join or not is planned: the participants resolutely told us how they would behave, joining or not, and there were no *ex-post* changes. This also applies to the choice of channels: those who had announced that they would give preference to online predominantly used online, and vice versa. Those who were afraid of making unplanned purchases didn't make them anyway. During the discussion we tried to understand whether budgetary constraints determined the preponderance of the planned part, but this reading was not confirmed. Simply, we were told, Black Friday offers are not perceived as that unmissable, now having many entire periods of offers beyond the seasonal sales. A certain distrust towards Black Friday also emerged, cross-channel: the fear of finding old clothes and objects, the feeling of being looked at with judgment in physical stores by sales assistants, the feeling of having a lower level of service (for example, the perception that it is easier for couriers to lose a package or delay delivery due to the rush) leads some people to give up from the start. Those who had a shopping list, perhaps already containing Christmas presents, were satisfied with having completed the task. In fact, strong planning often leads to eroding sales for the Christmas period, thanks also to the growing number of days of accepted returns (up to three months, even covering Valentine's Day). In the shopping lists there are, and it is almost obvious considering what previously discussed, above all already known products and brands: this moment does not currently represent an opportunity to get to know new companies. Gen Z appeared to be very informed and skilled, not easily influenced by emails and promotional messages (which were instead considered rather excessive): among the most used tools for planning and getting information there are certainly wishlists, Telegram channels of content creators, YouTubers, broadcast channels. For physical stores, also windows are very important to support communication.

RQ2 discussion: Promotional effectiveness does not seem to be perceived as different between online and offline channels: it is simply easier to collect information online, because price communication is more monitorable and, we were told, applications capable of monitoring dynamics pricing are often used, also for activating alerts and memos. Offline, many people perceive it as difficult to monitor price developments. The two channels do not compete directly with each other, since it is not the degree of promotional offer that determines the choice for one or the other: those who

choose online do so because they generally prefer to buy online, they have a greater level of confidence with online environment and appreciate the online advantages. Those who select offline channels during these periods do so because they have a clear preference for the physical channel, contact with the sales staff and the pleasure of in-store shopping. In some cases, these channels intersect during the customer journey: for example, for those who buy online it is very appreciated to be able to make a return offline, just as for those who buy offline it is very useful to receive information online, such as through the WhatsApp Business channels run by small independent shops that perhaps don't have a website. Finally, both online and offline, no clear distinction emerged between Black Friday and Cyber Monday, which were instead perceived as absolutely overlapping and indistinguishable events.

RQ3 discussion: Probably because it was a strong planning of the purchasers that emerged in parallel with a growing decrease in the promotional effectiveness of Black Friday, among the people involved in the study there was no strong concern about the issue of economic or environmental sustainability specifically connected to Black Friday. No one, for example, claimed that they would buy more than necessary thanks to the possibility of paying in installments. The element that emerged most is undoubtedly linked to the environmental sustainability of online shopping deliveries. Finally, very few were aware that for ethical reasons some companies had opted out of joining Black Friday promotions. Montura was one of the few to be cited.

Research limitations. The study is based on a qualitative research method, and this implies the typical limitations of qualitative research, including the reduced generalizability of the results. However, this is not a preliminary study: the research hypotheses determine the choice of the Focus Groups, in order to investigate the deeper reasons and the level of awareness of consumers thanks to the stimulation of conversation between peers. In order to increase its robustness and value, we could proceed by expanding the number of countries involved and/or apply the RQs to other generations, maybe more involved in BDDs.

Managerial implications. Finally, Managerial Implications for Brands were discussed as the essence of Black Friday & co has changed: this section included strategies producers and retailers can use to engage shoppers across different channel, without losing sight of the new value sets of Gen Z.

The main managerial implications that emerge from the Focus Group discussion is an invitation to Brands not to focus only on the promo, but to consider the Customer Experience in its entirety: people, especially in physical stores, have become wary of certain offers, and they often feel like “second class customers” (paradoxically, customers are surprised when they aren't treated badly in stores on Black Friday!). It is necessary to improve the customer's overall CX, to transform this moment into an opportunity to create a lasting relationship with the customer and not just a single sale. The low level of satisfaction with online and offline experiences seems to force Brands to better prepare for the wave of requests linked to Black Friday and Cyber Monday, strengthening the stability/reach of sites and apps and investing in more staff in physical stores with advance. If online brands/retailers seemed to have learned to manage, at least in part, the greater turnout, this is not the case for physical stores, where queues outside and very crowded shops are often reported: physical retailers, perhaps also looking at online retailers, could plan systems for managing queues and store attendance, through visit planning systems or events that entertain people while they are waiting. As for online retailers, greater planning in terms of production capacity also translates into greater investment in logistics strength, to ensure punctual and well-managed deliveries. In this, big players like Amazon set very high standards. However, some of the participants highlighted that in this time of the year, a small drop in the level of service is considered almost physiological, and therefore acceptable.

The second aspect that must be considered is the weakening of the promotional leverage, which risks triggering a vicious circle: the offers always start earlier (from Prime Day at the beginning of October, for example), and this means that the only distinction for Big Promotional Days such as Black Friday is the depth of the discount, which must be increasingly deeper, leading many times to a loss of margins. Literature has always underlined that promotions must be short and deep to be effective: today companies are adopting the opposite behavior. It also emerges from the Focus Groups that Gen Z are very attentive to monitoring promotions, thanks to a variety of channels such as Telegram and YouTube, and is therefore absolutely capable not only of recognizing the evolving depth of the discount, also for long periods (months), but of noticing situations (they seem growing) in which brands and retailers cheat customers by offering discounts on Black Friday that are lower than other days. This promotional management therefore determines not only a lower effectiveness of the promotional lever, but also a potential fracture/loss of trust between the Brand and the customer, who feels “ripped off”. In rethinking greater promotional effectiveness, with clearer and time-limited discounts, Brands should also communicate their policies, to invest in building trust. For example, those brands that specify in advance the arrival of an important promotion are extremely appreciated: in that way customers will have the opportunity to plan the purchase and will not find themselves in the unpleasant sensation that often happens when making a purchase and receiving a promo within a few hours. Furthermore, the policy adopted by some brands of incremental discounts as Black Friday approaches seems to put some customers in crisis, who are never sure when the right time to buy is, fearing at the same time that the product will sell out. Once again, a demand for more transparent promotion communication clearly emerges. For some, the process of gathering information is very burdensome, and leads to significant levels of dissatisfaction and fatigue, even to the point of giving up.

The fact that in Italy BDDs typical of other countries are also recently celebrated, such as Single Days, makes the occasions very little distinctive: there are many opportunities to create more distinctive way to manage promotions.

Currently, during Black Friday and others BDDs is perceived a dangerous overlapping level of offers across different brands and channels, which make them all perfectly substitutable.

Since from the Focus Groups emerges, in confirmation of the reading, an absolutely omnichannel customer journey in every phase, which involves even non-traditional touchpoints for the collection of information (role of influencer broadcast channels, for example), it is crucial for Brands to ensure a fluid and seamless experience between sales and communication channels, starting to cover even the less obvious channels. On the other hand, some channels seem to be much less used to communicate Black Friday offers, such as TV or print media, where there is no perceived crowding.

In closing the Managerial Implications, it is worth noting that among the people involved in the study there was very little awareness of the companies that did not join Black Friday, for the most disparate reasons (economic or ethical, mainly). The advice that emerges from this is to invest in communicating this choice, in order to create awareness and differentiate yourself. However, this concerns sectors where participation in Black Friday is expected, such as clothing and consumer electronics, for example: instead, sectors have emerged, such as art or education, in which participation is not expected.

Originality of the paper. We believe the first element of originality derives from the continuous evolution of the phenomenon under study, where the promotional lever effectiveness has been shown to be changing year after year, as are consumers: increasingly skilled, prepared, bored and with greater attention to the economic and environmental sustainability of their purchases. The topic of promotional effectiveness must be studied in a constantly updated manner precisely because of this changeability, linked to market and demand factors. Moreover, to the best of our knowledge, this is the first contribution that tries to contextualize the role of Big Discount Days (BDDs) promotion in determining planned versus unplanned purchases, also using an intertype competition (online and offline, across different sectors) lens. Further elements of originality are the focus on Gen Z and the Italian market.

References

- ATAMAN F., ÖZGÜNER O. (2021), "Determination of social media users' perceptions about "Black Friday" activity via sentiment analysis", *International Journal Multi Curr Education Research*, vol. 3, n. 3), 3pp. 61-371.
- AVCI I., YILDIZ S. (2021), "A Research on Hedonic and Utilitarian Consumption Behavior of Young Consumers on Big Discount Days", in *Handbook of Research on Applied AI for International Business and Marketing Applications*.
- BELL G.C., WEATHERS M.R., HASTINGS S.O., PETERSON E.B. (2014) "Investigating the Celebration of Black Friday as a Communication Ritual", *Journal of Creative Communications*, vol. 9, n. 3, pp. 235-251.
- CRESWELL J.W., CRESWELL J.D. (2018), *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, Sage, Los Angeles.
- GIROTTI M., IRURITA A.M.A., MORO M.L.S. (2023), "Black Friday vs. Green Friday: A Comparative Sentiment Analysis of Spanish Social Media Users' Perceptions", in F. J. Martínez-López (Ed.): *DME, SPBE*, pp. 224-242, Springer Nature Switzerland AG.
- HARRISON R., REILLY T., GENTRY J. (2010), "Black Friday: a video-ethnography of an experiential shopping event", In: Campbell, M.C., Inman, J., Pieters, R. (eds.) *NA - Advances in Consumer Research Volume*. Association for Consumer Research, MN, vol. 733.
- JAIYEGBA O., SVOTWA T.D., MAKANYEZA C. (2020), "Black Friday Shopping Behaviour among Generation Y Consumers in Botswana: An Application of the Stimulus-Organism-Response Theory", *African Journal of Business and Economic Research*, vol. 15, n. 4, December, pp 45 - 69.
- KHODABAKHSH M., KAHANI M., BAGHERI E., NOORIAN Z. (2018), "Detecting life events from twitter based on temporal semantic features", *Knowledge-Based System*, vol. 148, pp. 1-16.
- KWON H.J., BRINTHAUPT T.M. (2015), "The motives, characteristics and experiences of US Black Friday shoppers", *Journal of Global Fashion Marketing*, vol. 6:4, pp. 292-302.
- LEDERMAN L.C. (1990), "Assessing educational effectiveness: The focus group interview as a technique for data collection". *Communication Education*, vol. 39, n. 2, pp. 117-127.
- LENNON S.J., KIM M., LEE J., JOHNSON K.K.P. (2018), "Consumer Emotions on Black Friday: Antecedents and Consequence", *Journal of Research for Consumers*, n. 32, pp. 70-109.
- LI J., ZHU A., LIU D., ZHAO W., ZHOU Y., CHEN Y., LIU Y., SUN N. (2020), "Sustainability of China's Singles Day Shopping Festivals: Exploring the Moderating Effect of Fairness Atmospherics on Consumers' Continuance Participation", *Sustainability*, vol. 12, n. 7), p. 2644.
- O'SULLIVAN S.R. (2016), "The branded carnival: the dark magic of consumer excitement", *Journal of Marketing Management*, vol. 32, n. 9-10, pp. 1033-1058.
- PETERS C., THOMAS J. (2022), "Black Friday: Has the game changed?", *Journal of Global Fashion Marketing*, vol. 13, n. 4, pp. 344-359.
- SAILER A., WILFING H., STRAUS E. (2022), "Greenwashing and Bluewashing in Black Friday-Related Sustainable Fashion Marketing on Instagram", *Sustainability*, vol. 14, p. 1494.
- SWILLEY E., GOLDSMITH R.E. (2013), "Black Friday and Cyber Monday: Understanding consumer intentions on two major shopping days", *Journal of Retailing and Consumer Services*, vol. 20, n. 1, pp 43-50.
- TAYLOR L.M., KATHLEEN O., SHAW K. (2011), "An analysis of consumer behavior on Black Friday". *American International Journal of Contemporary Research*, vol. 1, n. 1, pp. 1-5.
- THOMAS J.B., PETERS C. (2011), "An exploratory investigation of Black Friday consumption rituals", *International Journal of Retail and Distribution Management*, vol. 39, n. 7, pp. 522-537.
- TSIOTSOU R.H. (2017), "Black Friday": Attitudes, Behavior and Intentions of Greek Consumers", *International Conference on Advances in National Brand and Private Label Marketing (NB&PL)*, Barcelona, Spain, Springer.

- TZENG S.Y., ERTZ M., JO M.S., SARIGÖLLÜ E. (2021), “Factors affecting customer satisfaction on online shopping holiday”, *Marketing Intelligence & Planning*, vol. 39, n. 4, pp. 516-532.
- WILSON M., PASCHEN J., PITT C., WALLSTRÖM Å. (2019), “Restraint on black Friday: an investigation into consumer motivations for participating in “Buy Nothing Day”: an abstract”, in: Rossi P., Krey N. (eds.) AMSWMC 2018. DMSPAMS, pp. 859-859, Springer, Cham.

Track 7
Purpose-driven Businesses

Entrepreneurial Ecosystem and Proximity: a framework for Social Ecosystem Development

RICKY CELENTA¹ VALENTINA CUCINO² ROSANGELA FEOLA³ CHIARA CRUDELE⁴

Abstract

In recent decades, studies on entrepreneurship have evolved from an analysis focused on the individual to a broader perspective centered on the community, introducing the concept of the entrepreneurial ecosystem. This concept represents an interconnected network of actors influencing the creation and trajectory of businesses in a geographical region. Over the years, literature has explored various dimensions of these ecosystems, including the involved actors, physical infrastructures, and entrepreneurial culture. However, recent research has highlighted the need to analyze entrepreneurial ecosystems at various levels of proximity. This study proposes to examine the movement of BCorps as a case study to understand how different forms of proximity influence the development of social entrepreneurial ecosystems. Through a qualitative methodology, the aim is to provide a new perspective on the interaction between social ecosystems and entrepreneurship, thereby contributing to the understanding and development of social entrepreneurial ecosystems.

Key words: Entrepreneurial Ecosystem; Proximity; Sustainable; BCorp; Benefit Corporation; Case study

Framing of the research. Towards the end of the 1980s, there was a shift in entrepreneurship studies, moving from an analysis focused on the individual and their personality to a broader perspective centered around the community (Stam et al., 2015). During this period, the conceptual foundations of entrepreneurial ecosystems emerged, taking into account the influence of social, cultural, and economic forces in the entrepreneurial process (Aldrich, 1990). The first definition of an entrepreneurial ecosystem is attributed to Cohen (2006): “Entrepreneurial ecosystems represent a diverse set of inter-dependent actors within a geographic region that influence the formation and eventual trajectory of the entire group of actors and potentially the economy as a whole...Entrepreneurial ecosystems evolve through a set of interdependent components which interact to generate new venture creation over time.”

In the initial literature, the ecosystem was explored through three main conceptual frameworks combining different disciplines: economics, geography, and sociology (Feld, 2012). Furthermore, it was highlighted that the entrepreneurial ecosystem comprises three dimensions: the actors involved and their interactions, physical infrastructures, and entrepreneurial culture (Cohen, 2006). Building on these premises, Spigel (2017) proposed three categories of tangible and intangible attributes describing the configuration of an entrepreneurial ecosystem: cultural, social, and material. In recent years, the concept of an entrepreneurial ecosystem has attracted considerable attention (Stam, 2015; Stam & Spigel, 2017; Theodoraki et al., 2018; 2022), and it has been understood that the entrepreneurial ecosystem, as a highly complex construct, needs to be studied at various levels of analysis (Theodoraki and Messegghem, 2017). Indeed, as the literature progresses, the geographical dimension has increasingly expanded its boundaries (Stam and van de Ven, 2019; Theodoraki and Catanzaro, 2022), and the need to analyze entrepreneurial ecosystems through a multilevel approach has become more apparent (Theodoraki and Messegghem, 2017). Indeed, although geographic proximity facilitates interactive learning, it is neither a necessary nor a sufficient condition for learning to take place; in this sense, geographic proximity probably only reinforces other dimensions of proximity (Boschma, 2005). In fact, as highlighted by Boschma (2005), geographic proximity is just one of the proximities underlying the development of an entrepreneurial ecosystem: cognitive, organizational, social, institutional, and geographical proximity. Cognitive Proximity is defined as the extent to which actors share a similar knowledge base and expertise, enabling them to learn from each other. Organizational proximity is defined as the extent to which relationships are shared within or between organizations. It involves the degree of autonomy and control that can be exercised in organizational arrangements. As highlighted, too much organizational proximity can lead to a lack of flexibility and innovation, while too little can lead to a lack of control and increased opportunism. Loosely coupled systems are suggested as a balance, providing both control and flexibility for interactive

¹ University of Salerno
e-mail: rcelenta@unisa.it

² Sant' Anna School of Advanced Studies, Pisa
e-mail: valentina.cucino@santannapisa.it

³ University of Salerno
e-mail: rfeola@unisa.it

⁴ University of Salerno
e-mail: chcrudele@unisa.it

learning and innovation. Social proximity includes the depth of interpersonal connections among agents at a microscopic level, based on trust established through various personal ties such as friendships, family ties, and shared experiences. It is crucial to understand that these connections are not solely based on formal agreements but are rather rooted in mutual understanding and reliability; therefore, in social proximity, the foundation lies in trust-based relationships. A third dimension of proximity identified by Boschma (2005) is Institutional proximity, which is instead associated with the macro-level institutional framework. Therefore, new studies are needed to analyze the role of multilevel proximities in the entrepreneurial ecosystem formation process. As highlighted in the literature (Acs et al., 2014), entrepreneurs are central actors in the EE building process. However, the success of EE performances relies on interactions among three components: individuals, organizations, and institutions (Alvedalen & Boschma, 2017; Theodoraki et al., 2022). Following this approach, the individual is defined in a broader sense; indeed, as argued by some scholars (Qian et al., 2013), not all individuals involved in the EE are connected to the firm and thus to market opportunity, but they are involved in the entrepreneurial ecosystem because they have different roles and objectives. In this sense, it is interesting to study the motivations of different types of people, organizations, and institutions deciding to become part of the EE, in order to identify the lowest common denominator. Careful work in this direction has been carried out by Audretsch and Belitski (2017), who described the relationships within the six domains of the ecosystem framework conditions. Important for the development of the literature is the integrative model of entrepreneurial ecosystems proposed by (Stam & Van de Ven, 2021) consisting of ten elements (formal institutions, culture, networks, physical infrastructure, demand, leadership, talent, knowledge, finance, and intermediate services. These elements are mutually interdependent and co-evolve in a territory).

Purpose of the paper. In recent years, there has been a considerable increase in interest in Entrepreneurship Ecosystems (Audretsch and Link, 2019), as policymakers, practitioners, and scholars have recognized their valuable role in supporting the development of economies and societies (Autio et al., 2018; Cloitre et al., 2022). Concurrently, the growing interest in entrepreneurship ecosystems has focused on understanding the role of entrepreneurship in the dynamics of value creation and capture within complex and multilevel economic systems (Acs et al., 2017; Simatupang et al., 2015; Volkmann et al., 2021).

In particular, scholars in entrepreneurship and management have emphasized the importance of interactions among different actors within an entrepreneurship ecosystem in terms of creating value for the territorial context. Despite dynamism being foundational to the definition of an entrepreneurship ecosystem (Cohen, 2006; Audretsch and Belitski, 2016; Acs et al., 2014), current literature appears to adopt a predominantly static framework in analyzing actor relationships, with little attention to ecosystem evolution. This approach, in our view, fails to account for changes and dynamics that may occur within the ecosystem. Indeed, despite the conceptual appeal of network dynamics, empirical analysis of network dynamics in entrepreneurship studies remains scarce (Hoang & Antoncic, 2003; Gustafsson & Autio, 2011), highlighting the need for a more dynamic approach to studying entrepreneurship ecosystems that considers network evolution over time.

The aim of this study is twofold: firstly, we aim to examine the interconnection of various dimensions of proximity (Boschma, 2005) in the development of entrepreneurship ecosystems. By analyzing the relationship between these dimensions, we seek to gain a deeper understanding of how they collectively influence the creation and growth of successful entrepreneurship ecosystems. Many authors underscore various proximities as central elements in ecosystem formation. Specifically, significant attention is given to geographical proximity (Cohen 2006, p. 3; Stam and Spigel 2017, p. 1). However, another central element in ecosystem development, yet to be thoroughly analyzed, is "the sharing of the same goal" (Theodoraki, 2018). The second objective is to analyze the social aim within the theoretical framework of entrepreneurship ecosystems, particularly understanding how different types of proximity impact the development of Social Entrepreneurial Ecosystems. The main goal of the research is not to explain variations in specific outcome variables but to analyze the network creation process by examining the role of proximity in entrepreneurship ecosystem development. While literature extensively highlights proximity as a central element in entrepreneurship ecosystem development, little attention has been given to other types of proximity beyond geographical (Ancona et al., 2023). This article aims to demonstrate how the presence of various types of proximity, along with the diffusion of new communication and network technologies, can support the development of entrepreneurship ecosystems that do not exhibit strong spatial proximity. Simultaneously, with this work, we aim to contribute to the development of research that links entrepreneurship ecosystems with sustainability research in a broad sense (Theodoraki et al., 2018; Cloitre et al., 2022; Theodoraki et al., 2022; Audretsch et al., 2024), not only tied to the environment but also to social sustainability (Audretsch et al., 2019; Volkmann et al., 2021), understood as the ability to generate value for all stakeholders involved in the ecosystem, including community stakeholders. Given the increasing pressure of fundamental social challenges, which include but are not limited to climate change, it is increasingly necessary to investigate the peculiarities of sustainable business creation through the perspective provided by the concept of Social Entrepreneurial Ecosystems. However, despite the importance of the theme, so far only a small number of studies have explicitly focused on issues regarding the social goals of business environments within the conceptual framework of ecosystems (Volkmann et al., 2021). Therefore, starting from the notion of a Social Entrepreneurial Ecosystem (SEE), understood as a concept that relates entrepreneurship ecosystems to sustainability issues and focuses on promoting sustainable entrepreneurship (Volkmann et al., 2021), we have decided to analyze an entrepreneurship ecosystem that aims to adopt a multi-level approach to social entrepreneurship to address global challenges (Welter et al., 2019): the B-Corp movement. The B Corp movement is a global initiative aimed at redefining success in the business world by promoting companies that prioritize social and environmental impact alongside financial profit. B Corps are for-profit companies that choose to undergo a certification

process by the non-profit organization B Lab, which evaluates their overall performance in terms of governance, social and environmental aspects, as well as their responsibility and transparency. To achieve B Corp certification, companies must meet rigorous standards of social and environmental performance, legal accountability, and transparency. These standards include various aspects of business operations, defined as "Impact Areas": Governance, Workers, Community, Environment, and Customers. The B Corp movement aims to encourage businesses to adopt more sustainable and responsible practices, with the ultimate goal of achieving positive outcomes for society and the environment. Through voluntary adherence to these standards and successful certification, B Corps demonstrate their commitment to using business activity as a force for the common good. Since its inception, the B Corp movement has seen significant growth, with thousands of certified B Corps operating in various sectors and regions worldwide. These companies range from small startups to large multinational corporations, united by their shared commitment to balancing profit with a broader purpose and generating a positive impact on the world.

Methodology. In the study of entrepreneurship ecosystems, various methods can be employed (Stangler and Bell-Masterson, 2015). However, according to Spilling (1996), the multitude of actors, their roles, and the different factors of complexity that characterize ecosystems make their study more intricate. Therefore, a qualitative method "seems particularly appropriate for exploratory studies in entrepreneurship research" (Dana and Dana, 2005, p.86). Given the exploratory nature of the research question and objectives, we decided to employ an in-depth qualitative research methodology to develop a theoretical framework. To achieve this goal, we followed the strategy recommended by Glaser and Strauss (2017) to develop a theory based on empirical data. Our research design is based on a single case study since, as widely recognized in the literature, it is a relevant methodology for exploring and understanding complex phenomena still underexposed to the research community (Yin, 2013). The study of a single case was based on the national BCorp ecosystem, chosen as a case study to extract the theoretical framework. In particular, we scrutinize the ecosystem of B Corps within the Italian landscape. The selection of the Italian context is motivated by several factors. Firstly, various studies have highlighted the active engagement of Italian enterprises in collaborative endeavors aimed at both entrepreneurial and social objectives (Cucino et al., 2024; Ferrigno and Cucino, 2021). Secondly, research on the Italian context elucidates how Italian enterprises are proficient in fostering collaborations that yield social innovation within the community (Annesi and Cucino, 2023). Finally, since the first B Corp was certified in Italy in 2013, the Italian movement has grown significantly, reaching 100 companies in 2018 and 240 in 2023, making Italy the second country in the European Union in terms of the number of B Corps (www.bcorporation.eu).

The analysis proceeded in three stages. Initially, we reviewed the literature on entrepreneurial ecosystems and proximity to ascertain any convergence between the core elements of the entrepreneurial ecosystem and the BCorp model. Subsequently, we assessed whether the BCorp movement could be categorized as a sustainable social entrepreneurship ecosystem, necessitating alignment with the ecosystem components delineated in Cohen's (2006) model and congruence with the entrepreneurial ecosystem model formulated by Stam (2015).

In the third phase, currently underway, we are gathering information on Italian BCorps. Specifically, we are collating secondary data on Italian BCorps to examine individual ecosystems. Following this, we will conduct qualitative interviews with select representatives of Italian BCorps. These data will facilitate triangulation in constructing the process of creating the entrepreneurial social ecosystem and delineate the role of proximity in each phase.

Results. The primary aim of this study is to furnish an analytical framework that elucidates the role of various types of proximity in fostering the development of a social entrepreneurship ecosystem. While existing literature predominantly concentrates on geographical proximity, our research brings attention to other forms of proximity, notably institutional proximity, which have been comparatively overlooked. Through an examination of an unconventional entrepreneurial ecosystem, our objective is to illustrate how robust levels of various proximities, particularly institutional ones, facilitate the establishment of ecosystems among actors who may not be physically proximate.

Specifically, our study has delineated a three-phase process in constructing the entrepreneurial ecosystem. In the initial phase, termed "community building," actors with similar skills and knowledge facilitate mutual learning (cognitive proximity). Subsequently, in the "legal recognition" phase, the entrepreneurial ecosystem endeavors to attain legal acknowledgment of the entrepreneurial endeavor (institutional proximity). Moving to the "development" phase, emphasis is placed on internal and inter-organizational relationships (organizational proximity), with companies seeking financial backing to fortify the social entrepreneurial ecosystem. The final phase entails consolidation, characterized by interpersonal connections among agents founded on trust established through personal ties (social proximity).

Furthermore, our research delves into the specific dynamics within each phase, aiming to provide insights into how proximity influences the interactions and collaborations among ecosystem actors. By comprehensively examining the interplay between different forms of proximity and the various phases of ecosystem development, we seek to contribute to a deeper understanding of the mechanisms underpinning the emergence and growth of social entrepreneurship ecosystems.

Research limitations. The analysis is conducted on the Italian BCorp movement, and therefore, the study is conditioned by the specific characteristics of the Italian context. Even though the BCorp movement is international and the companies adhering to it follow uniform criteria, belonging to a country, with all that entails legally, socially, economically, and culturally, significantly shapes the approach of individual actors and thus the ecosystem. It is also for this reason that the decision was made to analyze the BCorp movement at the national level rather than internationally. Despite the efforts made in this study, there are certainly opportunities for further research in the field of entrepreneurship ecosystems and sustainability. It would be interesting to expand the research by including a broader sample of

entrepreneurship ecosystems, both at the national and international levels, to obtain a more comprehensive and comparative view of proximity dynamics. Additionally, it could be useful to examine in more detail the impact of different dimensions of sustainability (environmental, social, and economic) on the entrepreneurship ecosystem and how these dimensions mutually influence the value creation process.

Managerial implications. The research presents intriguing managerial implications for the development of entrepreneurial ecosystems, highlighting several key considerations. One of the main observations concerns understanding the dynamics of "proximity" within ecosystems. In addition to traditional geographical proximity, the importance of other types of proximity, such as institutional and social, is emphasized. This means that managers can focus not only on the physical co-location of companies within ecosystems but also on developing strong institutional relationships and deep social ties among the involved actors.

Furthermore, the importance of promoting social entrepreneurship within ecosystems is clearly evident (Thompson et al., 2018). The research suggests that social and environmental goals can be crucial drivers for ecosystem development, alongside traditional financial objectives. Managers can draw inspiration from the B Corp movement, which emphasizes balancing profit with social and environmental impact, to embed sustainability into their ecosystem strategies (Volkman et al., 2021). Additionally, the study underscores the significance of fostering collaboration and goal-sharing among ecosystem actors. By articulating a clear vision and mission, aligning stakeholders around common objectives, and cultivating a culture of trust and mutual understanding, managers can create an environment conducive to collaborative (Annrsi and Cucino, 2023) and regenerative (Cucino, 2023) innovation within ecosystems. Moreover, the research advocates for adopting a dynamic approach to ecosystem development, considering network evolution over time. Managers should continuously assess and adapt their strategies in response to changing dynamics (Chesbrough, 2020; Cucino et al., 2024), leveraging insights from network analysis to identify emerging opportunities and challenges.

Overall, the findings highlight the multifaceted nature of entrepreneurial ecosystems and the importance of nurturing diverse forms of proximity, collaboration, and sustainability to drive ecosystem development and create lasting value for all stakeholders involved. Managers can leverage these insights to cultivate thriving and resilient ecosystems that contribute to economic growth, social welfare, and environmental sustainability.

Overall, the findings highlight the multifaceted nature of entrepreneurial ecosystems and the importance of cultivating different forms of proximity, collaboration and sustainability to drive ecosystem development and create lasting value for all stakeholders involved. Managers can leverage this information to cultivate thriving, resilient ecosystems that contribute not only to resilient business growth (Cucino et al., 2022; Mason & Brown, 2014); but also to community economic growth, social well-being, and environmental sustainability.

Originality of the paper. In conclusion, this study aims to examine the interconnection of various dimensions of proximity in the development of entrepreneurship ecosystems. Through a comprehensive analysis of the relationships between geographical, institutional, and other forms of proximity, the aim is to better understand how these factors influence the creation and growth of entrepreneurship ecosystems. Additionally, by studying the BCorp movement, the goal is to contribute to the debate on sustainability in entrepreneurship ecosystems and provide a new perspective on the interaction between sustainability and entrepreneurship. To date, few studies have analyzed goal-sharing (Theodoraki, 2018) as a relevant proximity in the development of entrepreneurship ecosystems. Moreover, to our knowledge, there are no studies that have analyzed the BCorp movement through the lens of the Entrepreneurship Ecosystem. Despite the limitations and possible future directions, it is hoped that this work can provide a significant contribution to the understanding and development of sustainable entrepreneurship ecosystems.

References

- ACS Z.J., AUTIO E., SZERB L. (2014), "National systems of entrepreneurship: Measurement issues and policy implications", *Research Policy*, vol. 43, n. 3, pp. 476-494.
- ACS Z.J., STAM E., AUDRETSCH D.B., O'CONNOR A. (2017), "The lineages of the entrepreneurial ecosystem approach", *Small Business Economics*, vol. 49, n. 1, pp. 1-10.
- ALDRICH H.E. (1990), "Using ecological perspective to study organizational founding rates", *Entrepreneurship Theory and Practice*, vol. 14, n. 3, pp. 7-24.
- ALVEDALEN J., BOSCHMA R. (2017), "A critical review of entrepreneurial ecosystems research: Towards a future research agenda", *European Planning Studies*, vol. 25, n. 6, pp. 887-903.
- ANCONA A., CINELLI M., FERRARO G. et al. (2023), "Network-based principles of entrepreneurial ecosystems: a case study of a start-up network", *Small Bus Econ.* <https://doi-org.unisa.idm.oclc.org/10.1007/s11187-023-00738-6>.
- ANNESI N., CUCINO V. (2023). La collaborazione locale come driver all'innovazione sostenibile: uno studio esplorativo sugli attori chiave nel settore agroalimentare. In *Sinergie-SIMA Management Conference Proceedings Rediscovering local roots and interactions in management* (Vol. 1, No. 1, pp. 625-630). Fondazione CUEIM.
- AUDRETSCH D.B., LINK A.N. (2019), "Embracing an entrepreneurial ecosystem: an analysis of the governance of research joint ventures", *Small Business Economics*, vol. 52, n. 2, pp. 429-436.
- AUDRETSCH D.B., BELITSKI M. (2017), "Entrepreneurial ecosystems in cities: Establishing the framework conditions", *The Journal of Technology Transfer*, vol. 42, n. 5, pp. 1030-1051.
- AUDRETSCH D.B., BELITSKI M., EICHLER G.M., SCHWARZ E. (2024), "Entrepreneurial ecosystems, institutional quality, and the unexpected role of the sustainability orientation of entrepreneurs", *Small Business Economics*, vol. 62, n. 2, pp. 503-522.
- AUTIO E., NAMBIAN S., THOMAS L.D.W., WRIGHT M. (2018), "Digital affordances, spatial affordances, and the genesis of entrepreneurial ecosystems", *Strategic Entrepreneurship Journal*, vol. 12, n. 1, pp. 72-95.

- BALLAND P.A., SUIRE R., VICENTE J. (2013), "Structural and geographical patterns of knowledge networks in emerging technological standards: Evidence from the European GNSS Industry", *Economics of Innovation and New Technology*, vol. 22, n. 1, pp. 47-72. doi:10.1080/10438599.2012.699773
- BOSCHMA R.A. (2005), "Proximity and innovation. A critical assessment", *Regional Studies*, vol. 39, n. 1, pp. 61-74.
- BOSCHMA R.A., TER WAL A.L. (2007), "Knowledge networks and innovative performance in an industrial district: The case of a footwear district in the South of Italy", *Industry and Innovation*, vol. 14, n. 2, pp. 177-199. doi:10.1080/13662710701253441
- BOSCHMA R., FRENKEN K. (2010), "The spatial evolution of innovation networks. A proximity perspective", in R. Boschma & R. Martin (Eds.), *The handbook of evolutionary economic geography*, pp. 120-135, Edward Elgar.
- CHESBROUGH H. (2020), "To recover faster from Covid-19, open up: Managerial implications from an open innovation perspective", *Industrial Marketing Management*, vol. 88, pp. 410-413.
- COHEN B. (2006), "Sustainable valley entrepreneurial ecosystems", *Business Strategy and the Environment*, vol. 15, n. 1, pp. 1-14.
- CLOITRE A., DOS SANTOS PAULINO V., THEODORAKI C. (2022), "The quadruple/quintuple helix model in entrepreneurial ecosystems: an institutional perspective on the space case study", *R&D Management*. <https://doi.org/10.1111/radm.12547>
- COOPER A.C., FOLTA T., WOO C. (1991), "Information acquisition and performance by start-up firms", in N. C. Churchill, W. D. Bygrave, J. G. Covin, D. C. Sexton, D. P. Slevin, K. H. Vesper, & W. E. Wetzel, Jr., (Eds.), *Frontiers of entrepreneurship research*, pp. 276-290, Babson College.
- CUCINO V., BOTTI A., CELENTA R., BALDEGGER R. (2022, APRIL), "Changing the Rules of the Game: The Role of Antifragility in the Survival of Innovative Start-Ups". In *The International Research & Innovation Forum* (pp. 499-507). Cham: Springer International Publishing.
- CUCINO V., FERRIGNO G., CRICK J., PICCALUGA A. (2024). Identifying entrepreneurial opportunities during crises: a qualitative study of Italian firms. *Journal of Small Business and Enterprise Development*, vol. 31, n. 8, pp. 47-76.
- FERRIGNO G., CUCINO V. (2021). Innovating and transforming during COVID-19: insights from Italian firms. *R&D Management*, vol. 51, n. 4, pp. 325-338.
- GUSTAFSSON R., AUTIO E. (2011), "A failure trichotomy in knowledge exploration and exploitation", *Research Policy*, vol. 40, n. 6, pp. 819-831.
- HITE J.M., HESTERLY W.S. (2001), "The evolution of firm networks: From emergence to early growth of the firm", *Strategic Management Journal*, vol. 22, n. 3, pp. 275-286.
- HOANG H., ANTONCIC B. (2003), "Network-based research in entrepreneurship: A critical review", *Journal of Business Venturing*, vol. 18, n. 2, pp. 165-187.
- MASON C., BROWN R. (2014), "Entrepreneurial ecosystems and growth oriented entrepreneurship", *Final report to OECD, Paris*, vol. 30, n. 1, pp. 77-102.
- NIGRI G., DEL BALDO M., AGULINI A. (2020), "The Mondora Method: Quantum Leaders in Benefit Corporations", *Entrepreneurship Research Journal*, vol. 10, n. 4, p. 20190309.
- SIMATUPANG T.M., SCHWAB A., LANTU D. (2015), "Introduction: building sustainable entrepreneurship ecosystems", *SSRN Electronic Journal*.
- STAM E. (2015), "Entrepreneurial ecosystems and regional policy: A sympathetic critique", *European Planning Studies*, vol. 23, n. 9, pp. 1759-1769.
- STAM E., SPIGEL B. (2017), "Entrepreneurial ecosystems", in R. Blackburn, D. De Clercq, J. Heinonen, & Z. Wang (Eds.), *The SAGE handbook of small business and entrepreneurship*, SAGE.
- STANGLER D., BELL-MASTERSON J. (2015), "Measuring an entrepreneurial ecosystem", Kauffman Foundation Research Series on City, Metro, and Regional Entrepreneurship, Kansas City, MO.
- STUBBS W. (2019), "Strategies, practices, and tensions in managing business model innovation for sustainability: The case of an Australian BCorp", *Corporate Social Responsibility and Environmental Management*, vol. 26, n. 5, pp. 1063-1072.
- THEODORAKI C., MESSEGHEM K., RICE M.P. (2018), "A social capital approach to the development of sustainable entrepreneurial ecosystems: an explorative study", *Small Business Economics*, vol. 51, n. 1, pp. 153-170.
- THEODORAKI C., CATANZARO A. (2022), "Widening the borders of entrepreneurial ecosystem through the international lens", *The Journal of Technology Transfer*, vol. 47, n. 2, pp. 383-406.
- THEODORAKI C., DANA L.P., CAPUTO A. (2022), "Building sustainable entrepreneurial ecosystems: A holistic approach", *Journal of Business Research*, vol. 140, pp. 346-360.
- THOMPSON T.A., PURDY J.M., VENTRESCA M.J. (2018), "How entrepreneurial ecosystems take form: Evidence from social impact initiatives in Seattle", *Strategic Entrepreneurship Journal*, vol. 12, n. 1, pp. 96-116.
- QIAN H., ACS Z.J., STOUGH R.R. (2013), "Regional systems of entrepreneurship: the nexus of human capital, knowledge and new firm formation", *Journal of Economic Geography*, vol. 13, n. 4, pp. 559-587.
- TER WAL A.L.J., BOSCHMA R.A. (2009), "Applying social network analysis in economic geography: Framing some key analytic issues", *The Annals of Regional Science*, vol. 43, n. 3, pp. 739-756.
- VILLELA M., BULGACOV S., MORGAN G. (2021), "B Corp Certification and Its Impact on Organizations Over Time", *Journal of Business Ethics*, vol. 170, n. 2, pp. 343-357.
- VOLKMANN C., FICHTER K., KLOFSTEN M., AUDRETSCH D.B. (2021), "Sustainable entrepreneurial ecosystems: An emerging field of research", *Small Business Economics*, vol. 56, n. 3, pp. 1047-1055.
- WELTER F., BAKER T., WIRSCHING K. (2019), "Three waves and counting: the rising tide of contextualization in entrepreneurship research", *Small Business Economics*, vol. 52, n. 2, pp. 319-330.

Purpose-driven Clusters in the Era of Sustainability

MICHELE SIMONI¹ MARIA CRISTINA PIETRONUDO² EVA PANETTI³

Abstract

Despite the growing body of empirical evidence, theoretical research on the role of industrial clusters in sustainable development remains limited. Existing studies often apply recent cluster literature to interpret real-world cases, providing only partial insights. This paper seeks to fill this gap by addressing the conversation on cluster dynamics to comprehensively understand both their potentialities and limitations in fostering sustainable development. Our paper focuses on the theoretical aspects of clusters within the context of the sustainable economy, representing a novel contribution to the literature. While prior research has primarily examined standard industrial configurations to explore the effects of agglomeration, our study aims to delve deeper into purpose-driven clusters. These clusters exhibit an overarching commitment not limited to industrial and economic interests but extended to preserving and protecting the environment in which they operate. Specifically, we increasingly observe cases of purpose-driven clusters involved in protecting natural resources. By offering a theoretical framework for understanding clusters within the context of sustainability, this research aims to advance scholarly discourse, advancing some theoretical propositions on purpose-driven clusters and suggesting some directions for policy decisions in pursuing a more sustainable future.

Keywords: cluster; purpose; sustainability; natural resources protection

Framing of the research. Sustainable challenges, as well as the diffusion of new and transversal technologies, are changing the industrial configurations of firms. In particular, the increasing sustainable challenges require the involvement of several firms and actors from different economic activities, pushing firms toward new forms of agglomeration to disseminate and implement sustainable development initiatives. These new configurations of actors are coalescing around inspiring aims, more precisely, around a common purpose that enhances their commitment to the environment (e.g., natural ecosystems) and society in which they operate, rather than solely prioritizing the profitability of cluster's actors (Hollensbe et al., 2014). Some academics draw upon cluster theory to propose ideal collective initiatives for promoting sustainable development (Lis and Radzio, 2023; Baldassare et al., 2019; Berkowitz, 2018; Ratten, 2018). Recently, there has been growing interest in the link between sustainable goals and clusters in academia (Derlukiewicz et al., 2020; Glinskiy et al., 2016). Clusters, intended as collective actors working with decision-makers to exploit and co-create regional advantages, can elevate specific ideas related to sustainable development to higher levels of diffusion (Hervás-Oliver, 2021). This cooperation is highly effective in coordinating joint efforts to implement changes (Bailey et al., 2018). The European expert group on clusters (2021) has affirmed that clusters have the potential to accelerate the twin green and digital transition, build resilience, and boost recovery. For instance, terms like blue economy, space economy, bioeconomy, or, more recently, forest economy (World Economic Forum, 2022) are spreading and entering our everyday language. These terms identify clusters composed of private and public actors engaged in different economic activities but who share a purpose: promoting responsible and innovative use of natural resources (Qui et al., 2024). The overarching goal of such clusters is to protect and preserve natural resources while promoting the adoption of sustainable practices and strategies that strike a balance between economic prosperity and ecological resilience. The pursuit of sustainable development is undoubtedly challenging. While clusters possess the capacity to influence firms' strategic objectives, foster social trust and acceptance, introduce and diffuse innovative activities, and enhance knowledge transfer, their effectiveness is not universal. The success of clusters hinges on a complex interplay of firm-specific and contextual factors. Moreover, the endeavor for sustainable development introduces new and intricate challenges that even configurations seemingly aligned with sustainability goals struggle to address. According to Nilson, Griggs, and Visbeck (2016) there are three primary challenges linked to sustainable goals: collective actions among different industries and different levels of action, complex compromise among different firms' aims, and, in general, among economic and sustainable aims; long-lasting mechanisms of coordination and action implementation. Additionally, Bennich et al. (2021) state that sustainability initiatives and agendas are not always coherent. While they

¹ University of Napoli Parthenope
e-mail: michele.simoni@uniparthenope.it

² University of Napoli Parthenope
e-mail: mariacristina.pietronudo@uniparthenope.it

³ University of Napoli Parthenope
e-mail: eva.panetti@uniparthenope.it

promote virtuous changes, they inhibit or nullify respective visions and goals. More precisely, these new cluster configurations represent an agglomeration of industries that, to address contemporary sustainability issues efficiently, require more attention in two key areas: firstly, designing shareable strategies, and secondly, mitigating negative interactions by seeking trade-offs that maximize positive interactions (Bowen et al., 2017; Nilsson et al., 2018). For instance, in the case of the blue economy cluster, the aim is to preserve natural water resources. This purpose entails collaboration and convergence among maritime, energy, and tourism companies to reduce water pollution, minimize water wastage, preserve water wildlife, regulate the use of water-related sources of food, and address the unequal distribution of this vital resource (Shi et al., 2020; EU, 2021). These industries have different or overlapping sustainable goals, necessitating the complex negotiation of private and shared interests and priorities.

In the study of the bioeconomy, Bennich et al. (2021) have demonstrated that achieving theoretical sustainable objectives, such as those outlined in the 2030 agenda, is challenging in practice. Through quantitative analysis and simulation, they have revealed the difficulty in maintaining high levels of production efficiency while protecting biological resources. Therefore, alongside new coordination mechanisms, innovative solutions and processes are required to introduce disruptive ideas that enable a better balance between economic and sustainable goals.

Cluster theory has shown the potential of clusters in introducing and diffusing innovation (Huang and Wang, 2018). These findings provide additional evidence for scholars to consider clusters as a critical solution for sustainability. Qui et al. (2024) argue that clusters can promote the efficient use of resources through the innovative environment they create, thereby accelerating progress toward sustainability.

Despite this evidence and the validation by key institutional actors (e.g., the European Union), the advantages of clusters, as well as their innovation dynamics, should be carefully generalized and adapted to the context of this new cluster form in the era of sustainability, which we call purpose-driven clusters. Therefore, a more accurate analysis of cluster theory and a revision of theoretical assumptions are required, considering that in this new configuration of clusters, actors are aggregated around a joint and honorable purpose designed beyond the firms' mission statements but for the betterment of society.

Purpose of the paper. Hence, this trend, widely adopted by public actors (national, regional, local, and city governments) and associations or meta-organizations to promote sustainable and productive territorial strategies, demonstrates how the concept of clusters, though criticized by many theorists, may represent a valid solution for addressing sustainable challenges. However, such a critical role attributed to clusters re-opens a discussion on the topic. It reintroduces several unresolved issues related to cluster conceptualization, previously proposed by Martin and Sunley (2003). These include the level of industrial aggregation or the scope of industrial association and activities that could be included in a cluster, the lack of clear boundaries (both industrial and geographic), the strength of links, economic specialization, and the level of action in clustering processes (e.g., interfirm linkages, knowledge spillover, rivalry, and business and social networks).

Recent literature linking sustainability and clusters appears to reintroduce a consolidated concept without adapting it to the contextual application (Alberti and Belfanti, 2019), neglecting crucial aspects of sustainable challenges that may require the enrichment of cluster theory. We propose including sustainable clusters within a broader category of 'purpose-driven clusters' and accordingly reconsidering three fundamental dynamics inspired by Martin and Sunley's (2006) framework: aggregation rationale, proximity and boundaries, and strength of ties. The derived argumentation provides a critical review of purpose-driven cluster characteristics, proposing a set of propositions to explore for advancing research in this field.

Methodology. The paper proposes a theoretical framework based on the literature on industrial clusters to identify new theoretical propositions on clusters driven by sustainability purposes. Although the theory of clusters is well-established, it must be adapted to fully capture the peculiarities and dynamics of clusters that address current global needs in an era of sustainability. Recognizing that theory is an "abstraction and a simplification of reality" (Makadok, Burton, and Barney, 2018), we seek to identify salient aspects of cluster configurations that require revision or discussion for better practical application.

Our theory-building process follows Makadok, Burton, and Barney's (2018) framework, which introduces five levers of theorizing: modes of theorizing, levels of analysis or phenomena, causal mechanisms, constructs and variables, and boundary conditions. We focus on the blue economy, space economy, and bioeconomy. Adopting the same level of analysis of existing theories, we question the validity of traditional economic causal mechanisms such as agglomeration, knowledge transfer, cooperation, and innovation in light of shared sustainability purposes. Accordingly, we redefine, clarify, and broaden the cluster construct by discussing its most relevant dimensions of analysis: aggregation reason, proximity and boundaries, and ties.

Preliminary Results. In this ongoing and abbreviated version of the paper, we outline the critical aspects of the theoretical progression that lead to framing the concept of purpose-driven clusters. Clusters refer to a geographic concentration of interconnected firms collaborating to create a competitive advantage for themselves and the economy in which they operate (Porter, 1990). The concept of local concentration was initially introduced by Marshall (1980, 1920) with the notion of industry clusters and industrial districts, emphasizing the interconnection of economic activities, known as economic linkages. However, the success of Silicon Valley (Saxenian, 1994) and the academic significance of Porter's seminal work on "The Competitive Advantage of Nations" (1990) revitalized the concept of agglomeration among economic geographers, sociologists, and innovation economists, introducing a socio-cultural dimension.

Subsequently, this resurgence led to a proliferation of works and interpretations of clusters, resulting in theoretical and empirical confusion across various economic disciplines analyzing the phenomenon (Martin and Sunley, 2003;

Maskell and Kebir, 2006; Maskell and Malmberg, 2007). Although the cluster concept was operationalized differently, two core elements have remained central in most cluster definitions: the presence of related activities and the proximity (not necessarily geographical) of interconnected individuals and organizations (Catini et al., 2015).

The literature derives various benefits and advantages from these critical elements, assessed through empirical evidence. Some of these benefits can be traced back to Marshall's theories, wherein spatial and process adjacencies contribute to agglomeration economies. These economies, resulting from better access to skilled labor, specialized suppliers, and knowledge spillovers, lead to enhanced knowledge sharing, cost sharing and minimization, scope and scale economies, mutual trust, and virtuous competition (Marshall, 1920). Additionally, apart from internal benefits, agglomeration also extends positive effects at the societal level by increasing productivity, economic growth, and innovation within the local area where the cluster operates (Porter, 1990).

Although core elements and many of these benefits have been widely evidenced in different configurations of clusters (e.g., industrial clusters, regional clusters), the following results highlight the need for adaptations when clusters are proposed as a solution to pursue sustainable development, particularly in configurations driven by purpose, where different firms are required to collaborate not for optimizing economic goals, but for interests of future generation such as for the natural resource protection.

As Martin and Sunley (2003) outlined, the level of industrial aggregation and the range of industrial relationships and activities included in a cluster have evolved over time, shifting from product/process aggregation to geographic location. In the era of sustainability, the reason for aggregation undergoes further variation: following a common purpose based on the protection of a shared resource. Current cluster configurations center around a specific and shared natural resource, such as water, soil, or space. Such a broad level of aggregation results in the inclusion of heterogeneous actors from diverse industries or clusters.

Therefore, we develop the following proposition:

P1. In a purpose-driven cluster, actors are heterogeneous in nature and specialization but share a common positive intent toward society.

Indeed, since the beginning, the cluster concept has described links among entities with different characteristics in terms of industries and types of actors (corporations, associations, institutions), but with a more precise individual aim focused on a specific activity for the creation and distribution of a final product or service in a particular area. In contrast, in a natural resource-based cluster, the overall purpose is much more explicit than the individual purpose. In other words, the general goal of "resource protection" is more evident than what each firm in the cluster should do concretely to reach the common purpose.

Consequently, the greater the number of involved actors, the more pronounced the lack of clear industrial and geographic boundaries. The proximity element requires specific argumentation to identify boundaries and belonging to the cluster. Referring to the five dimensions of proximity proposed by Boschma (2004) - geographical, cognitive, social, organizational, and institutional proximity - we argue that in a resource-based cluster:

a) Geographical proximity regains attention but is related to the location of the natural resources to be protected rather than to the location of other cluster's firms. For example, all international shipping companies, even those not based in the Mediterranean, are included in protecting the Mediterranean Sea.

b) Cognitive proximity, intended as the similarity of competencies and technologies, risks being reduced and dispersed due to the variety of actors involved. Therefore, it is helpful to leverage cognitive proximity to sustainable objectives.

c) Organizational proximity becomes more relevant due to the necessity of work division not only based on firm specialization but also on firms' linkage with the sustainable problems to solve and the sustainable actions needed, aiming to avoid overlapping and frictions.

d) Social proximity is less characteristic, as stable relationships require dynamics and openness to avoid compromising sustainable transactions.

e) Institutional proximity maintains its relevance but increases in complexity due to the alignment of norms among multiple industries and resources.

Therefore, we develop the following propositions:

P2. In a purpose-driven cluster, boundaries are blurred and extensive. The geographical identification of actors involved is associated with the localization of natural resources.

P3. In a purpose-driven cluster, cognitive proximity is measured considering similarities in sustainable objectives.

P4. In a purpose-driven cluster, organizational proximity is associated with the commonality of problems to solve and the required action.

P5. In a purpose-driven cluster, social proximity exhibits instability and dynamism.

P6. In a purpose-driven cluster, the institutional proximity is weak and associated with heterogeneity of norms.

The variety of links required to achieve sustainable development goals across industries also affects the strength of ties that have been useful in cluster evidence thus far. The lack of necessary localization, as well as the mix of companies and industries, suggests a lack of strong ties (Pablo-Martí and Arauzo-Carod, 2020) or the dispersion of strong ties, leading to the proliferation of weak ties and producing a mix of consequences on knowledge transfer and innovation (Huang and Wang, 2018). However, unlike the traditional view of clusters, where cluster activities are driven by small

but influential groups of actors with strong ties, in a resource-based cluster, activities are carried out by multiple groups with separate strong ties.

Furthermore, unlike Huang and Wang (2018), who illustrated the evolution over time between weak and strong ties in industrial clusters considering trust and knowledge complexity, we hypothesize a less linear relationship among different types of ties. This nonlinearity may result from the incidence and necessity to address multiple (and not simply aligned) sustainable aims. In other words, the network geometry will be variable (a mix of strong and weak ties) and switch between weak and strong relationships and vice versa. Revising ties' purpose, boundaries, and strengths has consequences in explaining coordination mechanisms among entities, conflicts and solutions, knowledge transfer, and innovation.

Contrasting yet virtuous dynamics can be observed by focusing on knowledge and innovation. The negative aspects include the presence of forced weak ties, which are firm connections mandated by norms and regulations that may not easily lead to explorative knowledge and radical innovation, as well as strong and inhibitory ties resulting from existing long-term relations that could hinder disruptive changes, favoring incremental and continuous solutions over radical ones. On the positive side, the heterogeneity of actors favors the variety of ties and the emergence of recurring weak relationships, which could facilitate the emergence of iterative innovation.

These theoretical arguments lead us to develop the seventh proposition:

P7. In a purpose-driven cluster, a spectrum of strong and weak ties exists, with non-linear relationships, fostering the emergence of iterative innovation.

Table 1 sum-up preliminary results and propositions.

Table 1. Characteristics and proposition of purpose-driven cluster

Cluster elements	Characteristics	Proposition
Aggregation Reason	Overarching and common purpose for benefiting the natural environment and society	P1. In a purpose-driven cluster, actors are heterogeneous in nature and specialization but share a common positive intent toward society.
Boundaries and Proximity	Boundaries Spread and blurred boundaries Proximity -Geography of resources -Cognitive proximity of sustainable objectives -Organizational proximity based on problems and action, not only on specialization -Dynamic and open social proximity -Institutional proximity among industries and resources	P2. In a purpose-driven cluster, boundaries are blurred and extensive. The geographical identification of actors involved is associated with the localization of natural resources. P3. In a purpose-driven cluster, cognitive proximity is measured considering similarities in sustainable objectives. P4. In a purpose-driven cluster, organizational proximity is associated with the commonality of problems to solve and the required action. P5. In a purpose-driven cluster, social proximity exhibits instability and dynamism. P6. In a purpose-driven cluster, the institutional proximity is weak and associated with heterogeneity of norms.
Ties (strong vs weak)	Ties varieties: strong and weak Nonlinear relationship among weak and strong ties, based on incidence and necessity	P7. In a purpose-driven cluster, there are various strong and weak ties, with non-linear relationships that favor the rise of recurring innovation.

Research limitations. Still in progress, the paper delves into theoretical discussions on clusters and sustainability, specifically focusing on a cluster configuration aimed at preserving a natural resource. These configurations represent a common form of agglomeration driven by a shared purpose, which we label "Purpose-driven Clusters." Some forms of clusters for sustainability have already been addressed in the literature, particularly those of eco-industrial clusters, which are excluded from our discussion as they align more with the traditional description of industrial clusters, focusing on industrial processes rather than a common and shared purpose. However, although the paper adopts an inductive approach, it lacks a detailed description of empirical evidence derived from observable dynamics in blue, bio, and space economies. Additionally, by focusing solely on three cluster elements, the paper overlooks other aspects that may warrant attention, such as governance mechanisms and interfirm conflict resolution. Finally, a better integration of existing sustainable development theories could enhance cluster analysis's theoretical underpinnings and help identify theoretical assumptions for best practices.

Managerial implications. The theoretical adaptation of the concept of industrial clusters in the era of sustainability brings forth several implications. The new conceptualization may assist firms and policymakers in becoming more aware of which aspects to leverage to initiate a sustainable transition. Policymakers are encouraged to adopt a less deterministic and superficial approach when designing top-down cluster configurations and, instead, to consider the complexity of challenges that will arise during cluster performance. Firms are urged to be more receptive to a new idea of aggregation that prioritizes the preservation of the planet even above their interests.

Originality of the paper. Despite the increasing availability of several empirical examples, theoretical research that might contribute to theorizing on the topic is mainly missing (Alberti and Belfanti, 2019). Scholars often rely on applying

more recent literature on clusters to interpret current cases in the “real” environment, offering only partial explanations. The paper aims to re-open a conversation on cluster dynamics to understand characteristics, potentialities, and the existing limitations that make a cluster configuration a key factor for sustainable development. The originality of this paper lies in its focus on theoretical aspects of clusters within the context of the sustainable economy. Existing literature typically examines standard industrial configurations to investigate the effects of this virtuous agglomeration. In contrast, this paper delves into understanding the specific nature of their functioning, introducing a new form of aggregation labeled “Purpose-driven Cluster”.

References

- ALBERTI F.G., BELFANTI F. (2019), “Creating shared value and clusters: The case of an Italian cluster initiative in food waste prevention”, *Competitiveness review: an international business journal*, vol. 29, n. 1, pp. 39-60.
- BALDASSARRE B., SCHEPERS M., BOCKEN N., CUPPEN E., KOREVAAR G., CALABRETTA G. (2019), “Industrial Symbiosis: towards a design process for eco-industrial clusters by integrating Circular Economy and Industrial Ecology perspectives”, *Journal of cleaner production*, vol. 216, pp. 446-460.
- BAILEY D., PITELIS C., TOMLINSON P.R. (2018), “A place-based developmental regional industrial strategy for sustainable capture of co-created value”, *Cambridge Journal of Economics*, vol. 42, n. 6, pp. 1521-1542.
- BENNICH T., BELYAZID S., STJERNQUIST I., DIEMER A., SEIFOLLAHI-AGHMIUNI S., KALANTARI Z. (2021), “The bio-based economy, 2030 Agenda, and strong sustainability-A regional-scale assessment of sustainability goal interactions”, *Journal of Cleaner Production*, vol. 283, pp. 125-174.
- BERKOWITZ H. (2018), “Meta-organizing firms’ capabilities for sustainable innovation: a conceptual framework”, *Journal of Cleaner Production*, vol. 175, pp. 420-430.
- BOWEN K.J., CRADOCK-HENRY N.A., KOCH F., PATTERSON J., HÄYHÄ T., VOGT J., BARBI F. (2017), “Implementing the “Sustainable Development Goals”: towards addressing three key governance challenges-collective action, trade-offs, and accountability”, *Current opinion in environmental sustainability*, vol. 26, pp. 90-96.
- CATINI R., KARAMSHUK D., PENNER O., RICCABONI M. (2015), “Identifying geographic clusters: A network analytic approach”, *Research Policy*, vol. 44, n. 9, pp. 1749-1762.
- DERLUKIEWICZ N., MEMPEL-SNIEŻYK A., MANKOWSKA D., DYJAKON A., MINTA S., PILAWKA T. (2020), “How do clusters foster sustainable development? An analysis of EU policies”, *Sustainability*, vol. 12, n. 4, pp. 12-97.
- EU - EUROPEAN COMMISSION (2021), New approach for a sustainable blue economy in the EU Transforming the EU’s Blue Economy for a Sustainable Future, eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021DC0240
- EUROPEAN EXPERT GROUP ON CLUSTERS (2021), *Recommendation Report*, Publications Office of the European Union, Luxembourg
- GLINSKIY V., SERGA L., CHEMEZOVA E., ZAYKOV K. (2016), “Clusterization economy as a way to build sustainable development of the region”, *Procedia cirP*, vol. 40, pp. 324-328.
- HERVAS-OLIVER J.L. (2021), “Industry 4.0 in industrial districts: regional innovation policy for the Toy Valley district in Spain”, *Regional Studies*, vol. 55, n. 10/11, pp. 1775-1786.
- HOLLENSBE E., WOOKEY C., HICKEY L., GEORGE G., NICHOLS C.V. (2014), “Organizations with purpose”, *Academy of Management Journal*, vol. 57, n. 5, pp. 1227-1234
- HUANG C., WANG Y. (2018), “Evolution of network relations, enterprise learning, and cluster innovation networks: The case of the Yuyao plastics industry cluster”, *Technology Analysis & Strategic Management*, vol. 30, n. 2, pp. 158-171.
- LIS A., RADZIO A. (2023), “The role of clusters as collective actors in the energy transformation: the case of Mazovia Cluster ICT”, *Competitiveness Review: An International Business Journal*.
- MAKADOK R., BURTON R., BARNEY J. (2018), “A practical guide for making theory contributions in strategic management”, *Strategic Management Journal*, vol. 39, n. 6, pp. 1530-1545.
- MARSHALL A. (1920), “Industrial organization, continued. The concentration of specialized industries in particular localities”, in: *Principles of economics*. London: Palgrave Macmillan UK, pp. 222-231.
- MARSHALL A. (1980), *Principles of Economics*, New York, Maximillian.
- MARTIN R., SUNLEY P. (2003), “Deconstructing clusters: chaotic concept or policy panacea?”, *Journal of economic geography*, vol. 3, n. 1, pp. 5-35.
- MASKELL P., KEBIR L. (2006), “What qualifies as a cluster theory?”, in: *Clusters and regional development*, Routledge, pp. 30-49.
- MASKELL P., MALMBERG A. (2007), “Myopia, knowledge development and cluster evolution”, *Journal of Economic Geography*, vol. 7, n. 5, pp. 603-618.
- NILSSON M., GRIGGS D., VISBECK M. (2016), “Policy: map the interactions between Sustainable Development Goals”, *Nature*, vol. 534, n. 7607, pp. 320-322.
- PABLO-MARTÍ F., ARAUZO-CAROD J.M. (2020), “Spatial distribution of economic activities: A network approach”, *Journal of Economic Interaction and Coordination*, vol. 15, pp. 441-470.
- QI R., MA G., ZHANG Q., LIU C., WANG Q. (2024), “Innovation for sustainability: Harnessing the power of efficient natural resource markets for a greener economic recovery”, *Resources Policy*, Vol. 88, pp. 104-266.
- SAXENIAN A. (1994), *Regional Advantage. Culture and Competition in Silicon Valley and Route*, Harvard University Press, vol. 128, Boston, MA.
- SHI X., JIANG H., LI H., XU D. (2020), “Maritime cluster research: Evolutionary classification and future development”, *Transportation Research Part A: Policy and Practice*, vol. 133, pp. 237-254.
- PORTER M.E. (1990), *Competitive advantage of nations*, Harvard Business Review.

RATTEN V. (2018), "Eco-innovation and competitiveness in the Barossa valley wine region", *Competitiveness Review: An International Business Journal*, vol. 28, n. 3, pp. 318-331.

WORLD ECONOMIC FORUM (2022), *How a climate-smart forest economy could help mitigate climate change and its worst impacts*, (weforum.org)

Websites

<http://www.societamanagement.it>
<http://www.sinergiejournal.it>

The Power of Interactions. Exploring Stakeholder Adoption of pro-social practices from purpose-driven companies

MARTINA TAFURO¹ ANDREA PICCALUGA²

Abstract

The management literature has recently focused on reimagining capitalism through the lens of corporate purpose. Although many scholars have theoretically conceptualised this discourse and its connection to stakeholder theory, empirical studies are needed to further contribute to this ongoing debate. As society demands greater responsibility and ethical conduct, understanding stakeholder engagement with purpose-driven companies is crucial. This qualitative research aims to explore the complex relationship between purpose-driven companies and their stakeholders. The study focuses on understanding the various factors that influence stakeholder adoption of pro-social practices promoted by purpose-driven companies and the interaction mechanisms through which this adoption takes place. We are obtaining these insights from an extensive data collection that included 30 semi-structured interviews with key stakeholders, three participant observations, and a meticulous analysis of secondary data, such as organizational documents, industry reports, and existing literature. The preliminary findings of our study shed light on several key factors and ways that characterize the adoption of pro-social practices by stakeholders. These factors include organizational culture, leadership support, communication strategies, and the perceived alignment with stakeholder values. Our research highlights also the importance of fostering collaborative relationships between purpose-driven through both formal and informal interaction mechanisms. Formal mechanisms include structured stakeholder engagement processes; on the other hand, informal mechanisms involve structured interactions, which establish clear expectations and obligations between companies and stakeholders. We aim to contribute to both theoretical advancement and practical implications for stakeholder theory and the literature on corporate purpose. Our analysis aims to reveal how purpose-driven companies can engage with stakeholders to achieve shared purposes and create positive social change. Purpose-driven companies can contribute to the common good by fostering transparency, accountability, and trust. Ongoing dialogue and collaboration between companies and their stakeholders are necessary to ensure alignment with evolving societal expectations and values. Ultimately, fostering a mutual relationship between purpose-driven companies and their stakeholders can pave the way for the adoption of pro-social practices and driving positive societal impact.

Keywords: purpose-driven companies; stakeholders engagement; interaction mechanisms; pro-social practices

Framing of the research. In recent decades, there has been a significant shift in the business landscape. Many companies have moved away from prioritising shareholders and have instead adopted pro-social practices that cater to the needs of all stakeholders (Battilana et al., 2022). This shift from the traditional shareholder-centric model to a stakeholder-centric one has been crucial in fostering a more inclusive, fair, and sustainable approach to growth (Mayer, 2021). The stakeholder approach highlights the significance of considering the interests of all groups involved (Freeman et al., 2020). It provides valuable insights into the role of companies in supporting the holistic experiences of stakeholders (McGahan, 2023), contributing to their flourishing (von Ahsen and Gauch, 2021). Companies can effectively engage stakeholders in their needs and expectancies by aligning their goals with a shared purpose that promote value creation and equitable distribution of resources (McGahan, 2023). In this context, the shift towards a stakeholder-centric approach has significant implications for corporate purpose, as it directly impacts stakeholder involvement and engagement (George et al., 2023; Harrison et al., 2023). As such, purpose-driven companies do have unique characteristics that distinguish them in the business landscape. They are companies that prioritize long-term sustainability over short-term profits, acknowledge the interdependence between profit and pro-social purpose (Henderson, 2021). Accordingly, purpose-driven practices emphasise the importance of aligning organisational goals with broader societal values and aspirations, promoting positive change and sustainable development for all stakeholders (Freeman et al., 2020). Indeed, many companies are publicly declaring purpose statements that attest their commitment to creating a positive impact beyond financial returns (e.g. Mayer, 2016). These statements guide decision-making and strategic direction (Almandoz, 2023). Purpose-driven companies also promote accountability and transparency by

¹ Sant'Anna School of Advanced Studies, Pisa
e-mail: martina.tafuro@santannapisa.it

² Sant'Anna School of Advanced Studies, Pisa
e-mail: andrea.piccaluga@santannapisa.it

measuring and reporting their social and environmental performance to stakeholders (Stroehle et al., 2019). This effort to guarantee transparency not only fosters trust with stakeholders but also encourages ongoing improvement and innovation in pursuit of purpose-driven objectives (Henderson, 2021). Purpose-driven companies often show higher levels of innovation and creativity as they are motivated by a desire to solve pressing societal issues and create “architectural” change (Henderson, 2021). As companies adopt a purpose-driven approach, it is crucial to acknowledge the broader context in which they operate, exploring their interactions with stakeholders (Gulati and Wohlgezogen, 2023). Building stronger and more resilient organizations that are better equipped to navigate complex challenges and seize new opportunities by acknowledging and addressing the needs and concerns of stakeholders (Florez-Jimenez et al., 2024), but also act proactively to push for the change, they have the potentiality to become agents of change (Almandoz, 2023).

Purpose of the paper. Corporate purpose is essential for promoting the well-being of stakeholders, both within and outside of companies (Freeman et al., 2020). Accordingly, George et al. (2023) stated that “Purpose in the for-profit firm captures the essence of an organization’s existence by explaining what value it seeks to create for its stakeholders. In doing so, purpose provides a clear definition of the firm’s intent, creates the ability for stakeholders to identify with, and be inspired by, the firm’s mission, vision, and values, and establishes actionable pathways and an aspirational outcome for the firm’s actions” (p. 1848). The stakeholder approach provides useful insights into the role of companies in promoting comprehensive stakeholder experiences, based on the pursuit of shared goals for value creation and distribution (McGahan, 2023). As von Ahsen and Gauch (2021) emphasise, it is essential to design a long-term purpose and communicate it regularly to stakeholders. This development has enabled a deeper exploration of purpose, which is attentive to broader groups of stakeholders rather than solely from the maximization of the profit of the companies (Harrison et al., 2020). As a result, purpose-driven companies act as enablers in promoting the common good of stakeholders (Almandoz, 2023; Frémeaux and Michelson, 2017), collaborating to manage stakeholder engagement (Kaplan, 2023). The achievement of corporate purpose is a collective effort that involves both internal and external stakeholders in a dynamic and mutually beneficial relationship (Rindova and Martins, 2023). This dynamic nature is expected to significantly impact the company’s relationships with its stakeholders, promoting new interaction mechanisms to guide their engagement with the company towards a shared purpose that go beyond profitability (Bacq and Aguilera, 2022; Rindova and Martins, 2023). In addition to shaping the company’s purpose, the collaborative formulation process fosters a sense of ownership and commitment among stakeholders. This leads to deeper alignment with the organization’s mission and values (George et al., 2023). Furthermore, by integrating diverse perspectives and insights from stakeholders, the company can develop more holistic and inclusive strategies that address a wide range of societal and environmental concerns (Almandoz, 2023; Mayer, 2016; Mayer, 2021). This approach enhances stakeholder engagement and strengthens the company’s resilience and adaptability in navigating complex and rapidly evolving business landscapes (Florez-Jimenez et al., 2024). Since purpose encompasses not only objectives, goals, and tasks of companies but also moral, ethical, and value-driven directions (George et al., 2023; McGahan, 2023; Almandoz, 2023), it can foster multistakeholder action (Gulati and Wohlgezogen, 2023) and orchestrated change (Henderson, 2021). However, navigating purpose dynamics presents a significant challenge for companies, prompting ongoing debates about effective interaction mechanisms (von Ahsen and Gauch, 2021). This highlights the need for further research to investigate how stakeholders engage and interact with organizations (McGahan, 2023). Addressing this critical gap, our research aims to explore the relationship between purpose-driven companies and their stakeholders. The aim of this research is to explore the feasibility of stakeholders adopting pro-social practices from the interaction with purpose-driven companies. Additionally, we aim to elucidate the dynamics of enablers and barriers that shape this adoption as interaction mechanisms. By shedding light on these dynamics, our research aims to contribute to a deeper understanding of stakeholders engagement with purpose-driven organizations and inform strategies for enhancing the effectiveness of pro-social practices within and beyond companies’ boundaries.

Methodology. We are investigating the adoption of pro-social practices by stakeholders within purpose-driven companies using a grounded theory approach (Glaser and Strauss, 1967). Grounded theory facilitates the generation of theoretical insights from empirical data, allowing for an inductive and iterative analysis process (Glaser and Strauss, 1967). This methodology enables us to generate theoretical insights from empirical data, enabling an inductive and iterative analysis process. The grounded theory approach is well-suited for exploring complex and dynamic phenomena, such as the interactions between purpose-driven companies and their stakeholders. Our research design integrates both primary and secondary data sources to obtain a comprehensive understanding of the phenomenon under investigation (Jonsen and Jehn, 2009).

Research setting

Our identification of Italian purpose-driven companies relies on the application of the following screening criteria. First, the presence of a corporate purpose statement on the official website, which must include at least one of the following terms: purpose, (ultimate) goal, guiding principle, or objective beyond profit related to social concerns. Second, the explicit allocation of resources and investments to the achievement of the corporate purpose, in accordance with the principles outlined by the British Academy (2019, p. 895). Third, the possession of a B-Corp certification. Companies meeting a minimum of two out of three of those criteria underwent two validation tests. Initially, a focus group was conducted prior to data collection, involving three independent academic experts specializing in “purpose”. This step ensured the accuracy of our selection and validated our research and interview protocols. During the focus group, eight potential purpose-driven companies were identified. Subsequently, we selected only those companies that scored a minimum of 15 in a preliminary self-evaluation directed to CEOs, based on the 7-point Likert scale developed by Bhattacharya et al. (2022). This process resulted in the selection of three purpose-driven companies with a relatively

long life (minimum 10 years) and a relatively large size (more than 250 employees). Starting from these three purpose-driven companies, we are selecting randomly a certain number of internal managers and external managers from supplier and customer groups.

Data collection

Primary data collection is involving 30 semi-structured interviews with key stakeholders, including managers, and external suppliers and customers allowing for rich insights into their perceptions, experiences, and behaviours related to pro-social practices. We are collecting data of two main group of interviews through two different interview protocols respectively: managers of the purpose-driven company, and managers of the stakeholders' companies among suppliers and customers groups. Our primary data consist of preliminary meetings, semi-structured individual interviews lasting 45 minutes on average, follow-up mails. Additionally, we conducted three participant observations at each of the three purpose-driven companies' sites to gather further insights. Participant observations are crucial for gaining firsthand insights into the daily operations and interactions within purpose-driven companies' environments. Additionally, secondary data from existing literature, industry reports, and organizational documents are utilized to contextualize and enrich our findings, enabling triangulation and validation of emergent themes (Glaser and Strauss, 1967; Jonsen and Jehn, 2009).

Data analysis

Firstly, open coding involves breaking down data into discrete units to identify initial concepts and categories. Subsequently, axial coding facilitates the exploration of relationships between these concepts, enabling the emergence of higher-order themes and theoretical constructs. We are developing a framework that encapsulates the complex interactions between purpose-driven companies and their stakeholders, organizational practices, and contextual influences. Triangulation techniques are being employed to compare findings across different data sources and ensure the validity and reliability of our interpretations.

Results. The aim of the data analysis is to identify key findings on the adoption of pro-social practices by internal and external stakeholders of purpose-driven companies. The analysis will identify varying levels of awareness and understanding among stakeholders regarding the pro-social practices implemented by their respective companies, which may influence the degree of engagement and commitment towards these initiatives. It is expected to identify factors which facilitate or hinder stakeholders' adoption of pro-social practices, such as organizational culture, leadership support, and perceived benefits, will emerge. Additionally, adoption patterns are likely to vary among different stakeholder groups, with employees, customers, and suppliers displaying differing levels of involvement and receptiveness. This study will examine the impact of leadership support on stakeholder engagement and adoption of pro-social practices. Effective leadership can significantly influence organizational culture and enhance stakeholder trust and commitment by championing purpose-driven initiatives and advocating for stakeholder interests. Contextual factors, such as industry dynamics and market conditions, are expected to significantly influence stakeholder perceptions and behaviours towards the diffusion of pro-social practices. Moreover, this study aims to investigate the potential impact of external factors, such as regulatory frameworks and industry standards, but also voluntary certifications (e.g. B-Corps) on stakeholders' attitudes and behaviours towards adopting pro-social practices. By examining how external factors interact with internal dynamics within purpose-driven companies and external interaction mechanisms with stakeholders, valuable insights can be gained into the broader context in which these organizations operate and the challenges they face in driving meaningful societal impact. Furthermore, we aim to explore the enduring consequences of stakeholder involvement with purpose-driven enterprises, including its impact on brand image, customer retention, and financial outcomes. Through an examination of the outcomes of sustained stakeholder engagement initiatives, we aim to uncover best practices and lessons learned. This will inform future strategies for enhancing the effectiveness of pro-social practices adoption and maximizing the positive impact of purpose-driven companies on society. Our research aims to investigate also what are the mechanisms of interaction between purpose-driven companies and their stakeholders. We expect to identify both formal and informal mechanisms activated by purpose-driven companies to diffuse pro-social practices among their internal and external stakeholders. Formal mechanisms include structured stakeholder engagement processes, such as advisory boards, regular meetings, and formal feedback mechanisms. These provide structured channels for stakeholders to voice their concerns and contribute to decision-making processes and strategic alliances around a shared purpose. On the other hand, formal mechanisms involve structured interactions, such as contracts, agreements, and policies, which establish clear expectations and obligations between companies and stakeholders. Informal mechanisms, on the other hand, involve spontaneous interactions, such as social events, networking opportunities, and informal discussions, which facilitate relationship-building and trust-building between companies and stakeholders on a more personal (and authentic) level. Understanding both formal and informal interaction mechanisms can provide insights into the dynamics of stakeholder engagement. This can help to identify the factors that influence the effectiveness of these interactions in promoting the adoption of pro-social practices and driving positive societal impact.

Research limitations. The research relies on qualitative data obtained through interviews and secondary sources, which may be subject to researcher bias and interpretation. Efforts are being made to mitigate bias through triangulation and member checking. Furthermore, it is important to consider that the sample size and selection criteria for stakeholders could have impacted the range and depth of insights gathered, potentially resulting in the exclusion of perspectives from specific stakeholder groups or organizational contexts. Additionally, the qualitative nature of the research allows for a rich exploration of stakeholder perspectives and experiences, providing valuable insights into the complexities of

stakeholder engagement with purpose-driven companies. Despite efforts to ensure rigor and validity, it is essential to acknowledge the inherent subjectivity in qualitative research, which may influence the interpretation of findings.

Managerial implications. The aim of our research is to provide practical recommendations for purpose-driven companies seeking to strengthen their relationships with stakeholders and increase their social and environmental impact through a comprehensive analysis of these mechanisms. The findings of this research could have significant implications for managers and organisational leaders who aim to enhance stakeholder engagement and adoption of pro-social practices within and beyond purpose-driven companies. We expect to identify best practices and lesson learned to foster the diffusion of pro-social practices in the context of the purpose-driven companies. For instance, to effectively tailor communication and engagement strategies, it is crucial to understand stakeholders' varying levels of awareness and perception; or even more, emphasise shared values and benefits for all stakeholders can enable the diffusion effect. Additionally, creating a supportive organisational culture and securing leadership commitment are essential for fostering an environment conducive to stakeholder participation and buy-in. Demonstrating commitment to social responsibility and sustainability can increase trust and confidence among stakeholders, motivating them to actively support and contribute to the company's purpose-driven goals. Managers must recognise the diverse needs and expectancies of different stakeholder groups and tailor engagement strategies accordingly and our research might help to recognise the best practices to achieve this goal. By comprehending and addressing the concerns and motivations of each stakeholder group, managers can develop stronger relationships and encourage a sense of shared ownership in a shared purpose. Additionally, managers must continuously monitor and evaluate their stakeholder engagement efforts. To ensure ongoing alignment and balance with stakeholder expectations and organizational goals, managers should solicit feedback and adapt their strategies as needed. We expect that our participant observations are crucial in this process as they provide firsthand insights into stakeholder interactions and behaviours, enabling managers to make informed decisions and adjustments to their engagement strategies. Overall, our research empirically explore how purpose-driven companies can cultivate more meaningful and impactful relationships with their stakeholders. So, it can recognise managerial implications also for stakeholder companies, both suppliers and customers, helping them to recognise the mechanisms for the diffusion of pro-social practices activated by purpose-driven companies.

Originality of the paper. This research offers several original contributions to the existing literature on purpose-driven companies and stakeholder theory (Bartlett and Ghoshal, 1994; Mayer, 2021; Bhattacharya et al., 2022; Zenger, 2023). Firstly, by focusing on the relationship between purpose-driven companies as agents of change for their stakeholders, we are addressing a significant gap in the literature, which has predominantly focused on purpose as a response to external pressures and expectancies. Our research uniquely provides a comprehensive understanding of how purpose-driven initiatives influence stakeholder adoption of pro-social practices as agents of change. Furthermore, our research goes beyond merely examining the existence of purpose-driven initiatives within companies to delve into the dynamics of stakeholder adoption outside companies' boundaries. By exploring enablers and barriers that shape stakeholder engagement with purpose-driven companies, we offer valuable insights into the interaction mechanisms underlying their relationships. Additionally, our research adopts an empirical approach, allowing for in-depth exploration and contextualization of purpose-driven companies phenomenon of inquiry. This empirical foundation enhances the credibility and applicability of our findings, contributing to a more nuanced understanding of the role of purpose-driven companies in driving positive social change and promoting societal well-being.

References

- ALMANDOZ J. (2023), "Inside-out and outside-in perspectives on corporate purpose", *Strategy science*, vol. 8, n. 2, pp. 139-148.
- BACQ S., AGUILERA R. V. (2022), "Stakeholder governance for responsible innovation: A theory of value creation, appropriation, and distribution", *Journal of Management Studies*, vol. 59, n. 1, pp. 29-60.
- BARTLETT C. A., GHOSHAL S. (1994), "Changing the role of top management: Beyond strategy to purpose", *Harvard Business review*, vol. 7, n. 6, pp. 79-88.
- BATTILANA J., OBLOJ T., PACHE A. C., SENGUL M. (2022), "Beyond shareholder value maximization: Accounting for financial/social trade-offs in dual-purpose companies", *Academy of Management Review*, vol. 47, n. 2, pp. 237-258.
- BHATTACHARYA C.B., SEN S., EDINGER-SCHONS L.M., NEUREITER M. (2022), "Corporate Purpose and Employee Sustainability Behaviors", *Journal of Business Ethics*, pp. 1-19.
- FLOREZ-JIMENEZ M.P., LLEO A., DANVILA-DEL-VALLE I., SÁNCHEZ-MARÍN G. (2024), "Corporate sustainability, organizational resilience and corporate purpose: a triple concept for achieving long-term prosperity", *Management Decision*.
- FREEMAN R.E., PHILLIPS R., SISODIA R. (2020), "Tensions in stakeholder theory", *Business and Society*, vol. 59, n. 2, pp. 213-231.
- FRÉMEAUX S., MICHELSON G. (2017), "The common good of the firm and humanistic management: Conscious capitalism and economy of communion", *Journal of Business Ethics*, vol. 145, pp. 701-709.
- GEORGE G., HAAS M.R., MCGAHAN A.M., SCHILLEBEECKX S.J., TRACEY P. (2023), "Purpose in the for-profit firm: A review and framework for management research", *Journal of Management*, vol. 49, n. 6, pp. 1841-1869.
- GLASER B.G., STRAUSS A.L. (1967), *The discovery of grounded theory: Strategies for qualitative research*. Aldine Publishers, Chicago.
- GULATI R., WOHLGEZOGEN F. (2023), "Can purpose foster stakeholder trust in corporations?", *Strategy Science*, vol. 8, n. 2, pp. 270-287.
- HARRISON J.S., PHILLIPS R.A., FREEMAN R.E. (2020), "On the 2019 business roundtable "statement on the purpose of a corporation"", *Journal of Management*, vol. 46, n. 7, pp. 1223-1237.

- HENDERSON R. (2021), "Innovation in the 21st century: architectural change, purpose, and the challenges of our time", *Management Science*, vol. 67, n. 9, pp. 5479-5488.
- JONSEN K., JEHN K.A. (2009), "Using triangulation to validate themes in qualitative studies", *Qualitative research in organizations and management: an international journal*, vol. 4, n. 2, pp. 123-150.
- KAPLAN S. (2023), "The promises and perils of corporate purpose", *Strategy Science*, vol. 8, n. 2, pp. 288-301.
- MAYER C. (2016), "Reinventing the corporation", *Journal of the British Academy*, vol. 4, pp. 53-72.
- MAYER C. (2021), "The future of the corporation and the economics of purpose", *Journal of Management Studies*, vol. 58, n. 3, pp. 887-901.
- MCGAHAN A.M. (2023), "The new stakeholder theory on organizational purpose", *Strategy Science*, vol. 8, n. 2, pp. 245-255.
- RINDOVA V.P., MARTINS L.L. (2023), "Moral imagination, the collective desirable, and strategic purpose", *Strategy Science*, vol. 8, n. 2, pp. 170-181.
- STROEHLE J.C., SOONAWALLA K., METZNER M. (2019), "How to measure performance in a purposeful business? Analysing the Status Quo", *British Academy, Future of the Corporation Working Paper Series*. Accessed on January 2nd, 2023 at <https://ssrn.com/abstract=3504530>
- VON AHSEN A., GAUCH K. (2021), "Opportunities and Challenges of Purpose-Led Companies: An Empirical Study Through Expert Interviews", *Corporate Reputation Review*, pp. 1-14.
- ZENGER T. (2023), "Special Issue on Corporate Purpose", *Strategy Science*, vol. 8, n. 2, pp. 121-122.

B-Corp: un esame delle aziende alimentari Italiane attraverso la Teoria dei Segnali

NORA ANNESI¹ VALENTINA CUCINO²

Abstract

Le nuove normative europee sulla responsabilità sociale delle imprese private impongono una maggiore assunzione di responsabilità nei confronti dell'ambiente e della società. La CSR-D e la CSDD-D ampliano le imprese soggette alla rendicontazione di sostenibilità e richiamano l'adozione di azioni concrete per la sostenibilità e il rispetto dei diritti umani. Questo scenario ha spinto molte imprese a cercare la certificazione B-Corp per trasformarsi in entità più sostenibili. Attraverso la Teoria dei Segnali, l'articolo proposto analizza la comunicazione delle imprese B-Corp rispetto alle implicazioni manageriali derivanti da tale certificazione. La comunicazione analizzata è quella rivolta al pubblico più ampio di stakeholder, ovvero quelli raggiunti attraverso i social media. Le ricercatrici, attraverso la Teoria dei Segnali valutano la coerenza tra ciò che le imprese comunicano e ciò che la certificazione implica. I risultati indicano che solo una piccola percentuale dei post si concentra sullo status B-Corp e che alcune dimensioni importanti, come le metriche di governance, sono trascurate. Questo solleva l'importanza della consapevolezza interna e della selezione dei fornitori di servizi di comunicazione per garantire una comunicazione completa e accurata riguardo alla certificazione B-Corp. Altra dimensione rilevata è infine quella della consapevolezza e dell'interesse dello stakeholder nei confronti di questo tipo di informazioni.

Key words: b-corp; Teoria dei Segnali; communication; sustainability; transition; food

Contesto della ricerca. *Le nuove normative europee sulla responsabilità sociale del settore privato stanno aumentando le responsabilità che le imprese dovrebbero prendersi (e che dovrebbero poi rendicontare e comunicare) nei confronti dell'ambiente e della società. In particolare modo, la CSR-D, quale Corporate Sustainability Reporting Directive, da un lato dal 2022 ha allargato la compagine di imprese sotto obbligo di rendicontazione di sostenibilità. Dall'altro lato, la CSDD-D, quale Corporate Sustainability Due Diligence Directive, richiama la necessità di avviare piani e azioni concrete e misurabili orientate alla sostenibilità ed in particolare modo alla riduzione degli impatti ambientali, alla lotta al cambiamento climatico e al rispetto dei diritti umani dei lavoratori dell'intera catena del valore. Essenzialmente le imprese si trovano a fronteggiare un trend di pressioni crescenti rispetto alla sostenibilità a partire dal 2013 con l'introduzione della Direttiva 2013/34/UE "per quanto riguarda la comunicazione di informazioni di carattere non finanziario e di informazioni sulla diversità da parte di talune imprese e di taluni gruppi di grandi dimensioni".*

In questo contesto molte imprese stanno cercando certificazioni o modelli che le guidino verso una configurazione aziendale più sostenibile (Moroz & Gamble, 2021). Dal 2013, con l'emergere della certificazione B Corp, molte imprese hanno avviato e completato il processo di transizione verso la sostenibilità, rispettando i requisiti per ottenere lo status di B Corp e impegnandosi a mantenere questo stato e migliorare le proprie performance nel tempo. Il movimento delle B Corp è in costante crescita, come confermato da una ricerca de Il Sole 24 Ore³ che ha evidenziato un aumento del 26% delle imprese certificate come B Corp in Italia nel 2021.

A causa delle normative più stringenti, specie tra il 2023-2024, B-Lab, l'organizzazione promotrice della certificazione, ha avviato un processo di consultazione pubblica finalizzato a raccogliere opinioni su come migliorare e integrare i contenuti dell'attuale certificazione per renderla rispondente all'evoluzione legislativa e all'aspettativa degli stakeholder sulle b-Corp e sulle imprese in generale. La certificazione B Corp attraverso opportuna etichetta di marchio, consente di segnalare graficamente che l'impresa che ha generato il prodotto/servizio aderisce ad un network in cui il modello di condotta responsabile e l'attenzione alla sostenibilità sono una priorità (Cao et al., 2017; Conger et al., 2018; Navis & Glynn, 2011). In questo contesto, i segnali inviati agli stakeholder circa il proprio impegno sono particolarmente importanti. Trovare beneficio dell'impegno profuso attraverso una comunicazione che valorizzi l'impresa agli occhi degli stakeholder è quindi cruciale (Battilana, 2018; Navis & Glynn, 2011). Difatti l'adesione alla certificazione B-corp

¹ Scuola Sant'Anna di Pisa
e-mail: nora.annesi@santannapisa.it

² Scuola Sant'Anna di Pisa
e-mail: valentina.cucino@santannapisa.it

³ https://www.ilsole24ore.com/art/la-pandemia-spinge-bcorp-26per cento-italia-2021-AE7VTGFB?refresh_ce=1

comporta una serie importante di implicazioni manageriali che devono portare l'impresa ad adeguarsi, qualora non rientri a pieno nel modello definito dalla certificazione, e a mantenere tale struttura nel tempo.

Sebbene siano molti gli studi che hanno analizzato l'aspetto della certificazione B-corp, investigando dei suoi effetti positivi (Conger et al., 2018; Gehman & Grimes, 2017; Moroz et al., 2018) e dei suoi effetti negativi (Liute & De Giacomo, 2022), pochi si sono concentrati sul processo di transizione che l'azienda vive nel passaggio a B-corp. Inoltre, i fondatori del movimento B-corp hanno invitato più volte negli anni gli studiosi di management a indagare le peculiarità degli approcci adottati dalle B corp anche rispetto ai propri stakeholder (Muñoz et al., 2018).

In particolare, quando ottiene una certificazione B corp, l'azienda ha necessità di segnalare ai propri stakeholders la transizione da un modello classico a un modello che integra all'interno della propria cultura organizzativa i principi di sostenibilità. In questo passaggio, si creano delle asimmetrie informative tra l'azienda e lo stakeholder che devono essere bilanciate. In particolare, da un lato gli stakeholder cercano segnali – azioni osservabili che forniscono informazioni su attributi non osservabili e risultati probabili (Spence, 1974) – che aiutino a colmare il divario tra ciò che gli stakeholder sanno dell'azienda e ciò che vogliono sapere (Miller e Triana, 2009), dall'altro, le aziende hanno il bisogno di inviare dei segnali di qualità agli stakeholders.

In questo contesto, l'utilizzo della Teoria dei Segnali come strumento per osservare i segnali inviati dalle imprese certificate B-corp attraverso i propri canali di comunicazioni circa il loro impegno per la sostenibilità e le proprie attività in quanto B-corp, rappresentano il contesto strategico per identificare gli spazi di miglioramento dell'attuale sistema di certificazione. La teoria dei segnali sta guadagnando crescente popolarità negli studi di management (Bergh e Gibbons, 2011; Connelly et al., 2011). Questa crescente popolarità è legata al fatto che la teoria indaga i meccanismi attraverso i quali gli individui e le organizzazioni trasmettono e interpretano le informazioni. Più specificamente, la teoria dirige l'attenzione sulle sfide fondamentali affrontate dai decisori strategici, affrontando in particolare come possono utilizzare i segnali per mitigare l'incertezza associata alla selezione da un insieme di scelte in situazioni caratterizzate da informazioni incomplete e distribuite asimmetricamente (Spence, 2002).

In particolare, l'ottenimento della certificazione B Corp offre l'opportunità di comunicare agli stakeholders gli sforzi di sostenibilità dell'azienda, principalmente grazie al miglioramento dell'esposizione mediatica, sbloccando vantaggi strategici (Chauhan & O'Neill, 2020; Conger et al., 2018; Grimes et al., 2018) e acquisendo distintività in un ambiente altamente competitivo (Harjoto & Laksmana, 2018). Inoltre, la certificazione B Corp aiuta le imprese sostenibili a entrare in una determinata categoria visibile che dà credito al loro impegno verso impatti sociali e ambientali positivi (Paelman et al., 2020), genera guadagni di reputazione e legittimità, nonché networking e, potenzialmente, benefici finanziari (Conger et al., 2018; Gehman & Grimes, 2017; Moroz et al., 2018). Attraverso la lente della Teoria dei segnali, gli autori hanno quindi avviato una analisi dei canali social di un cluster di imprese italiane certificate B-corp. Tale contesto rappresenta il campo di osservazione indiretta per rispondere quindi alle seguenti domande: Quali implicazioni manageriali derivanti dall'ottenimento della certificazione b-corp vengono comunicati agli stakeholder dalle imprese? Quali sono i potenziali miglioramenti della certificazione b-corp che possono essere rilevati dall'analisi della comunicazione delle imprese b-corp?

Scopo del paper. In questo contesto il contributo presentato fornisce un approfondimento della comunicazione avviata da una impresa dopo aver completato il processo di transizione a B corp ed averne ottenuto la relativa certificazione. Tale transizione rappresenta un impegno verso un modello di business più responsabile nei confronti della società. L'ottenimento, ed il mantenimento, della certificazione di B-corp impone infatti una attenzione al benessere degli individui e della società riletto attraverso le dimensioni chiave della sostenibilità e dei criteri ESG. In questo senso la dimensione della Governance copre un aspetto significativo delle richieste presenti all'interno del processo di certificazione a B-Corp. Metriche e policy adottate nei confronti dei dipendenti, della comunità e dei supplier, così come il livello di trasparenza interna ed esterna raggiunto, sono parte di questo processo di transizione e possono trovare evidenza all'interno de essere incluse anche nei sistemi di comunicazione avviata dalle organizzazioni.

Lo scopo di questo contributo è quindi comprendere se e quali messaggi comunicano le imprese che hanno ottenuto lo status di B-Corp in relazione agli aspetti su cui la certificazione B-Corp ha posto particolare attenzione. In termini di Teoria dei Segnali, lo studio intende osservare il contenuto del messaggio trasmesso dall'impresa attraverso i propri canali di comunicazione. Al fine di fornire un quadro completo che tenga conto delle prospettive sia dell'impresa che degli stakeholder, l'obiettivo del paper è anche valutare la reazione e il livello di apprezzamento di coloro che, esposti a questa comunicazione, hanno scelto di fornire un feedback.

In particolare, secondo la teoria dei segnali, all'interno di un ambiente di segnalazione il mittente (l'azienda B corp) decide come comunicare (o segnalare) quell'informazione (passaggio ad un modello Bcorp) e il destinatario (stakeholder) decide come interpretare l'informazione (segnale) e fornisce feedback (Connelly et al., 2011). L'ambiente di segnalazione è dove appare il segnale, il mittente o il segnalatore sarebbe l'azienda (nel nostro caso la Bcorp), il segnale potrebbe essere un messaggio, un reclamo o un'etichetta (in questo caso il post sui social), il destinatario sarebbe lo stakeholder che tenta di interpretare il segnale (in questo caso la reazione al post), e il feedback sarebbe fornito da un acquisto, un commento sui social o un messaggio inviato all'azienda (nel nostro caso il commento al post)

Metodo. L'analisi si è articolata in tre fasi. Nella prima fase, sono state selezionate tutte le imprese italiane BCorp operanti nel settore alimentare e ufficialmente registrate sulla piattaforma istituzionale dell'iniziativa B-Corp. Il settore alimentare è stato selezionato dagli autori in virtù della sua rappresentatività all'interno dell'industria italiana come mostrato da diversi studi (Annesi and Cucino, 2023; Passarelli et al., 2023). Infatti, questo settore riveste un ruolo significativo nell'economia italiana, contribuendo in modo sostanziale al PIL nazionale e all'occupazione. Successivamente, al fine di esplorare il sistema di comunicazione relativo alle tematiche B-corp, gli autori hanno ritenuto

opportuno focalizzarsi sul sistema di comunicazione che prevede, in linea con la Teoria dei Segnali, uno scambio di comunicazioni e reazioni tra impresa e stakeholder. In questo senso sono oggetto di questa analisi i canali social (Instagram o Facebook) delle imprese selezionate. Di conseguenza le aziende prive di un profilo social sono state escluse dall'analisi. Il risultato ha portato a 14 imprese italiane B-corp operanti nel settore alimentare e ufficialmente iscritte alla piattaforma istituzionale dell'iniziativa B-corp.

Nella terza fase, i ricercatori hanno selezionato le due piattaforme che tutte le 14 imprese avevano attive ovvero il canale Instagram ed il canale Facebook. Il segnale attivato dall'impresa dopo aver completato il processo di transizione a B-corp è stato analizzato tramite analisi qualitativa dei contenuti dei post (content analysis) contrassegnati con un hashtag relativo al termine "B-corp". Tale analisi è stata sviluppata attraverso l'utilizzo del software Nvivo. Il segnale attivato dagli stakeholder è invece stato analizzato attraverso le reazioni attivate dagli stakeholder apponendo un commento, un like/dis-like, o condividendo il post.

Dal punto di vista analitico, attraverso un approccio deduttivo, il totale dei post raccolti è stato codificato in nodi due principali categorie quali: (1) post con contenuto volutamente legato allo status di B-corp e (2) post non legato allo status B-corp. La scelta di includere un hashtag, infatti ha il potere di sintetizzare gli elementi essenziali che si vogliono trasmettere attraverso un post ed il framework comunicativo all'interno del quale si vuole inserire una determinata comunicazione.

Risultati. La ricerca condotta ha comportato l'analisi di oltre 6000 post pubblicati sui social Instagram e Facebook da parte di 14 aziende italiane BCorp operanti nel settore alimentare ed ufficialmente registrate sulla piattaforma istituzionale dell'iniziativa B-corp.

In linea generale emerge che le imprese pubblicano 2 volte di più sulla piattaforma facebook poiché consente di scrivere contenuti anche privi di immagini.

Il primo livello di analisi ha messo in luce che le imprese hanno rispettivamente pubblicato circa 300 post legati al concetto di b-corp tramite hashtag. Ovvero solo il 4% dei post rivolti agli stakeholder Facebook e il 5% dei post rivolti agli stakeholder instagram riguardano volutamente il tema bcorp.

La categorizzazione dei post secondo l'approccio deduttivo rispetto alle dimensioni bBcorp, ha consentito di mettere in luce una maggiore attenzione alla comunicazione delle tematiche ricadenti all'interno del tema b-corp "governance". Il 55% dei post contrassegnati dal #b-corp (e affini) riguarda infatti la dimensione della governance e dei suoi sotto-temi.

Il secondo aspetto B-corp principalmente trattato è quello degli impatti sulle comunità con il 21% dei contenuti focalizzato sul tema, l'8% riguarda gli impatti sull'ambiente. Il 14% dei post ha utilizzato la connessione al framework b-corp facendo riferimento di fatto a tematiche inerenti alle B-corp, ma non classificabili in modo certo ad una delle categorie individuate. Infine, in maniera equivalente, (ovvero attraverso lo 0,66% dei post per categoria) vengono trattate le categorie dei clienti, dei lavoratori e la trasparenza d'impresa.

Le analisi mostrano che alcune dimensioni B-corp non trovano spazio all'interno dei segnali inviati dalle imprese attraverso post pubblicati sui propri profili. Tale evidenza mostra che da parte delle imprese alcune tematiche B-corp non sono considerate utili per inviare un segnale circa la propria natura B-corp o che alcune tematiche B-corp non sono percepite come collegabili alla sfera B-corp.

Tra le aree non coperte in toto, e quindi non segnalate in alcun modo, vi è il sottotema "metriche di governance" che al suo interno copre gli aspetti relativi ai flussi finanziari di una impresa. In questo senso è possibile ipotizzare che la storica dicitura "reportistica non finanziaria" legata alla rendicontazione degli aspetti di sostenibilità abbia costituito un bias per le imprese che credono poco rilevante o elegante collegare la propria condotta di governance (di tipo B-corp) alle tematiche di tipo finanziario.

L'analisi dei post non b-corp, come descritto, ha visto un approfondimento dei contenuti trattati per identificare eventuali segnali di comunicazione relativa alle aree di impatto b-corp.

Solo l'1% dei post non contrassegnati con l'hashtag b-corp tratta temi b-corp. Seppur il numero sia basso e forse irrilevante (63 in totale) i temi presentati racchiudono alcuni dei principi fondanti della certificazione b-corp che, per questo, meriterebbero di essere valorizzati all'interno del giusto quadro.

Interessante è notare che alcuni aspetti scarsamente trattati o non trattati nei post Bcorp sono invece presenti all'interno di questo cluster di post. Diversamente, la dimensione della governance, largamente trattata nel cluster precedente, è praticamente assente in questa seconda fase analitica. In linea generale, ambiente, lavoratori e fornitori sono le aree di impatto verso cui le imprese hanno voluto trasmettere un più alto numero di segnali.

L'osservazione della comunicazione non istituzionale implementata attraverso canali social fornisce il vantaggio di capire quali elementi le imprese credono siano più interessanti per gli stakeholder e decidono quindi di comunicare. Rimane quindi da capire perché alcune dimensioni B-corp che portano ad un impegno importante da parte dell'impresa, non vengano poi comunicate o valorizzate attraverso i propri canali.

Limiti della ricerca. I limiti della ricerca presentata sono legati ad una analisi sviluppata attraverso la consultazione di sole due piattaforme social. I dati non sono quindi stati confrontati con eventuali bilanci di sostenibilità e/o di impatto. Tale limite, costituisce una scelta consapevole da parte delle ricercatrici che volevano fornire un focus sulla relazione costruita con lo stakeholder di massa piuttosto che su uno stakeholder di nicchia quale quello interessato alla comunicazione istituzionale contenuta all'interno di bilanci/report pubblicati in sezioni specifiche del sito web.

Il secondo limite è relativo all'assenza di un confronto diretto con le imprese coinvolte nello studio.. Tale confronto potrebbe arricchire le chiavi di interpretazioni relative alle scelte di comunicare o non comunicare determinati temi.

Un altro limite della ricerca è legato al fatto che le attività di comunicazione sono sempre più spesso esternalizzate dall'impresa. Le competenze richieste per gestire un sistema di comunicazione multi-canale possono infatti non essere presenti all'interno di imprese che lavorano in settori differenti. In questo senso, la mancata inclusione di un hashtag può derivare anche da una non totale consapevolezza del mondo B-corp da parte di coloro che forniscono il servizio di comunicazione, piuttosto che da una scarsa consapevolezza dell'impresa stessa.

Implicazioni. Il contributo fornisce implicazioni relative alla necessità di diffondere maggiore consapevolezza interna rispetto a tutte le tematiche e aree coperte dall'essere certificati B-corp. In questo senso la scelta stessa del fornitore del servizio di comunicazione può essere orientata rispetto alla capacità dello stesso di segnalare in modo completo e valorizzare quali sono le implicazioni di una impresa che decide di certificarsi B-corp.

In secondo luogo, emerge il ruolo della comunicazione e della trasparenza. La ricerca evidenzia l'importanza della comunicazione aziendale e della trasparenza nei confronti degli stakeholder. Le imprese devono comunicare in modo chiaro e trasparente i propri sforzi in materia di sostenibilità, anche attraverso i canali social, per creare fiducia e coinvolgere i propri pubblici di riferimento.

In terzo luogo, l'analisi suggerisce una maggiore attenzione ai segnali inviati dagli stakeholder. L'analisi dei segnali inviati dalle imprese attraverso i canali di comunicazione, come i social media, fornisce insight preziosi per migliorare la comunicazione e individuare aree di sviluppo della certificazione B-Corp. Le imprese devono essere consapevoli dei messaggi che trasmettono e dell'efficacia della loro comunicazione sulla sostenibilità.

Infine, implicazioni si hanno rispetto all'evoluzione della certificazione B-Corp. L'evoluzione normativa ha portato l'organizzazione promotrice della certificazione B-Corp, B-Lab, a rivedere e migliorare i criteri di certificazione per allinearsi alle nuove leggi e alle aspettative degli stakeholder. Questo indica la necessità di un costante aggiornamento e miglioramento dei modelli di valutazione della sostenibilità.

Originalità del paper. Lo studio presenta quattro elementi di originalità. Primo il paper si distingue per il suo focus sull'impresa come principale soggetto della comunicazione, piuttosto che sugli stakeholder. Mentre molte ricerche si concentrano sull'interpretazione degli stakeholder dei segnali inviati dalle imprese, questo studio adotta un approccio inverso, osservando attentamente la strategia comunicativa delle aziende certificate B-Corp. Questo approccio insolito fornisce una nuova prospettiva sulla comunicazione aziendale e sull'efficacia dei messaggi trasmessi.

Secondo, un altro elemento di originalità è rappresentato dall'utilizzo dell'analisi qualitativa della comunicazione aziendale come strumento proxy per valutare potenziali miglioramenti nell'evoluzione della certificazione B-Corp. Piuttosto che concentrarsi esclusivamente sui risultati finanziari o sugli indicatori di sostenibilità, il paper esplora il contenuto e la strategia comunicativa delle imprese come indicatore di aderenza ai principi B-Corp. Questo approccio innovativo offre un metodo alternativo per valutare l'efficacia e l'accuratezza della comunicazione aziendale.

Terzo, il paper fornisce indicazioni chiare alle imprese di uno specifico settore su aree non trattate nella loro comunicazione, suggerendo potenziali miglioramenti per il futuro. Questo aspetto è particolarmente importante perché aiuta le imprese a identificare le lacune nella loro strategia comunicativa e a sviluppare piani più efficaci per comunicare il loro impegno per la sostenibilità. In questo modo, il paper offre un contributo tangibile al miglioramento della comunicazione aziendale e alla promozione della trasparenza e della responsabilità nel settore.

Infine, mentre molti studi si concentrano sugli effetti della certificazione B-Corp sulle prestazioni aziendali, questo paper si distingue per esaminare in dettaglio la comunicazione delle imprese subito dopo aver ottenuto la certificazione. Questo approccio fornisce una prospettiva preziosa su come le imprese intendono comunicare il loro impegno per la sostenibilità e le sfide incontrate durante la transizione verso un modello aziendale più responsabile.

References

- ANNESI N., CUCINO V. (2023), "La collaborazione locale come driver all'innovazione sostenibile: uno studio esplorativo sugli attori chiave nel settore agroalimentare", In *Sinergie-SIMA Management Conference Proceedings Rediscovering local roots and interactions in management* (vol. 1, n. 1, pp. 625-630). Fondazione CUEIM.
- BATTILANA J. (2018), "Cracking the organizational challenge of pursuing joint social and financial goals: Social enterprise as a laboratory to understand hybrid organizing", *Management*, vol. 21, n. 4, pp. 1278-1305.
- BERGH D.D., GIBBONS P. (2011), "The stock market reaction to the hiring of management consultants: A signalling theory approach", *Journal of Management Studies*, vol. 48, n. 3, pp. 544-567.
- BERGH D.D., CONNELLY B.L., KETCHEN JR D.J., SHANNON L.M. (2014), "Signalling theory and equilibrium in strategic management research: An assessment and a research agenda", *Journal of management studies*, vol. 51, n. 8, pp. 1334-1360.
- CAO K., GEHMAN J., GRIMES M.G. (2017). Standing out and fitting in: Charting the emergence of Certified B Corporations by industry and region. In *Hybrid ventures* (pp. 1-38). Emerald Publishing Limited.
- CHAUHAN Y., O'NEILL H.M. (2020). Strategic advantages through social responsiveness: The case of certified B-corps. Available at SSRN 3627399.
- CONGER M., MCMULLEN J.S., BERGMAN JR B.J., YORK J.G. (2018), "Category membership, identity control, and the reevaluation of prosocial opportunities", *Journal of Business Venturing*, vol. 33, n. 2, pp. 179-206.
- CONNELLY B.L., CERTO S.T., IRELAND R.D., REUTZEL C.R. (2011), "Signaling theory: A review and assessment", *Journal of management*, vol. 37, n. 1, pp. 39-67.
- GEHMAN J., GRIMES M. (2017), "Hidden badge of honor: How contextual distinctiveness affects category promotion among certified B corporations", *Academy of Management Journal*, vol. 60, n. 6, pp. 2294-2320.
- GRIMES M.G., GEHMAN J., CAO K. (2018), "Positively deviant: Identity work through B Corporation certification", *Journal of Business Venturing*, vol. 33, n. 2, pp. 130-148.

- HARJOTO M., LAKSMANA I. (2018), "The impact of corporate social responsibility on risk taking and firm value", *Journal of business ethics*, vol. 151, pp. 353-373.
- LIUTE A., DE GIACOMO M.R. (2022), "The environmental performance of UK-based B Corp companies: An analysis based on the triple bottom line approach", *Business Strategy and the Environment*, vol. 31, n. 3, pp. 810-827
- MILLER T., TRIANA M.D.C. (2009). Demographic diversity in the boardroom: mediators of the board diversity-firm performance relationship. *Journal of Management Studies*, vol. 46, pp. 755e786.
- MOROZ P.W., GAMBLE E.N. (2021), "Business model innovation as a window into adaptive tensions: Five paths on the B Corp journey", *Journal of Business Research*, vol. 125, pp. 672-683.
- MUÑOZ P., CACCIOTTI G., COHEN B. (2018), "The double-edged sword of purpose-driven behavior in sustainable venturing", *Journal of business venturing*, vol. 33, n. 2, pp. 149-178.
- NAVIS C., GLYNN M.A. (2011), "Legitimate distinctiveness and the entrepreneurial identity: Influence on investor judgments of new venture plausibility", *Academy of Management Review*, vol. 36, n. 3, pp. 479-499.
- PAELMAN V., VAN CAUWENBERGE P., VANDER BAUWHEDE H. (2020), "Effect of B Corp certification on short-term growth: European evidence", *Sustainability*, vol. 12, n. 20, pp. 8459
- PASSARELLI M., BONGIORNO G., CUCINO V., CARIOLA A. (2023), "Adopting new technologies during the crisis: An empirical analysis of agricultural sector", *Technological Forecasting and Social Change*, vol. 186, pp. 122106.
- SPENCE M. (2002). Signaling in retrospect and the informational structure of markets. *American economic review*, vol. 92, n. 33, pp. 434-459.
- TAJ S.A. (2016), "Application of signaling theory in management research: Addressing major gaps in theory", *European Management Journal*, vol. 34, n. 4, pp. 338-348.

Individuals' Goal Alignment in Humane Entrepreneurial Oriented Organisations: A Preliminary Study

CHIARA MARINELLI¹ GRAZIA GARLATTI COSTA² SALVATORE DORE³

Abstract

In the evolving economic landscape, firms must face challenges and opportunities concerning sustainability in its societal, environmental and economic dimensions. Additionally, strategic HR management plays a key role within organisations, underlining the importance of ensuring employees' engagement and their alignment with overarching corporate goals. By departing from goal framing theory and the humane entrepreneurship perspective, this study aims to preliminarily explore the relationship between goal alignment and humane entrepreneurship. Using data from an ongoing data collection conducted among Italian firms' employees, we use scales currently under testing and validation to check for a potential relationship between the two constructs. The preliminary results suggest a positive mutually reinforcing relationship between goal alignment and humane entrepreneurship. We highlight the need for further investigation on this relationship, to the benefit of a deeper understanding of short- and long-term social and corporate sustainability aspects. Ultimately, we draw relevant and inspiring implications for theory and practice of management, entrepreneurship and organisational strategy.

Keywords: Goal Alignment, Humane Entrepreneurship, Sustainability

Framing of the research. *In the evolving global economy, organisations face unprecedented challenges and opportunities. The shifting social conditions and employees' working needs make re-evaluations of traditional business models and strategies necessary (Venkatesh & Speier, 2000). On the one hand, ensuring individual employees' objectives are aligned with the higher-level firms' goals is fundamental to strategic agility and corporate performance (Santos, 2012). On the other, prioritising ethical considerations, personnel's welfare, and social impact alongside profitability are key to demonstrating organisational commitment and engagement in human entrepreneurial aspects (Kim et al., 2021b). The emphasis on joint goals and appropriateness standards, proper of normative goal alignment, encourages employees' willingness to attain corporate objectives thanks to feelings of identification and collective share. Corporate humane entrepreneurship actions, in turn, can further reinforce individuals' engagement, their organisational identification and their alignment to higher-level objectives (Foss & Lindenberg, 2012). Therefore, exploring the relationship between goal alignment and sustainability-oriented entrepreneurial actions appears relevant to the current business scenario.*

Goal framing theory and goal alignment

Firstly, aligning individual employees' goals with the overarching corporate objectives is a critical determinant of organisational performance and competitive advantage (Lindenberg & Foss, 2011). In the context of goal orientation and strategic alignment, the goal framing theory explores how the frame of objectives and social, environmental variables affect people's perceptions, attitudes, and behaviours (Birkinshaw et al., 2014; Lindenberg & Steg, 2013). Indeed, the theory forecasts three overarching objectives: normative, gain, and hedonic goal frames. Scholars suggest normative goals harmonise with the corporate organisational, market, and strategic objectives, whereas hedonic and gain goals prioritise individual interests. While the hedonic category remarks the importance of personal and professional growth, gain goals emphasise individual well-being, encompassing a balanced work-life dynamic and satisfactory compensation in return for employment (Foss & Lindenberg, 2013; Lindenberg & Foss, 2011).

The most important aspect of the alignment between individual and corporate objectives is the concept of normative goals, which implies employees have incentives to act in line with established standards and codes of conduct within their companies while accomplishing specific tasks or goals (Lindenberg & Steg, 2007). Employees' normative objectives are

¹ University of Trieste
e-mail: chiara.marinelli@phd.units.it

² University of Trieste
e-mail: grazia.garlatticosta@units.it

³ University of Trieste
e-mail: salvatore.dore@amm.units.it

essential for the development of an organisational culture that is respectful of workers, allows their growth, and promotes a corporate idea of business ethics (Treviño & Nelson, 2016).

Moreover, in line with social identity theory, the goal framing theory maintains the normative goal is characterised by collective identification and the eagerness to act appropriately to the benefit of a supra-individual entity, such as the team or the organisation (Van Knippenberg, 2000). Scholars highlight how normative goal alignment contributes to the harmonisation of the goals of managers and employees with the firm's strategic imperatives, fostering a cohesive organisational culture where human and social capital can thrive (Buller & McEvoy, 2012). In turn, strategic management and human resource literature acknowledge employees' alignment with firms' goals is pivotal to the development of organisational capabilities and corporate performance, as well as to the growth of individuals' skills, motivations, and opportunities (Foss & Lindenberg, 2012). However, the transition from organisational goals into tangible results requires employees both understand firms' objectives and appreciate the actions and measures that are conducted to the fulfil the corporate strategy (Boswell et al., 2006).

Therefore, we advocate goal alignment can be encouraged and reinforced among normatively goal-aligned employees thanks to human-oriented measures and policies fostering their engagement, development and well-being (Alagaraja & Shuck, 2015). Actions in favour of people's well-being can be interpreted in a broader sense, encompassing communities' and environments' aspects along with economic ones. By adopting a comprehensive idea of corporate sustainability, promoting the congruence between employees' and organisational strategic goals underscores the critical importance of human resources as a strategic asset for value creation and long-term growth (Guest, 1997; Ribeiro & Gomes, 2016). In turn, the matching between human resources and organisational goals has the potential to foster corporate effectiveness and firms' performance, leading companies to higher competitive advantage (Guest, 2011; Wood, 1999). All in all, academic literature and business practice show corporate goals are increasingly tied to a more comprehensive concept of firm, where economic profits, human well-being and sustainability are recognized as increasingly intertwined (Muñoz & Dimov, 2015). This has led to the foundation of a new concept incorporating these aspects, namely humane entrepreneurship.

Humane entrepreneurship: a new, multifaceted concept

Humane entrepreneurship has emerged as a notion integrating business and human aspects within organisational boundaries (Kim et al., 2021a). The concept integrates the entrepreneurial orientation with an ethical approach, emphasizing the importance of communities' and environment's well-being in addition to economic aspects. Scholars define humane entrepreneurship as an entrepreneurial approach prioritizing human welfare and ethical considerations, leading to sustainable and socially responsible business practices (Kim et al., 2018; Parente et al., 2018). This approach challenges traditional business paradigms by advocating for a balance between profit generation and social responsibility (Parente & Kim, 2021).

The theoretical underpinnings of humane entrepreneurship draw from various disciplines, including business ethics, corporate social responsibility (CSR), and social entrepreneurship, along with the key concept of the creation of shared value (CSV) (Porter & Kramer, 2011; Santos, 2012). These perspectives reinforce the idea entrepreneurial ventures can operate for the greater good, thus emphasizing a humane approach benefits society and contributes to firms' competitive advantage (Vesci et al., 2021).

Empirical studies on humane entrepreneurship demonstrate its positive impact on various organisational outputs, including employee satisfaction, innovation, and financial performance (DiVito & Ingen-Housz, 2019; Kim et al., 2021b). For instance, scholars highlight how companies that invest in employee well-being and ethical practices tend to outperform their peers in the long run, which suggests a positive relationship between humane practices and corporate success. Similarly, organisations incorporating social and environmental considerations into their strategies are more likely to be sustainable and resilient (Le, 2022).

Although conceptualizations of humane entrepreneurship may not entirely coincide among scholars, its three main dimensions have been identified as the individual perceptions of entrepreneurship, sustainability, and human orientation (Parente et al., 2018). First, the individual perception of entrepreneurial orientation (IEO) reflects a person's inclination towards innovation, risk-taking, and proactiveness in identifying and exploiting opportunities, which puts into evidence the role of personal values and attitudes in shaping entrepreneurial ventures that are not only innovative but also ethically grounded (Lumpkin & Dess, 1996). Conversely, the individual perception of sustainability orientation (ISO) highlights a commitment to long-term ecological and societal well-being, thus integrating economic, environmental, and social goals for sustainable development (Parente et al., 2018; Schaltegger & Wagner, 2011). Indeed, sustainability-oriented businesses adopt holistic approaches to address societal challenges, demonstrating the potential of humane entrepreneurship to drive positive change in society (Stubbs & Cocklin, 2008). Lastly, the concept of the individual perceptions of human orientation (IHO) includes the emphasis placed on human values, well-being, and ethical treatment of all stakeholders (Kim et al., 2018). Pirson (2017) highlights the significance of IHO for current business activities, as this dimension is foundational to creating organisations excellent on both economic performance and human dignity, equality and social justice.

By integrating these three aspects of sustainability, i.e., IEO, ISO, and IHO, humane entrepreneurship offers the possibility of a comprehensive framework for understanding current entrepreneurial practice and foster growth. The balanced consideration of these aspects allows for harmonious integration of innovation, commitment to environmental sustainability, and dedication to human values and socially oriented actions among corporate goals addressing firms' competitiveness (Kim et al., 2021a).

Therefore, humane entrepreneurship actions are meant to create benefits to communities both internally and externally, employees and stakeholders included (Parente & Kim, 2021). As employees' involvement and identification with organisational goals are key to their goal alignment with firms strategies, measures undertaken to enhance an all-encompassing sustainability idea and meant to people's well-being reinforce workers' commitment to corporate objectives. The more people are normatively aligned to corporate goals, the more their alignment will be strengthened by the presence of humane entrepreneurship initiatives. In a reciprocal manner, more humane-entrepreneurship oriented actions will foster employees' appreciation of the firm, thereby fostering corporate goal alignment in a positive, mutually reinforcing loop. Consequently, the synergy among these dimensions shows high potential to enhance economic success and positively contribute to the society and the environment.

Overall, scholars suggest aligning employees' objectives with organisational goals optimizes corporate performance and sustainability and eases the development of a culture of empowerment, recognition, and personal development, which are key to humane entrepreneurship (Boswell et al., 2006). Therefore, by integrating emerging studies on corporate goal alignment and humane entrepreneurship, we suggest a mutually supportive relationship between the two concepts, where the former facilitates an organisational culture oriented to the latter, which in turn reinforces employees' commitment to fulfilling firms' objectives.

Purpose of the paper. The potential synergy between goal alignment and humane entrepreneurship offers a promising avenue for organisations to enhance their performance and their positive societal contribution. Nevertheless, these two concepts still lack adequate tools of evaluation and measurement. In the current understanding of goal alignment, grounded on goal framing theory, we miss an adequate tool of evaluation for the assessment of normatively goal aligned employees. Moreover, the lack of an accepted framework for implementing humane entrepreneurship practices poses a challenge for organisations seeking to adopt this approach (Dębicka et al., 2021). Additionally, despite ongoing academic debate, neither do scholars agree on a unique assessment tool for humane entrepreneurship, nor does a comprehensive instrument exist yet (Parente et al., 2020).

Therefore, this paper aims to explore the significance of the relationship between goal alignment and humane entrepreneurship, arguing it is essential for employees' supportive organisational cultures and performance. By integrating insights from the goal-framing literature, strategic management and organisational studies, we highlight the potential for academic theory and managerial practice of exploring the relationship between corporate goal alignment and humane principles, by also hinting at the main benefits of their synergy on human and financial aspects (Porter & Kramer, 2011).

In short, this preliminary study aims to shed light on the interlocutory relationship between goal alignment and humane entrepreneurship by also proposing for them new measurement scales, which are currently under testing and validation. In line with current literature, we expect firms that maintain a normative goal aligned organisational culture supported by humane entrepreneurship principles and practices are better equipped to obtain financial success and meaningfully contribute to societal well-being and environmental sustainability (Bocken et al., 2014).

In doing so, this paper enriches the debate on the role of humane entrepreneurial practices and strategic goal alignment in business strategy, offering new academic research avenues and practical insights for academics and leaders seeking to build more ethical, innovative, and resilient organisations in an era of global challenges and opportunities.

Methodology. The paper is grounded on a wider data collection involving 7 companies placed in the North-East of Italy. The sample of firms participating in the survey belong to different industry sectors and are of high dimensions (more than 250 employees). The data collection started at the beginning of 2024 and is currently ongoing.

Surveys are emailed to firms' employees mostly through their respective human resource managers. Managers are charged with forwarding the questionnaires links to their employees, and surveys were progressively closed around two weeks later. Therefore, we limit the present study to 3 firms that reached the target number of employees by mid-February 2024, for a sample of 744 workers.

The complete survey comprises more than 20 constructs of interest, for more than 50 items overall. The survey text was first elaborated in English and translated into Italian, following a back-to-back translation procedure as indicated by Brislin (1986). The variables included in the study pertain to individual perceptions of the work environment and individual working conditions, such as the perceived company's technology readiness, the implementation of agile working methods or creative behaviour. For the purposes of our research, however, we consider the following constructs.

Individual Perception of Entrepreneurial Orientation (IEO)

The scale measuring this first dimension of humane entrepreneurship is elaborated from the paper by Hansen et al. (2011), comprising six items evaluated on a seven-point Likert scale. The sentences pertain to new services or products launched or renewed by the company during the last three years, as well as to the entrepreneurial orientation and beliefs of higher-level managers and directors or the overall firm response to competitiveness.

Individual Perception of Sustainability Orientation (ISO)

The survey questions pertaining to ISO are drawn from Muñoz and Dimov (2015). Participants are asked to express their degree of agreement or disagreement on four sentences on a seven-point Likert scale, ranging from 1= strongly disagree to 7= strongly agree. Specifically, the items investigate firms' availability and willingness to adopt measures and implement actions to the benefit of their communities, the environment and a parsimonious use of resources.

Individual Perception of Human Orientation (IHO)

The construct is evaluated thanks to an adapted version of the scale from the article by Kim et al. (2018), which comprises four questions on a seven-point Likert scale. Participants are required to express their rate of agreement on statements regarding their perceptions of inclusion, non-discrimination and empathy by the firm managers. An example of sentence is 'The managers of the company I work for support people in their skills development' or 'The managers of the company I work for do not discriminate any individual'.

Goal alignment

In order to assess employees' alignment with corporate goals, participants are given six sentences with six objectives indicated by capital letters, two-by-two corresponding to normative, gain and hedonic overarching goals as according to the classification indicated by Foss & Lindenberg (2013). Then, participants are instructed to reorder the six goals from the most important to the least relevant to them, by writing down the order of the letters. Some examples of the goals are 'Work with people and having good social contact with co-workers' (hedonic), 'Having growth and career opportunities' (gain) and 'To reach my firm's objectives' (normative). Scores are assigned to each participant on the basis of the first two objectives present in their lists, where 0 means no normative goal in the first two positions, 1 stands for a normative goal in the second place, 2 indicates a normative goal in the first place and 3 both normative goals ranking first and second.

Control variables

We include as control variables participants' gender, age, level of education and caregiving responsibilities with respect to children or parents. As for work-related control variables, we ask participants' level of seniority within the company, their job position and type of contract.

Results. Preliminary analyses were conducted on a sample of 744 employees. Among the participants, 398 are men. Most people hold a high school diploma (57.5%), followed by those with a bachelor's or master's degree (30.8%). Moreover, an overwhelming majority (718 employees) hold a long-term contract and are between 39 and 54 years old (37.8%). Around 30% of the sample comprises executive staff and minor managerial figures, such as business unit representatives or heads of functions.

Since the constructs under examination are still under-explored by current literature and lack homogeneous and validated measurement tools, we undertook first exploratory and confirmatory factor analyses to find some preliminary confirmation of the validity of our scales. Although these analyses are still ongoing, the preliminary results provide some confirmation of the consistency of our operationalization of these variables.

After conducting the preliminary analyses and descriptives sample statistics, we plotted a Pearson correlation matrix showing the linear relationship among the variables of our interest. The results can be seen in Table 1.

Table 1. Correlation matrix coefficients for IEO, ISO, IHO and goal alignment. ** stands for $p < 0.001$. Source: the authors.

	IEO	ISO	IHO	GOAL ALIGNMENT
IEO	1	0.45**	0.39**	0.12**
ISO	0.45**	1	0.63**	0.16**
IHO	0.39**	0.63**	1	0.21**
GOAL ALIGNMENT	0.12**	0.16**	0.21**	1

First, we considered the bilateral relationships among the three dimensions of humane entrepreneurship and goal alignment. The correlation matrix reveals that the IEO, ISO and IHO dimensions show some degree of correlation one with the other, but their coefficients seem to suggest no multicollinearity risks as they are all below the 0.7 threshold. As for the relationship between the three separate dimensions of humane entrepreneurship and goal alignment, the Pearson correlation coefficients seem to suggest there is a mild to low linear relation between them, in a positive direction. Coefficients are all significant at 0.001.

At the subsequent stage, we aggregated the three humane entrepreneurship dimensions and considered them as a unique variable, namely humane entrepreneurship. The Cronbach's alpha for this scale is 0.74, which can be considered acceptable for an exploratory study of a scale that is not established yet. The corrected item-total correlation also shows values above 0.3, indicating no major issues within the item-total statistics.

Table 2 shows the results of the Pearson correlation between goal alignment and humane entrepreneurship.

Table 2. Correlation matrix coefficients for goal alignment and humane entrepreneurship. ** stands for $p < 0.001$. Source: the authors.

	GOAL ALIGNMENT	HUMANE ENTREPRENEURSHIP
GOAL ALIGNMENT	1	0.205**
HUMANE ENTREPRENEURSHIP	0.205**	1

Also in this case, we highlight the correlation between the two variables (goal alignment and humane entrepreneurship) is positive and significant ($p < 0.001$), although the magnitude of the coefficient suggests a mild relationship between the two constructs.

Consequently, based on the above-mentioned literature framework and evidence from current practice, we interpret our preliminary results as encouraging to deepen the relationship between the two variables. As these are pure

correlations, we are interested in moving further and exploring the role played by other intervening variables that could provide us with a refined understanding of the relationship between goal alignment and humane entrepreneurship. Among these variables, we think a promising explanatory role could be covered by variables pertaining to individual perceptions of corporate aspects (of innovative working practices, of technological invasion and so forth) or to personal conditions on the workplace (such as job autonomy).

It is also plausible that, with a different sample of employees, we could obtain diverse results in the direction of a stronger relationship between goal alignment and humane entrepreneurship. Importantly, the elaboration of the measurement scales needs to undergo further trials and refinement efforts, in order to improve the validity of these research assessment tools. Nevertheless, the preliminary results of the present paper seem to suggest that moving forward and better exploring the mechanisms and the intertwined dynamics of goal alignment and humane entrepreneurship could be a promising avenue for future research studies and for business practice.

Research limitations. The main limitation of the study pertains to the cross-sectional design of the survey, which does not allow us to assert causal linkages among the variables of interest. Moreover, we underline the fact that we rely on self-reported measures by participants, with the risk of common method bias. Despite adopting design precautions during the survey elaboration, this potential risk must nevertheless be reported.

In addition, we point out the limited geographic scope of our research, which hinders generalisability of our findings. We also warn that the differences among the firms of our sample in terms of employees' sample sizes, business unit groupings and other factors hinder any intra-group comparisons, suggesting it is better to consider data per company in aggregate terms.

Lastly, we remark that we make use of new scales that have undergone preliminary exploratory and confirmatory factor analyses, which deserve and are in need for further testing and refinement. Therefore, results are far from conclusive, as the measurement tools themselves are not entirely finalised.

Managerial implications. The findings of this study offer significant insights into the synergy between goal alignment and humane entrepreneurship, presenting valuable implications for managers and entrepreneurs striving to foster innovative, sustainable, and socially responsible business environments.

Firstly, our preliminary results encourage managers to take actions to align organisational objectives with humane entrepreneurship aspects, by incorporating social, ethical, and environmental considerations within firms' goals. This means cultivating a corporate culture which reinforces long-term commitment to sustainable outcomes. Therefore, organisations are encouraged to involve their employees and value their contribution to achieve corporate objectives, which may lead to higher motivation, creativity, and loyalty. To this end, training and development programs that promote these values and enable employees to actively contribute to humane-oriented corporate actions may be useful. In a positive mutually reinforcing cycle, this may strengthen employees' sense of belonging and commitment to organisational goals. We show that companies have the possibility to integrate economic objectives with corporate sustainability goals, to the benefit of their employees' well-being.

Secondly, the study implications extend beyond internal organisational management and underline the importance of fostering a humane entrepreneurship image to cater to a wider public of stakeholders. Beyond employees, public commitment to sustainable objectives may translate in higher involvement of customers, investors, and partners who share similar values. Therefore, companies adopting corporate practices in the direction of humane entrepreneurship have the potential to attract socially conscious investments and foster collaborative partnerships benefitting corporate sustainable growth.

Thirdly, preliminary research in the field highlights the need for firms' policies and governance structures that support organisational cultures of employees' alignment to corporate goals. Apart from economic benefits, leaders should enhance and implement policies that promote ethical business practices, social responsibility and environment-friendly actions, paying attention to ensure the pursuit of business goals matches with humane exigencies.

Lastly, this preliminary study results seems to suggest businesses demonstrating a strong commitment to humane entrepreneurship actions are more likely to be innovative and adaptable. This approach may be beneficial to effectively address societal, environmental and economic challenges, thus opening up new growth and employees' development opportunities.

Originality of the paper. Thanks to our paper, we provide a new and interesting perspective on the integration of goal-framing theory with humane entrepreneurship, suggesting a mutually reinforcing relationship between a cohesive and strategically aligned organisational culture and humane entrepreneurial practices. The originality of this research lies in its comprehensive standpoint which integrates insights from organisational behaviour, strategic management and entrepreneurship, delving into how individuals' and organisational goals can align to the benefit of economic, societal and environmental sustainability. The study also remarks the importance of adopting humane entrepreneurial measures, in order to enhance both people's well-being and corporate performance.

The present investigation stands out for its multi-dimensional analysis of goal alignment and humane entrepreneurship processes, offering a novel perspective on the mechanisms through which employees' commitment and engagement with corporate objectives can be maximised. Contextually, we present scales currently under testing and in need for further validation on goal alignment and humane entrepreneurship, which are new concepts still in need of adequate measurement tools currently missing in present literature. We also show the first results of an ongoing study

including these measurement scales, which are among the first operationalisations of the humane entrepreneurship and goal alignment constructs. By doing this, we hope to encourage further academic contributions in the field.

Lastly, the preliminary findings of this study offer a valuable perspective to organisational and management studies, underscoring the potential of the synergy between goal alignment and humane entrepreneurship to both individual and corporate success. In the end, we hope to stimulate further research on the evolving dynamics between goal alignment and humane entrepreneurship within diverse organisational contexts and over time.

References

- ALAGARAJA M., SHUCK B. (2015), "Exploring organisational Alignment-Employee engagement linkages and impact on individual performance", *Human Resource Development Review*, vol. 14, n. 1, pp. 17-37.
- BIRKINSHAW J., FOSS N.J., LINDENBERG S. (2014), "Combining purpose with profits", *MIT Sloan Management Review*, vol. 55, n. 3, pp. 49-56.
- BOCKEN N., SHORT S.W., RANA P., EVANS S. (2014), "A literature and practice review to develop sustainable business model archetypes", *Journal of Cleaner Production*, vol. 65, pp. 42-56.
- BOSWELL W.R., BINGHAM J., COLVIN A.J.S. (2006), "Aligning employees through 'line of sight'", *Business Horizons*, vol. 49, n. 6, pp. 499-509.
- BRISLIN R.W. (1970), "Back-Translation for Cross-Cultural research", *Journal of Cross-Cultural Psychology*, vol. 1, n. 3, pp. 185-216.
- BULLER P.F., MCEVOY G.M. (2012), "Strategy, human resource management and performance: Sharpening line of sight", *Human Resource Management Review*, vol. 22, n. 1, pp. 43-56.
- DĘBICKA A., OLEJNICZAK K., SKĄPSKA J. (2021), "Enterprises' perception and practice of humane entrepreneurship", *Journal of Small Business and Enterprise Development*, vol. 29, n. 1, pp. 127-146.
- DIVITO L., INGEN-HOUSZ Z. (2019), "From individual sustainability orientations to collective sustainability innovation and sustainable entrepreneurial ecosystems", *Small Business Economics*, vol. 56, n. 3, pp. 1057-1072.
- FOSS N.J., LINDENBERG S. (2012), "Teams, team motivation, and the theory of the firm", *Managerial and Decision Economics*, vol. 33, n. 5-6, pp. 369-383.
- FOSS N.J., LINDENBERG S. (2013), "Micro-Foundations for Strategy: A Goal-Framing perspective on the drivers of value creation", *Social Science Research Network*.
- GUEST D. (1997), "Human resource management and performance: a review and research agenda", *International Journal of Human Resource Management*, vol. 8, n. 3, pp. 263-276.
- GUEST D. (2011), "Human resource management and performance: still searching for some answers," *Human Resource Management Journal*, vol. 21, n. 1, pp. 3-13.
- HANSEN J.C., DEITZ G.D., TOKMAN M., MARINO L., WEAVER K.M. (2011), "Cross-national invariance of the entrepreneurial orientation scale", *Journal of Business Venturing*, vol. 26, n. 1, pp. 61-78.
- KIM K.-C., ELTARABISHY A., BAE Z. (2018), "Humane Entrepreneurship: How focusing on people can drive a new era of wealth and quality job creation in a sustainable world", *Journal of Small Business Management*, vol. 56, pp. 10-29.
- KIM K.-C., HORNSBY J.S., ENRIQUEZ J.L., BAE Z., TARABISHY A.E. (2021), "Humane Entrepreneurial Framework: A model for effective corporate entrepreneurship", *Journal of Small Business Management*, vol. 59, n. 3, pp. 397-416.
- KIM S.H., WAGSTAFF M.F., LAFFRANCHINI G. (2021), "Does humane orientation matter? A cross-cultural study of job characteristics needs-supplies fit/misfit and affective organisational commitment", *Cross Cultural & Strategic Management*, vol. 28, n. 3, pp. 600-625.
- LE T.T. (2022), "How humane entrepreneurship fosters sustainable supply chain management for a circular economy moving towards sustainable corporate performance", *Journal of Cleaner Production*, vol. 368, p. 133178.
- LINDENBERG S., FOSS N.J. (2011), "Managing Joint Production motivation: the role of goal framing and governance mechanisms", *Academy of Management Review*, vol. 36, n. 3, pp. 500-525.
- LINDENBERG S., STEG L. (2007), "Normative, gain and hedonic goal frames guiding environmental behaviour", *Journal of Social Issues*, vol. 63, n. 1, pp. 117-137.
- LINDENBERG S., STEG L. (2013), "Goal-Framing theory and Norm-Guided environmental behaviour", *Psychology Press eBooks*, pp. 47-64.
- LUMPKIN G.T., DESS G.G. (1996), "Clarifying the entrepreneurial orientation construct and linking it to performance", *Academy of Management Review*, vol. 21, n. 1, pp. 135-172.
- MUÑOZ P., DIMOV D. (2015), "The call of the whole in understanding the development of sustainable ventures", *Journal of Business Venturing*, vol. 30, n. 4, pp. 632-654.
- PARENTE R., ELTARABISHY A., VESCI M., BOTTI A. (2018), "The Epistemology of Humane Entrepreneurship: Theory and Proposal for Future Research agenda", *Journal of Small Business Management*, vol. 56, pp. 30-52.
- PARENTE R., KIM K.-C. (2021), "Editorial: Contemporary Perspectives on Social and Humane Entrepreneurship", *Journal of Small Business Management*, vol. 59, n. 3, pp. 371-372.
- PARENTE R., TARABISHY A.E., BOTTI A., VESCI M., FEOLA R. (2020), "Humane entrepreneurship: Some steps in the development of a measurement scale", *Journal of Small Business Management*, vol. 59, n. 3, pp. 509-533.
- PIRSON M. (2017), "A humanistic perspective for management theory: Protecting Dignity and Promoting Well-Being", *Journal of Business Ethics*, vol. 159, n. 1, pp. 39-57.
- PORTER M.E., KRAMER M.R. (2011), "Creating shared value", *Harvard Business Review*, vol. 89, pp. 62-77.
- RIBEIRO J.S., GOMES D. (2016), "Other organisational perspectives on the contribution of human resources management to organisational performance", *Palgrave Macmillan UK eBooks*, pp. 63-106.
- SANTOS F. (2012), "A positive theory of social entrepreneurship", *Journal of Business Ethics*, vol. 111, n. 3, pp. 335-351.
- SCHALTEGGER S., WAGNER M. (2011), "Sustainable entrepreneurship and sustainability innovation: categories and interactions", *Business Strategy and the Environment*, vol. 20, n. 4, pp. 222-237.

- STUBBS W., COCKLIN C. (2008), "Conceptualizing a 'Sustainability business model'", *Organisation & Environment*, vol. 21, n. 2, pp. 103-127.
- TREVIÑO L.K., NELSON K.M. (2011), *Managing business ethics: straight talk about how to do it right*, 5th ed., John Wiley & Sons, New York.
- VAN KNIPPENBERG D. (2000), "Work Motivation and Performance: A Social Identity perspective", *Applied Psychology*, vol. 49, n. 3, pp. 357-371.
- VENKATESH V., SPEIER C. (2000), "Creating an effective training environment for enhancing telework", *International Journal of Human-Computer Studies*, vol. 52, n. 6, pp. 991-1005.
- VESCI M., BOTTI A., FEOLA R., CONTI E., TARABISHY A.E. (2022), "Bridging theory and practice in the humane entrepreneurship domain: insights from small and medium Italian enterprises", *Journal of Small Business and Enterprise Development*, vol. 30, n. 3, pp. 567-586.
- WOOD S. (1999), "Human resource management and performance", *International Journal of Management Reviews*, vol. 1, n. 4, pp. 367-413.

Open Social Innovation per affrontare le sfide globali: il caso Isinnova

VALENTINA CUCINO¹ ROSANGELA FEOLA² GIULIO FERRIGNO³

Abstract

Questo articolo esplora il concetto di innovazione sociale aperta come approccio fondamentale per affrontare sfide sociali importanti come il cambiamento climatico, le pandemie e le disuguaglianze. Questo modello promuove la collaborazione tra cittadini, società civile, organizzazioni del settore privato, istituzioni e pubblica amministrazione per affrontare collettivamente le sfide, dall'identificazione dei problemi alla scala delle soluzioni innovative. L'apertura di questo processo favorisce lo sviluppo e il miglioramento delle soluzioni, facilita un apprendimento rapido attraverso contesti sociali diversificati e genera impatti positivi sulla società. Lo sforzo collettivo orchestrato dell'innovazione sociale aperta aiuta a conciliare le incertezze associate alla complessa natura delle sfide sociali. Sottolineando la necessità di azioni collettive e sforzi imprenditoriali che coinvolgano diverse parti interessate, gli autori indagano su come le pratiche di innovazione aperta possano essere adattate con una prospettiva sociale. Più specificamente, partendo dall'analisi delle pratiche classiche di innovazione aperta definite dalla letteratura sul tema, lo scopo del paper è quello di analizzare le caratteristiche specifiche delle pratiche di innovazione sociale aperta mettendo in evidenza la loro configurazione specifica in un contesto sociale. Il paper contribuisce sia dal punto di vista teorico che pratico. Dal punto di vista teorico, il paper contribuisce alla recente letteratura sulle innovazioni sociali aperte attraverso l'identificazione e la caratterizzazione delle pratiche di innovazione sociale aperta. Dal punto di vista pratico, il paper fornisce utili spunti per manager e decisori politici al fine di definire strategie e politiche volte ad affrontare le sfide sociali adottando un approccio di innovazione aperta.

Key words: open social innovation; open innovation; innovazioni sociali; sfide sociali

Impostazione della ricerca Affrontare importanti sfide sociali come il cambiamento climatico, le pandemie o le disuguaglianze richiede azioni collettive e sforzi imprenditoriali che coinvolgano cittadini, governi, istituzioni e organizzazioni non governative (Chesbrough, 2020; Markman et al., 2019; Seelos et al., 2023). In questo contesto, emerge il concetto di open social innovation come un paradigma di notevole rilevanza nell'affrontare le sfide sociali, in quanto si tratta di una pratica che promuove il coinvolgimento di attori diversi nei processi di innovazione (Bogers et al., 2020; Chesbrough & Di Minin, 2014; McGahan et al., 2021). L'apertura ai processi di innovazione sociale richiede infatti che manager e imprenditori incoraggino e coordinino la partecipazione di molteplici stakeholder (Chesbrough & Di Minin, 2014; Cucino, 2023; Mair et al., 2022, 2023). In altre parole, l'innovazione sociale aperta incoraggia la collaborazione tra attori di diverse origini per trovare soluzioni innovative ai problemi sociali (Bertello et al., 2022; Mair et al., 2022; Mair & Gegenhuber, 2021). Secondo questo paradigma, cittadini, società civile, organizzazioni del settore privato, istituzioni e pubblica amministrazione lavorano insieme in un'azione collettiva lungo l'intero processo di innovazione: dall'identificazione delle sfide alla generazione di idee per affrontarle, e infine, alla scala di queste soluzioni (Cucino, 2023; Vesci et al., 2021).

La ricerca ha mostrato come l'open social innovation offre molti benefici tra i diversi attori coinvolti nel processo di innovazione sociale (Bertello et al., 2022; Bogers et al., 2020; Chesbrough & Di Minin, 2014; Mair et al., 2022). In primo luogo, il processo di interazione promuove lo sviluppo di nuove soluzioni o il potenziamento di quelle esistenti (Chesbrough & Di Minin, 2014). In secondo luogo, basandosi su una comprensione condivisa del problema, attori provenienti da contesti sociali diversi (ad esempio, amministrazione pubblica o innovatori della società civile) possono imparare insieme e superare più rapidamente le sfide sociali (Bertello et al., 2022; Mair et al., 2022). Inoltre, il paradigma dell'open social innovation non solo consente lo sviluppo e l'attuazione di soluzioni innovative, ma avvia anche un processo di apprendimento capace di generare un impatto sociale positivo (Bogers et al., 2020; Mair et al., 2022). Inoltre, avvicinandosi all'innovazione sociale aperta come uno sforzo collettivo orchestrato aiuta a conciliare le incertezze associate alla natura complessa e sistemica delle sfide sociali (Hargrave & Van De Ven, 2006; Markman et al., 2019; Mair & Seelos, 2017).

¹ Scuola Sant'Anna, Pisa
e-mail: valentina.cucino@santannapisa.it

² Università di Salerno
e-mail: rfeola@unisa.it

³ Scuola Sant'Anna, Pisa
e-mail: giulio.ferrigno@santannapisa.it

Tuttavia, nonostante l'interesse recente e crescente sul potenziale dell'innovazione aperta per affrontare le sfide sociali (Gegenhuber e Mair, 2024), poco è stato esplorato su come le pratiche di open social innovation generino impatto sociale. Comprendere questa questione implica inevitabilmente che i ricercatori debbano considerare tutti gli stakeholder coinvolti, nonché le iniziative - costellazioni di problemi, soluzioni e attori - che emergono dal processo di innovazione sociale basato sull'azione collettiva (Giones et al., 2020; Muñoz et al., 2020; Vanderhoven et al., 2020).

Obiettivo del paper. Per far progredire la comprensione teorica dell'open social innovation, gli autori declinano l'open social innovation come fenomeno multi-stakeholder basato sull'azione collettiva e sforzi imprenditoriali che coinvolgono diverse parti interessate. Come tale, esplorano come le pratiche di open innovation possano essere adattate con una prospettiva sociale. In questo contesto, partendo dall'analisi delle pratiche classiche di innovazione aperta definite dalla letteratura sul tema (Ferrigno et al., 2022, Spithoven et al., 2013) gli autori analizzano le caratteristiche specifiche delle pratiche di open social innovation mettendo in evidenza la loro configurazione specifica in un contesto di livello sociale.

Più specificamente, gli autori avanzano le seguenti domande di ricerca: Come possono essere caratterizzate le pratiche di open social innovation in un contesto sociale per affrontare le sfide sociali? Come cambiano le pratiche tradizionali di innovazione aperta in un contesto multi-stakeholder in cui diversi attori provenienti da vari settori lavorano insieme in un'azione collettiva lungo il processo di innovazione sociale?

Metodologia della ricerca. Per rispondere alla domanda di ricerca dello studio, gli autori conducono un'analisi qualitativa completa di un caso studio di spicco di innovazione sociale aperta. Più specificamente, gli autori analizzano l'open social innovation generata da Isinnova, una società di consulenza e ricerca italiana specializzata in innovazione e sviluppo sostenibile che è stata globalmente riconosciuta come un caso di innovazione sociale di grande successo durante la crisi pandemica. L'analisi qualitativa è radicata su una vasta quantità di interviste, osservazioni, dati archivistici con Isinnova e la moltitudine di stakeholder coinvolti nel suo processo di innovazione sociale aperta.

Le informazioni sono state raccolte attraverso sei interviste dirette al team di Isinnova e ad altri stakeholder coinvolti nel processo di ricerca e sviluppo, triangolate con altre fonti di dati (Gibbert et al., 2008), come l'analisi di documenti archiviati, siti web, documentari e interviste video. I dati sui processi innovativi dell'azienda sono stati raccolti in più fasi tra il 24 aprile 2020 e marzo 2023.

Le interviste sono state selezionate utilizzando una strategia di "snowball sampling" (Patton, 1990). Le interviste sono state condotte in italiano tramite Skype e telefono cellulare, registrate e successivamente trascritte. Le interviste si sono concentrate sul processo di innovazione e sul ruolo di tutti gli attori coinvolti nello sviluppo dei nuovi prodotti.

Per quanto riguarda il protocollo di intervista, questo studio ha utilizzato una combinazione di approcci intervistativi di storia di vita (Atkinson, 1998, 2002) e interviste fenomenologiche (Thompson et al., 1989). Non sono stati utilizzati script predefiniti, consentendo alle domande di fluire naturalmente durante la conversazione, mirando ad acquisire la descrizione e l'interpretazione dell'evento di ricerca e sviluppo da parte del partecipante. L'adozione di interviste sulla storia di vita è un modo per sia l'intervistatore che il rispondente di "costruire insieme narrazione e significato" e quindi "rendere significativi eventi ed esperienze" (Riessman, 2008, p. 23), essendo partecipanti attivi nella narrazione. In questo senso, ogni partecipante ha raccontato le proprie storie in modi diversi, offrendo l'opportunità di esplorare in profondità il processo di innovazione sociale aperta e gli elementi che caratterizzano le pratiche di innovazione aperta applicate durante il processo.

I dati raccolti sono stati esaminati ed interpretati attraverso la tecnica dell'analisi del contenuto qualitativo, secondo il metodo proposto da Gioia et al. (2013). L'analisi del contenuto consente di interpretare i dati attraverso un processo in cui le interviste trascritte sono considerate come unità di analisi e vengono interpretate dai ricercatori. Il processo interpretativo richiesto non è strutturato né codificato. Pertanto, è necessario integrare questa tecnica con i criteri posti dalla metodologia di Gioia.

Secondo questi criteri, gli autori hanno analizzato individualmente le interviste al fine di identificare i principali temi emergenti e derivare i concetti di primo ordine. Quindi, a partire dalla multipla identificazione dei concetti di primo ordine, tutti gli autori hanno discusso e confrontato i loro schemi di codifica, per ottenere uno schema di primo ordine condiviso e unico.

Successivamente, gli autori hanno effettuato un'analisi di secondo ordine per identificare nuove categorie concettuali (temi di secondo ordine), ottenute dall'aggregazione "semantica" dei concetti di primo ordine. In questo passaggio, il processo iterativo tra teoria ed evidenza ha portato all'identificazione di alcune caratteristiche distintive delle pratiche di innovazione aperta in contesto sociale.

Infine, i temi di secondo ordine sono stati aggregati in dimensioni teoriche, a partire dall'identificazione di unità minime di significato dalle sotto-categorie di concetti identificate nel passaggio precedente.

Risultati. I nostri risultati hanno rivelato che l'adozione di pratiche di innovazione sociale aperta può essere estremamente vantaggiosa per affrontare le complesse problematiche che affliggono le società contemporanee.

In particolare, gli autori hanno identificato come le quattro pratiche chiave dell'open innovation si modificano in chiave sociale per perseguire soluzioni innovative per le sfide sociali.

Prima di tutto, le analisi hanno mostrato come durante periodi di crisi, come nel caso delle pandemie, la ricerca di informazioni esterne e fonti di innovazione diventa decentralizzata. Questo processo coinvolge non solo singoli attori, ma anche una vasta rete di stakeholder, promuovendo un approccio collaborativo e inclusivo alla risoluzione dei problemi (Chesbrough and Di Minin, 2014; Mair et al., 2023).

In secondo luogo, le analisi hanno mostrato l'importanza della flessibilità nell'utilizzo delle risorse esistenti e delle innovazioni. Durante periodi di crisi, l'agilità e la capacità di adattamento (Vesci et al., 2021; von Hippel, 1986) diventano fondamentali per rispondere prontamente alle esigenze emergenti e sfruttare al meglio le risorse disponibili.

Un'altra pratica chiave che viene modificata è la co-creazione di valore con le comunità. In questo contesto, il coinvolgimento attivo dei partner diventa essenziale per affrontare le sfide sociali in modo efficace. La collaborazione con una vasta gamma di attori, inclusi cittadini, organizzazioni non governative e settore privato, consente di sviluppare soluzioni innovative che rispondono alle esigenze reali della società.

Infine, le analisi evidenziano l'importanza di combinare i diritti di proprietà intellettuale con sistemi open source. Mentre la protezione della proprietà intellettuale può essere importante per garantire il successo e la sostenibilità delle innovazioni, abbiamo osservato che in certi contesti, come quello delle sfide sociali, il profitto economico può essere sacrificato a favore della risoluzione delle problematiche sociali (Cucino et al., 2023; Ferrigno and Cucino, 2021). Questo approccio mira a garantire che le soluzioni innovative siano accessibili e utilizzabili da un'ampia gamma di attori, riducendo al minimo il rischio di speculazioni e garantendo un impatto sociale positivo a lungo termine.

Complessivamente, i risultati confermano l'importanza e la rilevanza dell'open social innovation nel contesto delle sfide sociali. Queste pratiche non solo offrono soluzioni concrete ai problemi esistenti, ma promuovono anche la collaborazione, l'inclusione e la sostenibilità, contribuendo così a costruire una società più equa e resiliente.

Limiti della ricerca. Nel delineare i limiti della ricerca, è essenziale considerare diversi aspetti che potrebbero influenzare la sua portata e la sua validità. In primo luogo, va sottolineata la questione della generalizzabilità dei risultati. Poiché gli autori si sono concentrati su un singolo caso studio, quello di Isinnova durante la pandemia da COVID-19, potrebbe esserci una limitazione nella capacità di estendere le conclusioni ad altri contesti con sfide sociali diverse e ambienti culturali variabili.

Un altro punto da considerare riguarda il rischio di bias derivante dalla natura stessa di un caso studio, che potrebbe introdurre soggettività nell'interpretazione dei dati. È possibile che gli intervistati abbiano una visione limitata delle attività di Isinnova, influenzando così la rappresentazione dei processi di innovazione sociale aperta.

Inoltre, sebbene gli autori abbiano esaminato dettagliatamente il processo di open social innovation di Isinnova, non viene fatta un'analisi specifica sull'impatto sociale delle soluzioni sviluppate. Questo potrebbe rappresentare un limite nella valutazione degli effetti reali delle pratiche di innovazione sociale aperta sulle comunità e sulla società nel suo complesso. In conclusione, affrontare questi limiti potrebbe arricchire ulteriormente la nostra comprensione dell'innovazione sociale aperta e del suo impatto sulle sfide sociali, consentendo una prospettiva più approfondita e completa sull'argomento.

Implicazioni manageriali Ci sono almeno cinque lezioni pratiche da trarre dal caso di Isinnova in una situazione di sfida globale come la pandemia da Covid-19, le quali possono rivelarsi preziose per affrontare future crisi. In primo luogo, l'innovazione sociale aperta ha mobilitato le conoscenze di un vasto esercito volontario di attori provenienti da vari settori, discipline, luoghi e campi, promuovendo l'apprendimento e accelerando il progresso contro la malattia. In un contesto di emergenza futura, un approccio aperto si rivela l'unica via per abbracciare rapidamente e proattivamente gli stimoli all'innovazione generati da una crisi.

In secondo luogo, il successo di un'azienda dipende dalla scelta dei partner giusti e dalla corretta combinazione di competenze interdisciplinari. I numerosi partner con cui Isinnova ha collaborato sono stati un elemento fondamentale per la creazione e, soprattutto, la diffusione dell'innovazione. Questa esperienza dimostra che, in un contesto di crisi, collaborare con i partner adeguati è più critico che mai per accedere alle conoscenze necessarie e sviluppare rapidamente nuove innovazioni.

In terzo luogo, il concetto di brevetto non riguarda esclusivamente il profitto economico. In situazioni di grave emergenza, i profitti finanziari devono essere messi da parte poiché altre necessità, come il contributo alla comunità, assumono la massima priorità. Isinnova ha reso disponibili i propri progetti come open source per garantire che la sua innovazione potesse raggiungere il maggior numero possibile di operatori, consentendo la produzione di valvole non solo in Italia, ma anche all'estero. Le aziende devono pertanto valutare attentamente le pratiche di protezione della proprietà intellettuale, riconoscendo che il brevetto è uno strumento per proteggersi da possibili abusi da parte di terzi, ma non rappresenta necessariamente il mezzo principale per trarre profitto da una propria invenzione.

In quarto luogo, la mobilitazione di attori e risorse è un fattore chiave nel gestire situazioni di crisi e offrire soluzioni innovative efficaci e ad alto impatto. È infatti attraverso un appello sul proprio sito web che l'azione benefica di Isinnova ha ottenuto risonanza mediatica e ha coinvolto il maggior numero possibile di attori per affrontare l'emergenza da Covid-19. Le aziende devono pertanto considerare che, in situazioni di crisi, gli attori che compongono il sistema economico di un paese sono più sensibili alle esigenze della società e si mobilitano per affrontare questa necessità urgente.

Infine, tralasciando i casi piuttosto rari in cui l'innovazione sociale è guidata da organizzazioni pubbliche con aperture verso l'esterno, l'innovazione sociale implica generalmente un processo molto più radicato e decentralizzato. Di conseguenza, sono necessari strumenti adeguati perché l'innovazione sociale aperta possa avere luogo. Ad esempio, le tecnologie digitali sono potenti abilitatori, ma sono spesso necessarie anche risorse tangibili. In tal senso, Bria et al. (2015) sottolineano che mentre le soluzioni digitali sono molto utili per risolvere sfide sociali, la prossima fase dell'innovazione sociale digitale probabilmente si baserà fortemente sull'uso di makerspaces, fab labs e altri spazi collaborativi, poiché questi ambienti ampliano ulteriormente lo spettro di innovazione sociale reso possibile dalle tecnologie digitali.

In conclusione, l'innovazione sociale aperta facilita l'identificazione e la comprensione delle sfide della società attraverso un ciclo virtuoso di interazioni con vari attori che condividono la necessità di contribuire alla società. I cittadini possono trovare soluzioni insieme alle amministrazioni pubbliche e ad altre persone e istituzioni rilevanti se entrambe le parti portano all'attenzione del tavolo apertura, competenze e risorse necessarie.

Originalità del paper. Lo studio ha diversi elementi di originalità che alla comprensione dell'innovazione sociale aperta e del suo impatto sulle sfide della società contemporanea. In primo luogo, gli autori hanno individuato e analizzato pratiche di open social innovation che si distinguono dalle tradizionali strategie di innovazione. Questo aspetto è significativo poiché spesso mancava una comprensione approfondita di come l'innovazione aperta potesse essere applicata efficacemente per risolvere problemi sociali.

Secondo, Isinnova è stata frequentemente esaminata da studi precedenti (Corsini et al., 2021; Ferrigno & Cucino, 2021; Tani et al., 2022; Vesci et al., 2021). Alcuni di essi hanno fornito contributi significativi investigando sull'innovazione frugale in una situazione di crisi (Corsini et al., 2021; Vesci et al., 2021); altri hanno analizzato azioni di innovazione mirate (Ferrigno & Cucino, 2021). Tuttavia, presi nel loro insieme, questi studi hanno principalmente discusso del ruolo di Isinnova durante un contesto di crisi e dal punto di vista dell'azienda. Al contrario, in questo articolo viene fornita un'analisi ben documentata delle pratiche di open social innovation implementate dall'azienda e dai suoi principali stakeholder anche dopo il contesto di crisi.

Infine, gli autori hanno fornito indicazioni pratiche per manager e decisori politici. Le nostre offrono utili linee guida su come sviluppare strategie e politiche per affrontare le sfide sociali attraverso l'innovazione aperta, rendendo il lavoro rilevante non solo a livello accademico, ma anche operativo per coloro che devono prendere decisioni manageriali e politiche.

References

- ATKINSON R. (1998), *The life story interview*. Sage
- ATKINSON R. (2002), "The life story interview", In: Gubrium J.F. and Holstein J.A. (eds), *Handbook of Interview Research*. Thousand Oaks, CA: Sage Publications Inc. pp. 120-141
- BERTELLO A., BOGERS M.L.A.M., DE BERNARDI P. (2022), "Open innovation in the face of the COVID-19 grand challenge: Insights from the Pan-European hackathon 'EUvsVirus'", *R&D Management*, vol. 52, n. 2, pp. 178-192.
- BOGERS M., CHESBROUGH H., STRAND R. (2020), "Sustainable open innovation to address a grand challenge: Lessons from Carlsberg and the Green Fiber Bottle", *British Food Journal*, vol. 122, n. 5, pp. 1505-1517.
- CHESBROUGH H., DI MININ A. (2014), "Open Social Innovation", In Chesbrough H., Vanhaverbeke W., West J. (A c. Di), *New Frontiers in Open Innovation* (pp. 169-188), OUP Oxford.
- CUCINO V. (2023), *Innovazione rigenerativa. processi di creazione di valore per la società*. Aracne.
- CUCINO V., FERRIGNO G., CRICK J., PICCALUGA A. (2024), "Identifying entrepreneurial opportunities during crises: a qualitative study of Italian firms", *Journal of Small Business and Enterprise Development*, vol. 31, n. 8, pp. 47-76.
- CUCINO V., LUNGU D.A., DE ROSIS S., PICCALUGA A. (2023), "Creating value from purpose-based innovation: Starting from frailty", *Journal of Social Entrepreneurship*, vol. 1, n. 1 pp. 1-29.
- FERRIGNO G., CUCINO V. (2021), "Innovating and transforming during COVID-19: insights from Italian firms", *R&D Management*, vol. 51, n. 4, pp. 325-338.
- FERRIGNO G., DEL SARTO N., CUCINO V., PICCALUGA A. (2022), "Connecting organizational learning and open innovation research: an integrative framework and insights from case studies of strategic alliances", *The Learning Organization*, vol. 29, n. 6, pp. 615-634.
- GEGENHUBER T., MAIR J., LÜHRSEN R., THÄTER L. (2023), „Orchestrating distributed data governance in open social innovation", *Information and Organization*, vol. 33, n. 1, 100453
- GIOIA D.A., CORLEY K.G., HAMILTON A.L. (2013), "Seeking qualitative rigor in inductive research: Notes on the Gioia methodology", *Organizational research methods*, vol. 16, n. 1, pp. 15-31
- HARGRAVE T.J., VAN DE VEN A.H. (2006), "A collective action model of institutional innovation", *Academy of management review*, vol. 31, n. 4, pp. 864-888.
- MAIR J., GEGENHUBER T., LÜHRSEN R., THÄTER L. (2022), *UpdateDeutschland: Open Social Innovation thinking ahead and learning*. <https://doi.org/10.48462/opus4-4292>
- MAIR J., GEGENHUBER T., THÄTER L., LÜHRSEN R. (2023), "Pathways and mechanisms for catalyzing social impact through Orchestration: Insights from an open social innovation project", *Journal of Business Venturing Insights*, vol. 19, pp. e00366.
- MARKMAN G.D., WALDRON T.L., GIANIODIS P.T., ESPINA M.I. (2019), "E Pluribus Unum: Impact Entrepreneurship as a Solution to Grand Challenges", *Academy of Management Perspectives*, vol. 33, n. 4, pp. 371-382.
- MCGAHAN A.M., BOGERS M.L.A.M., CHESBROUGH H., HOLGERSSON M. (2021), "Tackling Societal Challenges with Open Innovation", *California Management Review*, vol. 63, n. 2, pp. 49-61.
- MUÑOZ P., GAMBLE E.N., BEER H. (2022), "Impact measurement in an emerging social sector: Four novel approaches", *Academy of Management Discoveries*, vol. 8, n. 2, pp. 298-330.
- PATTON M.Q. (1990), *Qualitative evaluation and research methods*. SAGE Publications, inc.
- SEELOS C., MAIR J., TRAEGER C. (2023), "The future of grand challenges research: Retiring a hopeful concept and endorsing research principles", *International Journal of Management Reviews*, vol. 25, n. 2, pp. 251-269.
- SPITHOVEN A., VANHAVERBEKE W., ROIJAKKERS N. (2013), "Open innovation practices in SMEs and large enterprises", *Small business economics*, vol. 41, pp. 537-562.
- TANI M., TROISE C., DE BERNARDI P., HAN T. (2022), "Innovating the supply chain in health-related crises: Some evidence from ISINNOVA case", *European Journal of Innovation Management*, vol. 25, n. 6, pp. 716-734.

- THOMPSON C.J., LOCANDER W.B., POLLIO H.R. (1989), "Putting consumer experience back into consumer research: The philosophy and method of existential-phenomenology", *Journal of consumer research*, vol. 16, n. 2, pp. 133-146
- VANHAVERBEKE W., FRATTINI F., ROIJAKKERS N., USMAN M. (EDS.), (2018), "Researching open innovation in SMEs", World Scientific.
- VESCI M., FEOLA R., PARENTE R., RADJOU N. (2021), "How to save the world during a pandemic event. A case study of frugal innovation", *R&D Management*, vol. 51, n. 4, pp. 352-363.
- VON HIPPEL E. (1986), "Lead Users: A Source of Novel Product Concepts", *Management Science*, vol. 32, n. 7, pp. 791-805.

Track 8
Retailing & Service Management

The effect of entrepreneurial and customer orientations on shopper loyalty: an explorative study on small independent retailers

ALICE MANTOVANI¹ LARA PENCO² SANDRO CASTALDO³

Abstract

Small independent retailers play a pivotal role in the Italian economy, and in recent years they have had to compete with larger firms. This study aims to delve into these dynamics, investigating how independent small retailers manage to survive the larger giants. To this end, 15 in-depth interviews were conducted on small independent retailers operating in five Italian large cities. Authors investigated the role of Entrepreneurial Orientation (EO), Customer Orientation (CO), Shopper Loyalty and their social role in city centers and neighborhoods. The value of this manuscript lies in its exploration of the relationships emerged among constructs and highlights their influence on competitiveness, adding a valuable perspective to previous literature. From the study, it emerged that retailers are searching for new solutions to compete and to better satisfy their customers. This is possible due to high levels of EO serving as a stimulus for sustained strategic and marketing responses.

Keywords: *Small retailers, SME, entrepreneurial orientation, business model innovation, external competition, innovativeness and proactiveness.*

Framing of the research. *Small and medium-sized enterprises (SMEs) are instrumental in shaping the economic landscape of Europe, making significant contributions to job creation, wealth generation, innovation, and overall economic progress. In Italy, independent small retail businesses not only play a pivotal role in job creation and value addition but also have a positive impact on local economies and social cohesion in urban centers. Nevertheless, the ongoing crisis faced by small retailers, fueled by external competition from large shopping malls and e-commerce, presents a palpable threat to the social fabric of cities. The potential closure of these local businesses, acting as vital community hubs, could elicit feelings of decline and insecurity among citizens.*

Indeed, as highlighted by McDonald and Swinney (2019), small independent retailing firms play a crucial role, especially when fulfilling social functions. The recent pandemic has emphasized the importance of small local stores in providing social services to residents, including personalized services and home delivery. The proximity of these small stores to residents brings added value to a diverse range of consumers, particularly benefiting those facing disadvantages, such as the elderly and low-income families. Furthermore, small independent retail stores act as focal points for social interaction, as noted by Clarke and Banga (2010). Gilboa et al. (2019) argue that the social relationships and personalized attention offered by small shops are integral components of the customer experience.

The relational aspects inherent in small independent retailing firms confer competitive advantages (Pantano and Migliarese, 2014). Viewed in a broader context, the competitive pressures exerted by external malls and e-commerce pose a threat not only to the city center retailing system but also to the vitality of the neighborhood. Barata-Salgueiro (2021) posits that the presence of scattered small independent retailing firms in cities serves as a defense against desertification and insecurity. Additionally, it contributes to the appreciation of community identity (Runyan et al., 2007). In this study, we delve into four crucial dimensions concerning small businesses: specifically, we explore the role of Entrepreneurial Orientation (EO) in not only fostering Strategic Orientation (SO) and customer orientation (CO) but also in shaping their social impact within neighborhoods and city centers. EO, defined as the entrepreneur's inclination to cultivate market opportunities through continuous innovation, a proactive stance, and a willingness to take risks in pursuing new opportunities (Lumpkin & Dess, 1996; Covin & Slevin, 1989), serves as a focal point of our analysis. Griffin et al. (2006) discovered that EO in the retailing sector positively influences the development of knowledge resources

¹ e-mail: alice2500.mantovani@gmail.com

² University of Genova
e-mail: lara.penco@economia.unige.it

³ University Bocconi - Milano
e-mail: sandro.castaldo@sdabocconi.it

geared towards constructing a competitive advantage. Grewal and Levy (2017) argued that EO contributes to enhancing competitiveness in retailing. Luiz dos Santos and Vieira Marinho (2018) delved into the correlation between EO in supermarket retailers and their Strategic Orientation, validating a positive relationship. In Addition, considering that small retailers are likely to implement strategies based on their specific role for customers and the local community, other approaches may be applied to analyze strategic paths related to the external environment.

The strategic orientation framework includes the characteristics of the Strategic Orientation towards customers, competitors, and other external forces and helps to understand how firms respond differently to the evolution of the competitive environment (Ferraresi et al., 2012). Miles & Snow (1978) define a classification of different typologies of strategic postures that lead to different Strategic Orientations (SO). This classification is especially useful for small and entrepreneurial businesses (Rugman & Verbeke, 1988). It categorizes firms into four types: prospectors, analyzers, defenders, and reactors (Anwar & Hasnu, 2017). Moreover, prioritizing Customer Orientation (CO) stands as a pivotal marketing strategy that enables companies to generate value for customers by comprehending their stated desires and needs (Narver and Slater, 1994). Within the retail sector, fulfilling customers' needs emerges as a crucial determinant of success, enhancing the company's overall performance and competitive standing (Tajeddini et al., 2013). It's crucial to underscore that the development of CO should adopt a forward-looking approach, anticipating the future needs and desires of customers. In this context, successful businesses need an elevated level of Entrepreneurial Orientation (EO). This encompasses elements such as social relationships, social affiliation, reciprocity, and a sense of community attachment. This connection is closely related to the themes of sustainability and social responsibility among small retailers, especially when these businesses serve societal functions (McDonald and Swinney, 2019). Consequently, the bond between customer support and the dedication of small retailers to their neighborhood and local community is robust.

Purpose of the paper. The purpose of this study is to investigate how small independent retailers manage to survive the larger giants and e-commerce. Beginning with an overview of profiles associated with small retailers, focusing on literature concerning small consumer services and retailing, our empirical research delves into the influence of Entrepreneurial Orientation (EO) on vital strategic elements for small independent retailing. These elements include Strategic Orientation (SO), and customer orientation (CO) - encompassing aspects like shopper loyalty, and sustainability. We consider that these research streams (Runyan and Droge, 2008) may help to understand the source of competitive advantage of small independent retailing firms. Based on these premises, our research questions are:

RQ1: What are the main features of the orientations adopted in small retailing?

RQ2: What are the entrepreneurial factors that help small shops to challenge the big player/e-commerce competition?

To address our research questions, we are conducting a comprehensive multiple-case study focused on small independent retailing firms. The deliberate choice of these firms stems from the widespread recognition of small retailing as a crucial economic activity. Small firms, often led by entrepreneurs and founders, frequently from the same family, exhibit a distinct leadership style that significantly shapes their approach to innovation and market dynamics (Penco et al., 2022). The main goal of this in-depth investigation is to analyze the dynamics and evolving strategies of small independent retailers. Our examination delves into their strategic orientations and underscores the pivotal role they play in establishing and sustaining customer relationships. The study seeks to assess how Entrepreneurial Orientation (EO) can strategically cultivate robust customer relationships while upholding quality and tradition. Employing a multiple case study approach, the research follows methodologies outlined by Cunningham (1997), Eisenhardt & Graebner (2007), Eisenhardt (1989), Pratt (2009), and Yin (1994). Additionally, the study aims to contribute to and deepen existing literature on EO, Strategic Orientation (SO), Customer Orientation (CO), shopper loyalty, and sustainability through concrete case studies (Eisenhardt, 1989; Eisenhardt & Graebner, 2007). The chosen approach, aligning with Eisenhardt's (1989) framework, allows for the integration of various constructs, establishing meaningful connections between them (Gehman et al., 2018).

Methodology. The research employs a qualitative approach, utilizing semi-structured in-depth interviews consisting of 26 questions. We engaged in these interviews with the owners or managers of 15 companies operating in diverse sectors, such as clothing and accessories, restaurants, home and furniture, and entertainment. The decision to focus on these specific businesses is driven by their significant impact on the Italian economy. The selected companies meet specific criteria: they are located in five major Italian cities, are classified as SMEs based on turnover and number of employees, and are recognized as small, reputable, and benchmark retailers within their local communities. Notably, all but one of the cases examined were family businesses, with entrepreneurs assuming leadership roles. The semi-structured interviews were conducted between March 2023 and April 2023. We scheduled appointments via email and phone calls with interested enterprises identified during a pre-screening phase. The actual representatives interviewed included entrepreneurs, family members involved in enterprise governance, or top managers (in one case only). Brief profiles of the interviewees and main characteristics are summarized in Table 1.

Table 1- Respondent profiles and interview characteristics

No./interview code	Company Type	Interview period	Interviewees role	City
H01	Patisserie/Bakery	23/03/2023	Family member	Roma
H02	Bookstore	23/03/2023	Business owner	Roma
H03	Gadgets	03/04/2023	Business owner	Roma
H04	Coffee shop and gourmet products	30/03/2023	Management Assistant	Venezia
H05	Design	30/03/2023	Business owner	Venezia
H06	Jewelry	30/03/2023	Business owner	Venezia
H07	Accessories	22/03/2023	Business owner	Napoli
H08	Optician	06/04/2023	Business owner	Napoli
H09	Pizzeria	22/03/2023	Business owner	Napoli
H10	Jewelry	12/04/2023	Business owner	Milano
H11	Hardware	12/04/2023	Business owner	Milano
H12	Clothing	07/04/2023	Business owner	Milano
H13	Patisserie	21/04/2023	Business owner	Milano
H14	Restaurant	07/03/2023	Business owner	Firenze
H15	Gastronomy and restaurant	11/04/2023	Business owner	Firenze

Source: Authors' elaboration

The interviews were audio-recorded, transcribed, and translated from Italian to English. The open coding practice was performed. This method is suitable for the study of complex phenomena through the coding of labels, concepts, and words (Penco et al. 2022). Interviews were codified through textual analysis. They were independently codified by each author and were discussed together to reduce subjectivity in interpretation of the data. Each construct (entrepreneurial orientation, Strategic Orientation, consumer orientation, shopper loyalty, and sustainability) was then evaluated. The purpose of the evaluation phase was to identify the level of engagement with respect to the analyzed factor. Thus, it was possible to distinguish retailers in which the orientation/construct was absent or very weak, from situations where construct/factors were ready to be adopted/implemented. Additionally, the analysis revealed firms that show great involvement in the analyzed orientations/constructs.

Results. The analysis highlights that the key to success lies in the quality of products and services, fostering customer loyalty. The connection between quality, customer satisfaction, and store loyalty has long been a subject of debate in small retailers' literature. Examining the business model of the studied small retailers reveals a prominent emphasis on tradition, despite the industry's general pursuit of innovation. This aligns with findings from prior studies (Cuesta-Valino et al., 2022) that establish a link between tradition and retailers' success. Our analysis affirms how tradition influences the emotional atmosphere within the point of sale (Morhart et al., 2016). Interestingly, while tradition remains pivotal, many small retailers, especially those established more recently, are actively working to incorporate innovative elements into their business models. Expanding the analysis to the retailing mix, key factors include positioning/image, assortment, merchandising, and store ambiance. These aspects prove crucial for businesses, allowing them to showcase their uniqueness and stand out against larger competitors. For the topic of branded products/merchandising, interviews suggest that merchandising doesn't exert a direct strategic impact on the performance of small retailers. However, the results enable the identification of connections between different constructs (EO, SO, CO, shopper loyalty, and sustainability) and their influence on competitiveness (Kajalo & Lindblom, 2015).

In particular, the overall average Entrepreneurial Orientation (EO) propensity is notably strong, particularly in the dimensions of innovativeness and proactiveness. Risk-taking propensity, although inherent in entrepreneurial activities, tends to rate lower than the other two dimensions in all samples. The study indicates that innovativeness and proactiveness are prominent entrepreneurial characteristics, with risk-taking playing a facilitating role, sometimes indirectly, and consequently influencing the preceding constructs. Therefore, the analysis suggests that higher propensities toward innovativeness and proactivity correspond to higher EO levels (Anwar & Hasnu, 2017). Conversely, lower propensities toward innovativeness result in lower EO levels, except in terms of digitalization and the use of social media for business communication.

Moreover, in the analysis of the Strategic Orientation (SO) construct, the study reveals a common trend among small distributors to adopt a defined SO across three distinct dimensions: Analyze, Defend, and Prospect, with the React dimension appearing less actively pursued. Examining SO further unveils a connection with different orientations of Entrepreneurial Orientation (EO). Specifically, entrepreneurs emphasizing innovativeness and proactivity demonstrate a prospective SO. An analytical SO primarily revolves around proactivity, where surveyed independent small retailers

analyze the market to introduce adaptable products in response to shifting demands. Conversely, lower levels of innovativeness align with a reactive SO, where retailers aim to maintain product stability without significant alterations.

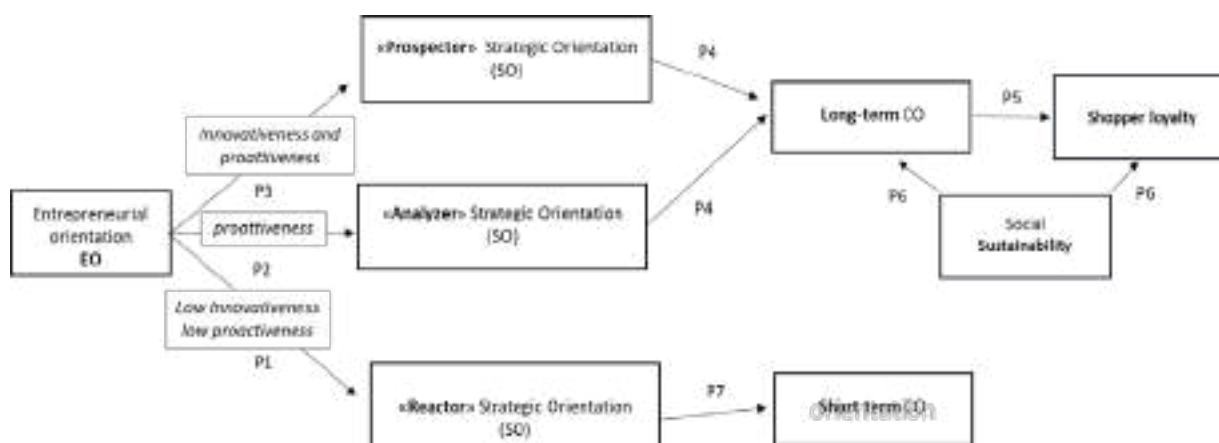
In addition, our research shows that the customer orientation of small retailers is a basic element to constitutes a competitive advantage with which they can diversify against larger competitors. All retailers in the sample report a high relevance of the customer relationship, especially through the offer of highly personalized services, capable of generating high customer satisfaction. The analysis shows how retailers can bring their business to long-term profitability through their attention to the customer by creating quality products and services (Deshpandé et al., 1993). However, Customer Orientation (CO) truly becomes significant in the long term only when influenced by high levels of Entrepreneurial Orientation (EO) and Strategic Orientation (SO). To gain a comprehensive understanding of the success and effectiveness of customer orientation (CO), it is essential to closely link CO with the embedded innovativeness and proactiveness within the organizational culture of retailers, as emphasized by Deshpande et al. (1993). This implies that organizations cultivating a corporate culture inclined toward innovation and proactivity, indicative of a high Entrepreneurial Orientation (EO), are more likely to exhibit outstanding customer attention, as also indicated by Tajeddini et al. (2010). The research also reveals a very relevant role of shopper loyalty. In particular, each activity is oriented towards the customer experience, considered as the total of the subjective judgments derived from the satisfaction obtained by the customer during the shopping phase and on which the choice of the shop is based (Paul et al., 2016). Additionally, the study reveals that salespeople in small shops are highly motivated to cultivate relationships with their customers, resulting in a positive correlation between shop attachment and shopper loyalty (Badrinarayanan & Becerra, 2019). Thus, the conducted analysis establishes a clear relationship between consumer orientation and shopper loyalty.

Finally, from our study, it emerges that the relationship with the society and community in which the small retailers are established is a determining factor for their image and reputation, even if it is not yet a fully developed factor. Many studies agree with this perspective; physical stores need to put more emphasis on "soft values" (Ekstrom & Jonsson, 2022). This research also shows that small shops are still very important in quarters, especially if they provide functions for society.

In summary, when Entrepreneurial Orientation (EO) is high, Strategic Orientation (SO) tends to be either Prospector or Analyzer. Both types of orientations, Prospector and Analyzer, prioritize investing in Customer Orientation (CO) with a long-term perspective to anticipate future customer needs and desires. This finding supports existing literature indicating that a strong EO, particularly in terms of innovativeness and proactiveness, encourages businesses to explore the gap between current and future market needs (Smith and Jambulingam, 2018). The study also highlights that a long-term CO positively influences shopper loyalty. Moreover, social sustainability emerges as a dual factor: it not only enhances CO by aligning businesses with social and ethical values, appealing to socially conscious consumers but also stimulates shopper loyalty by emphasizing the social role of small retailing in the local community.

- P1: Small retailers with a low level of innovativeness and proactiveness are likely to be defined with a Reactor for SO.
P2: Small retailers with EO based on proactiveness are likely to adopt an Analyzer SO.
P3: Small retailers with EO based on innovativeness and proactiveness are likely to adopt a Prospector SO.
P4: Small retailers with high EO that are analyzers and prospector are likely to adopt more quickly to market needs and construct a long-term CO.
P5: Consumer orientation impact on shopper loyalty
P6: Social Sustainability influences shopper loyalty and customer orientation
P7: Small retailers with low EO that are reactor are likely to adopt more slowly to market needs and construct a short-term CO.

Figure 2: summary of results



Source: Authors' elaboration

Research limitations: This study considers a limited sample size, counting only 15 small independents. Secondly, the study was cross-sectional, and it would be beneficial to conduct a longitudinal study to extract trends and strategic evolutions over time. Additionally, the study included a limited number of variables, and an analysis of other aspects such as the entrepreneur's personal traits and cultural background is crucial to better understand the antecedents of the strategic and entrepreneurial attitude.

Managerial Implications: These findings carry noteworthy implications for both practitioners and researchers. Firstly, our study contributes to the literature on small consumer services and retailing entrepreneurs, providing valuable insights into the application of strategic tools for creating customer value and ensuring the long-term survival of small independent retailing firms. Secondly, it extends the scope of entrepreneurship and marketing literature by offering a model that explains strategic behaviors and identifies the factors contributing to the success of entrepreneurs in small independent retailing. Few studies have applied Entrepreneurial Orientation (EO) to interpret strategic behaviors in small retailing, and this research fills a crucial gap by highlighting the significant role of EO in shaping the strategic and marketing responses of small retailing businesses. Importantly, our analysis underscores that EO plays a pivotal role in adopting a prospector orientation. The centrality of EO, particularly in fostering innovativeness, proves essential for the competitive resilience of small independent retailing firms against larger counterparts. Therefore, actively nurturing EO and aligning human resource management with this entrepreneurial mindset is imperative. Establishing clear communication channels regarding the strategic importance of EO is vital for steering a trajectory marked by innovativeness, a proactive Strategic Orientation, and a strong emphasis on customer relationships. Taking a mid-level perspective, this study advocates for proactive investment from local policymakers to protect and strengthen small independent retailing businesses. Practical measures include initiatives to enhance the local environment, support for local projects like city branding, and a cautious approach to investments in large malls situated near local centers. Expanding the view to a broader, national level, the government and relevant ministries are encouraged to facilitate the efforts of small independent retailing entrepreneurs. This involves simplifying bureaucratic processes, introducing fiscal incentives that support local activities, and directing investments toward research programs and training courses. Establishing specialized agencies to identify and capitalize on significant opportunities for small retailers is a recommended strategy for promoting their sustained growth and competitiveness.

Originality of the paper: Analyzing the relationship between EO, SO, CO, shopper loyalty, and social sustainability in small independent retailers, with the aim also to understand how they can survive the competition with major stores, is relevant from a strategic perspective. We contribute to this topic by pointing out the crucial role of EO and pointing out that the investigated small retailers did not only focus their attention on the survival phase but also searched for new solutions to compete and to better satisfy their customers, creating a strong relationship focused on trust and loyalty.

References

- ANWAR J., HASNU S. (2017), "Strategic patterns and firm performance: comparing consistent, flexible and reactor strategies", *Journal of Organizational Change Management*, vol. 30, n. 7, pp. 1015-1029.
- BADRINARAYANAN V., BECERRA E.P. (2019), "Shoppers' attachment with retail stores: Antecedents and impact on patronage intentions", *Journal of Retailing and Consumer Services*, vol. 50, pp. 371-378.
- BARATA-SALGUEIRO T. (2021), "Shops with a history and public policy", *The International Review of Retail, Distribution and Consumer Research*, vol. 31, n. 4, pp. 393-410.
- BYUN S.E. HAN S., KIM H. CENTRALLO C. (2020), "US small retail businesses' perception of competition: Looking through a lens of fear, confidence, or cooperation", *Journal of Retailing and Consumer Services*, vol. 52.
- CLARKE I.S. BANGA. (2010), "The Economic and Social Role of Small Stores: A Review of UK Evidence", *The International Review of Retail, Distribution and Consumer Research*, vol. 20, n. 2, pp. 187-215.
- COCA-STEFANIAK J.A., PARKER C., REES P. (2010), "Localisation as a marketing strategy for small retailers", *International Journal of Retail & Distribution Management*, vol. 38, n. 9, pp. 677-697.
- COVIN J.G., SLEVIN D.P. (1989), "Strategic management of small firms in hostile and benign environments", *Strategic Management Journal*, vol. 10, n. 1, pp. 75-87.
- COVIN J.G., SLEVIN D.P. (1991), "A Conceptual Model of Entrepreneurship as Firm Behavior", *Entrepreneurship Theory and Practice*, vol. 16, n. 1, pp. 7-26.
- CUESTA VALINO P., RODRIGUEZ P.G., GARCIA HENCHE B. (2022), "Word of mouth and digitalization in small retailers: tradition, authenticity and change", *Tecnological forecasting and social change*, vol. 175, 121382.
- DAS G. (2014), "Linkages of retailer awareness, retailer association, retailer perceived quality and retailer loyalty with purchase intention: A study of Indian food retail brands", *Journal of Retailing and Consumer services*, vol. 21, n. 3, pp. 284-292.
- DESHPANDÉ R., FARLEY J.U., WEBSTER F. (1993), "Corporate culture, customer orientation, and innovativeness in Japanese firms: a quadrad analysis", *Journal of marketing*, vol. 57, n. 1, pp. 23-37.
- DOS SANTOS I.L., MARINHO S.V. (2018), "Relationship between entrepreneurial orientation, marketing capability and business performance in retail supermarkets in Santa Catarina (Brazil)", *Innovation & Management Review*, vol. 15, n. 2, pp. 118-136.
- EKSTRÖM K.M., JÖNSSON H. (2022), "Orchestrating retail in small cities", *Journal of Retailing and Consumer Services*, vol. 68, 103008.
- FERRARESI A.A., QUANDT C.O., DOS SANTOS S.A., FREJA J.R. (2012), "Knowledge management and strategic orientation: leveraging innovativeness and performance", *Journal of knowledge management*, vol. 16, n. 5, pp. 688-701.

- FOSTER J., MCLELLAND M.A. (2015), "Retail atmospherics: The impact of a brand dictated theme", *Journal of Retailing and consumer services*, vol. 22, pp. 195-205.
- GEHMAN J., GLASER V.L., EISENHARDT K.M., GIOIA D., LANGLEY A., CORLEY K.G. (2018), "Finding theory–method fit: A comparison of three qualitative approaches to theory building", *Journal of Management Inquiry*, vol. 27, n. 3, pp. 284-300.
- GHEZZI A., CAVALLA A. (2020), "Agile business model innovation in digital entrepreneurship: Lean startup approaches", *Journal of business research*, vol. 110, pp. 519-537.
- GILBOA S., SEGER-GUTTMANN T., MIMRAN O. (2019), "The unique role of relationship marketing in small businesses' customer experience", *Journal of Retailing and Consumer Services*, vol. 51, pp. 152-164.
- GREWAL D., LEVY M. (2007), "Retailing research: Past, present, and future", *Journal of retailing*, vol. 83, n. 4, pp. 447-464.
- GRIFFITH D.A., NOBLE S.M., CHEN Q. (2006), "The performance implications of entrepreneurial proclivity: A dynamic capabilities approach", *Journal of Retailing*, vol. 82, n. 1, pp. 51-62.
- GRIMMER L., MILES M.P., BYROM J., GRIMMER M. (2017), "The impact of resources and strategic orientation on small retail firm performance", *Journal of Small Business Management*, vol. 55, pp. 7-26.
- GRÖNROOS C. (1982), "An applied service marketing theory", *European journal of marketing*, vol. 16, n. 7, pp. 30-41.
- JAMAL A. (2005), "Playing to win: an explorative study of marketing strategies of small ethnic retail entrepreneurs in the UK", *Journal of Retailing and Consumer Services*, vol. 12, n. 1, pp. 1-13.
- KAJALO SAMI, ARTO LINDBLOM (2015), "Market orientation, entrepreneurial orientation and business performance among small retailers", *International Journal of Retail & Distribution Management*, vol. 43, n. 7, pp. 580-596.
- KARA A., SPILLAN J.E., DESHIELDS JR O.W. (2005), "The effect of a market orientation on business performance: a study of small-sized service retailers using MARKOR scale", *Journal of small business management*, vol. 43, n. 2, pp. 105-118.
- KATAKAM B.S., BHUKYA R., BELLAMKONDA R.S., SAMALA N. (2021), "Longitudinal analysis versus cross-sectional analysis in assessing the factors influencing shoppers' impulse purchase behavior–Do the store ambiance and salesperson interactions really matter?", *Journal of Retailing and Consumer Services*, vol. 61, 102586.
- KIM C., MIAO M., HU B. (2020), "Relations between merchandising information orientation, strategic integration and retail performance", *International Journal of Retail & Distribution Management*, vol. 50 n. 1, pp. 18-35.
- KOELLINGER P. (2008), "Why are some entrepreneurs more innovative than others?", *Small Business Economics*, vol. 31, n. 1, pp. 21-37.
- LUMPKIN G.T., DESS G.G. (1996), "Clarifying and EO construct and linking it to performance", *Academy of Management Review*, vol. 21, n. 1, pp. 135-172.
- MARINO L.D., LOHRKE F.T., HILL J.S., WEAVER K.M., TAMBUNAN T. (2008), "Environmental shocks and SME alliance formation intentions in an emerging economy: Evidence from the Asian financial crisis in Indonesia", *Entrepreneurship Theory and Practice*, vol. 32, n. 1, pp. 157-183.
- MCDONALD R., SWINNEY P. (2019), "City centres: Past, present and future", *Their Evolving Role in the National Economy*. Centre for Cities, London.
- MEGICKS P., WARNABY G. (2008), "Market orientation and performance in small independent retailers in the UK", *The International Review of Retail, Distribution and Consumer Research*, vol. 18, n. 1, pp. 105-119.
- MILLER D., FRIESEN P.H. (1978), "Archetypes of strategy formulation", *Management Science*, vol. 24, n. 9, pp. 921-933.
- MOORE M. (2005), "Towards a confirmatory model of retail strategy types: an empirical test of Miles and Snow", *Journal of Business Research*, vol. 58, n. 5, pp. 696-704.
- MOULARD J.G., RAGGIO R., FOLSE J.A.G. (2021), "Disentangling the meaning of brand authenticity the entity - referent correspondence framework of authenticity", *Journal of the Academy of marketing science*, vol. 49, pp. 96-118.
- O'REGAN N., GHOBADIAN A. (2005), "Innovation in SMEs: the impact of strategic orientation and environmental perceptions", *International Journal of Productivity and Performance Management*, vol. 54, n. 2, pp. 81-97.
- PANTANO E., MIGLIARESE P. (2014), "Exploiting consumer–employee–retailer interactions in technology-enriched retail environments through a relational lens", *Journal of Retailing and Consumer Services*, vol. 21, n. 6, pp. 958-965.
- PAUL J., SANKARANARAYANAN K. (2016), "Consumer satisfaction in retail stores: Theory and implications", *International Journal of Consumer Studies*, vol. 40, n. 6 pp. 635-642.
- PENCO L., PROFUMO G., SERRAVALLE F., VIASSONE M. (2022), "Has COVID-19 pushed digitalization in SMEs? The role of entrepreneurial orientation", *Journal of Small Business and Enterprise Development*, (ahead-of-print).
- PENCO L., TORRE T., SCARSI R. (2019), "Does strategic orientation influence strategy formulation and organisational design in Italian food medium-sized enterprises? The role of the family", *British Food Journal*, vol. 122, n. 5, pp. 1397-1419.
- QIU P. ET AL., (2023), "The influence of social capital on local retail patronage in an urban setting", *International Journal of Consumer Studies*, vol. 47, n. 4, pp. 1467-1482.
- RENKO S., DRUZJANIC M. (2014), "Perceived usefulness of innovative technology in retailing: consumers and retailers point of view", *Journal of retailing and customer services*, vol. 21, n. 5, pp. 836-843.
- RUGMAN A.M., VERBEKE A. (1988), "Does Competitive Strategy Work for Small Business?", *Journal of Small Business & Entrepreneurship*, vol. 5, n. 3, pp. 45-50.
- RUNYAN R. C., DROGE C. (2007), "A categorization of small retailer research streams: what does it portend for future research?", *Journal of Retailing*, vol. 84, n. 1, pp. 77-94.
- RUTH D., GUNN F., ELMS. (2021), "Being a retailer: narratives not on display". *International Journal of Retail & Distribution Management*, vol. 50, n. 5, pp. 581-598.
- SAEBI T., LIEN L., FOSS N.J. (2017), "What drives business model adaptation? The impact of opportunities, threats and strategic orientation", *Long Range Planning*, vol. 50, n. 5, pp. 567-581.
- SELLAPPAN P., SHANMUGAM K. (2009), "Delineating entrepreneurial orientation efficacy on retailer's business performance", *Management Decision*, vol. 59 n. 4, pp. 858-876.
- SHANE S. (2000), "Prior knowledge and the discovery of entrepreneurial opportunities", *Organ. Sci.*, vol. 11, pp. 448-469.
- SLATER S.F., NARVER J.C. (1994), "Does the competitive environment moderate the market orientation-performance relationship?", *Journal of Marketing*, vol. 58, n. 1, pp. 46-55.

- SMITH B., JAMBULINGAM T. (2018), "Entrepreneurial orientation: Its importance and performance as a driver of customer orientation and company effectiveness among retail pharmacies", *International Journal of Pharmaceutical and Healthcare Marketing*, vol. 12, n. 2, pp. 158-180.
- TAJEDDINI K., ELG U., TRUEMAN M. (2013), "Efficiency and effectiveness of small retailers: The role of customer and entrepreneurial orientation", *Journal of Retailing and Consumer Services*, vol. 20, n. 5, pp. 453-462.
- TOPOROWSKI W., LADEMANN R. (2014), "The Importance of Assortment, Pricing, and Retail Site Location for Competition in Food Retailing – Results from Marketing Research", *Marketing: ZFP – Journal of Research and Management*, vol. 36, n. 2, pp. 131-140.
- WALES W., GUPTA V.K., MARINO L., SHIROKOVA G. (2019), "EO: International, global and cross-cultural research", *International Small Business Journal*, vol. 37, n. 2, pp. 95-104.
- WIKLUND J., SHEPHERD D. (2005), "Entrepreneurial Orientation and Small Business Performance: A Configurational Approach", *Journal of Business Venturing*, vol. 20, n. 1, pp. 71-91.
- WI-SUK K., HONGJOO W., AMRUT S., XIAO H. (2021), "External pressure or internal culture? An innovation diffusion theory account of small retail businesses' social media use", *Journal of Retail and Consumer Services* vol. 62, 102616.
- YILDIZ H., HEITZ-SPAHN S., BELAUD L. (2017), "Explaining small-retailer patronage through social capital theory", *International Journal of Retail & Distribution Management*, vol. 45, n. 6, pp.641-659.
- ZAHRA S.A. (1991), "Predictors and financial outcomes of corporate entrepreneurship: An exploratory study", *Journal of Business Venturing*, vol. 6, n. 4, pp. 259-285,

Websites

<https://www.ilsole24ore.com/art/qualita-e-vendite-online-cosi-piccoli-negozi-conquistano-under-25-e-over-60-AEh5nUPD>
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<https://www.confcommercio.it/-/shopping-piccoli-negozi-studio-bocconi-american-express>
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<https://www.largoconsumo.info/-/il-40-degli-italiani-acquista-almeno-una-volta-a-settimana-nei-piccoli-negozi>
<https://amp24.ilsole24ore.com/pagina/AFB3lXqB>

Ensuring customer satisfaction and loyalty of online health and well-being: a comparison study across types of services

GIADA SALVIETTI¹ SILVIA RANFAGNI² DANIO BERTI³

Abstract

Online offering of services for health, wellness and well-being has rapidly increased in latest years, leading to a variety of services of different nature being offered and communicated across multiple touchpoints. Such complexity is reflected in a multitude of studies addressing customer satisfaction and customer loyalty by focusing on specific online service delivery contexts. Drawing from literature on e-service quality, online health service provision, and healthcare and well-being professionals as service providers, our study aims to shed light on the role of various aspects affect customer satisfaction and customer loyalty across types of services offered. A model is proposed, combining both e-service offering-related elements and provider-related elements with variables accounting for touchpoints encountered during the customer's journey, to investigate the latter's effects on customers' evaluations of the service. Data were collected through an online survey of 1,220 Italian customers. Significant differences are found, across types of services, with reference to factors attributable to both elements, and to touchpoints at different stages of the journey.

Key words: online services; health; well-being; customer satisfaction; customer loyalty; touchpoints

Framing of the research. Online-based systems have increasingly populated the market for health and well-being services, thus transitioning from a traditional physician-based or provider-based delivery model. Such evolution, that has rapidly increased since the pandemic hit (Zhu et al., 2024), has brought customers many newfound advancements, such as the possibility to receive treatment and care at a distance (Dahl et al., 2019). Also, the availability of multiple platforms and touchpoints dedicated are allowing customers to take greater control of their care decisions prior to and during the service encounter (Labrecque et al., 2013). Various studies have therefore been developed, in latest years, addressing these online services' potential in influencing customers' behaviors and attitudes (e.g. electronic Word-of-Mouth and continued use of the abilitating technology - Yang et al., 2015; patients' relationship with and trust in their physician – Audrain-Pontevia and Menvielle, 2018). Current literature with this respect is of interdisciplinary nature, and has been developed within the fields of medical sciences, motor sciences, psychology, as well as marketing and management; and as such have addressed a wide range of services, from telemedicine to nutritional consultancy to physical wellbeing interventions. The present study intervenes in this literature by addressing the generation of customer satisfaction and loyalty by comparing a variety of online services that fall under the umbrella of “health and well-being services”.

Purpose of the paper. The present study investigates factors driving customer satisfaction and customer loyalty concerning digital services for health and well-being. On the one hand, the paper aims to weight various aspects concerning services provided online with those concerning the healthcare professional delivering the services. We pose, in fact, that both aspects must be accounted for at once when addressing health and well-being services. On the other hand, the paper aims to identify whether the various touchpoints that constitute customer journeys when purchasing health and well-being services online. The introduction of touchpoints as variables within the study is oriented at achieving a deeper understanding of how these contextual elements determine customer satisfaction by acting as signals throughout the journey. Moreover, it allows to differentiate between various contexts through which the service is delivered, each with a diverse degree of interaction and integration (e.g. from purely informational websites to mobile apps, from social media to video-call and communication interfaces).

Two research questions are formulated as follows:

- RQ1: Identify which elements related to e-service offering delivery and related to the provider have an effect on customer satisfaction and loyalty intentions, in the context of digital health and well-being services;

¹ University of Parma
e-mail: giada.salvietti@unipr.it

² University of Firenze
e-mail: silvia.ranfagni@unifi.it

³ University of Firenze
e-mail: danio.berti@unifi.it

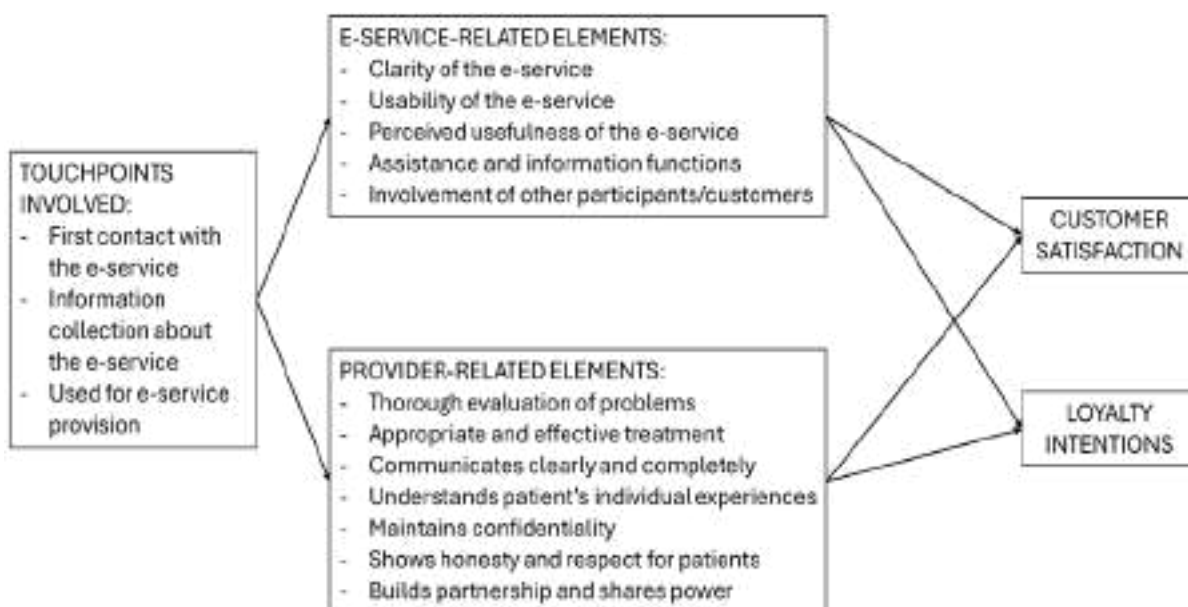
- RQ2: Shed light on the role of touchpoints in affecting customer evaluation of e-service offering-related elements and provider-related elements, as far as digital health and well-being services are concerned.

To achieve the study's goals, current literature on e-services quality, digital health and well-being services, customer satisfaction and customer loyalty has been reviewed, leading to the identification of a model to be tested.

The model is proposed as follows (see Figure 1):

- Touchpoints involved: three blocks of touchpoints were identified, to account for a) those through which the first contact with the service occurred; b) those used by the customer to gather information about the service; c) those through which the service has been provided.
Three lists of touchpoints have been identified on behalf of previous literature (e.g. Swan et al., 2018) as well as from practice. As what concerns first contact and information collection touchpoints, we ensured to include both provider-owned touchpoints and third-party touchpoints (either one-way or interactive) (Baxendale et al., 2015). Customers not only collect providers' own information, but also access other users' shared information about the service and the provider, which contribute to creating their expectations (Kitsios et al., 2019). Because of this, we expect that touchpoints encountered will have an effect on customers' actual evaluation on both the elements related to the e-service offering and those related to the provider.
- E-service offering-related elements: 5 aspects have been found as crucial in determining a response from customers, by comparing multiple studies on health and well-being services, especially those focusing on the online dimensions of service provision. Both the "clarity" and the "assistance and information functions" elements concerned the service delivering reliable, trustworthy, understandable information and/or allowing customers to receive assistance in case of doubts or misunderstanding (Chang et al., 2015). The "usability / ease-of-use" element referred to the user experience the customer has while navigating the online touchpoint through which the service is delivered (Gummerus et al., 2004). The contribution to the service by other participants was introduced to assess all those contexts and situations where multiple customers at once contribute to the service experience under evaluation, such as group classes or therapy sessions (Brouzos et al., 2021). Finally, perceived usefulness of the service was adopted to measure the structural and design-oriented dimension of the service (Kitsios et al., 2019).
- Provider-related elements: similarly to e-service offering-related elements, 7 aspects concerning the provider delivering the health and well-being service have been identified. Interestingly, it emerged from current literature that aspects concerning healthcare professionals, psychologists and physicians do not greatly differ between studies developed in the online or offline sectors, thus stressing the importance of the human element in all service contexts. Following Leisen and Hyman (2004) and subsequent adaptations, the elements chosen - thorough evaluation of problems, appropriate and effective treatment, clear and complete communication, understanding of patient's individual experiences, confidentiality, honesty and respect for the patient, partnership building and power sharing – are able to cover both the benevolence and technical competence dimensions of patient-provider trust.

Figure 1 – Proposed model



Methodology. Data were gathered by means of an online survey conducted on a sample of 1,411 Italian consumers, between the months of March and May 2023. Given the sensitivity of some of the services investigated, we adopted a CAWI methodologies, with research assistants being available to help overcome any uncertainty or questions. Sampling was based on probabilistic methods, through stratified sampling (by age, gender and residence) on the list of e-panelists.

The questionnaire was composed of three sections. The first one, of a descriptive nature, was used to draw a comprehensive profile of participants and ensure the maximum representativeness of the sample. The second section addressed the search and selection process customers went through before purchasing the online service for health and well-being, including the main touchpoint through which they became aware of the service, the main touchpoint used to gather information about the service, and whether there had been previous experiences – either offline or online – with the service. Moreover, consumers were asked to disclose whether they reviewed the service publicly, privately, or they didn't share at all. The third and final section of the questionnaire involved evaluating their satisfaction over the service for health and well-being, both overall and in detail. 5 factors were used to investigate the delivery aspects of the online service (Brouzos et al., 2021; Chang et al., 2015; Kitsios et al., 2019), and 7 factors to assess aspects concerning the provider / professional delivering said service (adapted from Leisen and Hyman, 2004). Finally, a 3-item scale was used to assess loyalty intentions, measuring loyalty of behavioral nature (Murshed et al., 2023, adapted from Johnson et al., 2006). Reliability and validity of constructs and items was assessed through internal consistency and composite reliability (Nunnally, 1994) as well as factor loadings (Gerbing and Anderson, 1988).

Only consumers who purchased at least one online service for health and well-being in the last year were allowed to proceed in the survey (1,302). Those who purchased more than one of these services were asked to focus on the service they deemed as most relevant for them before answering further questions. Participants were provided with a list of 7 types of online services for health and well-being, that was created based on previous literature and cases from practice. The list was discussed and validated by researchers, also following a pre-test of the questionnaire conducted on 90 students. Following data cleaning based on completeness, attention checks and compilation time, 1,220 questionnaires were deemed valid and analyzed. The final sample included 42% men and 58% women. As for age, most participants were in the "18-29" age bracket (74%); the other participants were equally distributed in the "30-39", "40-49", "50-59" and "60-69" age ranges. The research did not distinguish by gender or age, but both variables were controlled for.

Data were analyzed through multiple linear Ordinary Least Squares (OLS) regression models. The method was chosen in line with previous studies on touchpoints, that employ regression and model touchpoints as dummy variables (e.g. Baxendale et al., 2015). Demographic variables of gender and age were used as controls when running the model, alongside other control variables that we hypothesized could influence customer satisfaction and/or customer loyalty: specifically, other analogous digital services being purchased, previous experiences with the service (online or offline), and customers still using the service at the time of survey completion. On the one hand, previous purchases can affect customers' response to any direct or indirect contact with the service itself or with its provider (McColl-Kennedy et al., 2015); on the other hand, customer satisfaction is expressed and measured as referred to a certain point in time along the process of service delivery (Danaher and Mattsson, 1994).

Results. The model was first tested on the entire sample (1,220), regardless of the type of service, to assess the impact of the three variables investigated on the two dependent variables, customer satisfaction and loyalty intentions.

Results will be presented starting from RQ1, which concerns the relationship between e-service-related elements, provider-related elements and customer satisfaction and loyalty intentions as dependent variables.

First of all, we confirm that overall e-service-related elements and provider-related elements have been found to have a positive impact on both customer satisfaction (respectively: $\beta = .629$, $p = 0.000$, and $\beta = .203$, $p = 0.000$) and loyalty intentions (respectively: $\beta = .726$, $p = 0.000$, and $\beta = .471$, $p = 0.000$). As what concerns each investigated aspect, we found that:

- clarity of the service, usability of the service, assistance and information functions, and perceived usefulness of the service are positively related to customer satisfaction.
- clarity of the service, perceived usefulness of the service, and the eventual involvement of other participants are positively related to loyalty intentions.
- providers' appropriate and effective treatment and confidentiality are positively related to customer satisfaction.
- provider's thorough evaluation of problems, appropriate and effective treatment, the understanding of the patient's individual experiences and the display of honesty and respect are positively related to loyalty intentions.

Table 1 provides the detail of these measures. To ensure readability of results, only significant values are shown.

Interestingly, control variables were not significant in affecting these relationships, with a single exception.

Overall, the number of digital services for health and well-being purchased in a year and whether there had been previous experiences with such services (either online or offline) does not affect neither customer satisfaction nor loyalty intentions. Whether the service was still being provided or not at the time of survey completion did not hold an effect on customer satisfaction, but it did on loyalty intentions; specifically, those who were still using the service when they answered the survey had more positive loyalty intentions than those who weren't ($\beta = .141$, $p = 0.006$).

Table 1 - Effects of e-service offering elements and provider elements on customer satisfaction and customer loyalty

Variables	Regression Beta Coefficients	Stand. Regr. Beta Coefficients	t-values	P > t
Customer Satisfaction				
SERVICE ELEMENTS				
Clarity	.120	.129	3.05	.002
Usability	.096	.105	1.67	.008
Assistance / inform. Functions	.070	.079	1.98	.048
Perceived usefulness	.159	.173	3.90	.000
PROVIDER ELEMENTS				
Appropriate and effective treatment	.166	.178	3.93	.000
Maintains confidentiality	.061	.075	2.01	.045
Loyalty Intentions				
SERVICE ELEMENTS				
Clarity	.116	.104	3.31	.001
Perceived usefulness	.193	.175	5.32	.000
Involvement of other participants	.085	.084	3.02	.003
PROVIDER ELEMENTS				
Thorough evaluation of problems	.125	.120	3.57	.000
Appropriate and effective treatment	.149	.134	3.98	.000
Understanding of patient's individual experiences	.108	.103	3.33	.001
Honesty and respect for the patient	.169	.142	4.41	.000

We subsequently decided to break down the model to each of the 7 types of online services for health and well-being investigated. In the previous analysis, a control dummy variable indicating the type of service participants responded for was barely significant ($p = 0.10$), which encouraged us to further investigate specificities across services. Answers obtained per each type of service were as follows:

- 56 about family well-being services (i.e. involving parents-children, couples, etc.);
- 541 about physical well-being services (e.g. nutrition, fitness, etc.);
- 146 about psycho-physical well-being services (e.g. yoga, pilates, etc.);
- 79 about mental well-being services (e.g. self-esteem improvement);
- 36 about social well-being services (e.g. feeling at ease with others);
- 171 about medical services – either general or specialist – provided by medical or paramedical staff;
- 191 about services for mental and psychological health (e.g. anxiety, panic attacks, anger management, etc.)

Due to the size of each sub-sample, we were able to run in-depth analyses about 5 out of 7 service types: physical well-being services; psycho-physical well-being services; mental well-being services; medical services – either general or specialist; and services for mental and psychological health.

Table 2 shows and compares the results obtain for each of the 5 service types; again, to improve the readability, only significant results are presented, with standardized beta coefficients. Besides differences specific to each service, a first remark concerns different variables contributing to customer satisfaction and loyalty intentions. A second remark concerns the scale of the digital services for health and well-being delivered: as the severity of the issues increases, from physical well-being to mental health, customer satisfaction is less driven by the e-services elements. Moreover, customers tend to focus on very specific aspects concerning the provider that is delivering the service at hand.

Table 2 – Effects of e-service offering elements and provider elements on customer satisfaction and customer loyalty across service types

Variables	Physical well-being	Psycho-physical well-being	Mental well-being	Medical services	Mental and psychological health
Customer Satisfaction					
SERVICE ELEMENTS					
Clarity	SIG. (.238)				
Usability					
Assistance / inform. Functions	SIG. (.189)	SIG. (.204)	SIG. (.525)		
Perceived usefulness					
Involvement of other participants					
PROVIDER ELEMENTS					
Thorough evaluation of problems	SIG. (.160)		SIG. (.286)		SIG. (.354)
Appropriate and effective treatment			SIG. (.249)	SIG. (.202)	
Clear and complete communication					SIG. (.208)
Understanding of patient's individual experiences					
Maintains confidentiality					
Honesty and respect for the patient					
Builds partnership and shares power		SIG. (.262)			
Loyalty Intentions					
SERVICE ELEMENTS					
Clarity	SIG. (.131)	SIG. (.305)	SIG. (.242)		
Usability					SIG. (.204)
Assistance / inform. Functions			SIG. (.237)		
Perceived usefulness			SIG (.368)	SIG. (.367)	SIG. (.328)
Involvement of other participants	SIG. (.155)				
PROVIDER ELEMENTS					
Thorough evaluation of problems	SIG. (.116)				SIG. (.245)
Appropriate and effective treatment	SIG. (.161)	SIG. (.243)	SIG. (.216)		
Clear and complete communication					
Understanding of patient's individual experiences		SIG. (.162)		SIG. (.209)	
Maintains confidentiality	SIG. (.092)				
Honesty and respect for the patient	SIG. (.154)				SIG. (.168)
Builds partnership and shares power	SIG. (.145)		SIG. (.293)		SIG. (.219)

Moving to RQ2, the second goal for the study was to analyze the effects of touchpoints involved in the customer journey of digital services for health and well-being on customers' evaluation of e-service and provider. Again, the analysis has been performed on both the entire sample and by narrowing down the database to each investigated service type, in order to appreciate differences.

According to the main sample, neither first contact touchpoints nor information collection touchpoints were significant, meaning that – overall – they are not able to influence customers' evaluation of digital services for health and well-being and of their provider. Conversely, touchpoints used to provide the services had a significant impact: specifically, mobile apps, video calls and social media all had positive impact on how the provider was overall evaluated, and video calls and social media also enhanced evaluation of the e-service aspects. This suggests that touchpoints

allowing for swift contacts, direct interpersonal communication and availability significantly improve customers' perception of the service received.

By comparing the effect of touchpoints across service types, we found that:

- the effects of certain service provision touchpoints are confirmed for physical and psycho-physical service but not for mental well-being, medical services and mental and psychological health services. This finding appears consistent with those from RQ1, where the contextual elements revolving around service provision were less important or not significant at all for services addressing more "severe" issues. Also, no touchpoint has had a significant effect on customers' evaluation of these services, for neither of both aspects investigated, which reinforces such interpretation.

- as what concerns first contact touchpoint, negative effects of certain touchpoints on the evaluation of providers are found for psycho-physical services and mental health services. This finding implies that customers who, respectively, received advice from friends and family or came across the provider on social media, and/or encountered the provider's offline ads, also later evaluated him/her more negatively.

- as what concerns information collection touchpoints, a positive effect was found for active search on online blogs, journals and forums (for physical well-being services) on how the service aspects were evaluated. Also, a negative effect was found for watching video-reviews on the provider's evaluation, for mental well-being services.

Overall, findings have brought out that the touchpoints used to deliver information or to provide digital services for health and well-being may affect customers' evaluations of the aspects regarding the service itself or the provider who delivers it. Details per each service are provided in Table 3.

Table 3 – Effects of touchpoints on e-service offering elements and provider elements, across samples

	<i>First contact touchpoint</i>	<i>Information collection touchpoint</i>	<i>Service provision touchpoint</i>
Main sample	No effects	No effects.	Effects of: - mobile app on provider (.079) - video calls on service (.079) and provider (.101) - social media on service (.067) and provider (.093)
Physical well-being	No effects.	Effects of: - online blogs, journals, forums on service (.097)	Effects of: - mobile app on provider (-.181) - video calls on service (.135) and provider (.149) - social media on service (.105) and provider (.122)
Psycho-physical well-being	Effects of: - friends and family on provider (-.268) - social on provider (-.229)	No effects	Effect of: - video calls on provider (.229)
Mental well-being	Effect of: - offline ads on provider (-.313)	Effect of: - video reviews on provider (-.297)	No effects.
Medical services	No effects.	No effects.	No effects.
Mental and psychological health	No effects.	No effects.	No effects.

Research limitations. The main limitation concerns the cross-sectional design of the study, that does not provide enough confidence to claim a causal relationship between customers' evaluation of service-related elements, provider-related elements, customer satisfaction and customer loyalty. Future studies could employ longitudinal designs to improve such aspect, considering that these services usually require multiple sessions. This would be consistent with the control variable on ongoing services being significant for customer loyalty.

Concerning touchpoints, other two limitations can be found. First, touchpoints used for first contact and for information gathering were modeled as dummy variables indicating whether they were or were not the main source for customers. Extensions of the study focusing on this aspect might also ask customers for an evaluation of their experience with these touchpoints nor customers' personal preference for interacting with them. By asking to indicate the main touchpoint used, we assumed customers would use the touchpoint they were more at ease with. Future studies might also address this. Second, the study of touchpoints used for service provision might be further enriched by integrating the response speed and interaction frequency variables, since our findings pointed towards a greater appreciation of those touchpoints enabling live interactions.

Managerial implications. The study entails managerial implications by showing how different types of services vary in terms of aspects involving the offering and the provider significant for developing customer satisfaction and customer loyalty intentions. Even though findings have been provided for health and well-being digital services in general, it is clear from the division between services, that crucial aspects must be addressed accordingly. We therefore believe that, on the one hand, results will be useful to consider while designing and redesigning of these services, as well as to guide service recovery actions. Customers leaving and switching while the treatment is being provided, or not returning for future treatments, might in fact be gained back by designing actions oriented at building back trust based on critical aspects driving satisfaction. A final implication is tied to the role of touchpoints: insights on positive or negative effects of encountering certain touchpoints might be useful for providers to reconsider at least their own use of said touchpoints

and/or try to counteract the effects of third-party owned ones (such as providing reactions of responses to prior customers' reviews). As far as service provision touchpoints are concerned, findings point towards those touchpoints allowing a more meaningful dyadic interaction between customers and providers as those more positively effective on customers' evaluations and, indirectly, satisfaction. This is consistent with previous literature addressing responsiveness and patient satisfaction in health communities (Yang et al., 2015).

Originality of the paper. Many papers in extant literature have addressed the topic of health and well-being services by adopting a service quality perspective, rather than a customer satisfaction one. Although the two concepts may overlap (Dabholkar, 1995), there is a precise distinction that relies on the first being cognitive in nature and the latter being mostly an emotional response (Danaher and Mattsson, 1994). Also, most studies investigating digital health and well-being services have been doing so by focusing on a specific type of service provided (i.e. hospital-provided online care, individual or group online therapy sessions, etc). Of these, most focused on mobile health apps or professional websites.

The study, therefore, aimed to bring comparison between services of different nature that all contribute, in various ways, to customers' health and well-being. Moreover, the study is novel in terms of trying to identify the role of touchpoints constituting the customers' journey before and during the service delivery. Among these, the study included touchpoints new to these contexts, such as social media or communication / videocall platforms, whose use has significantly spread after the pandemic.

References

- AUDRAIN-PONTEVIA A.F., MENVIELLE L. (2018), "Effects of interpersonal trust among users of online health communities on patient trust in and satisfaction with their physician", *International Journal of Technology Assessment in Health Care*, vol. 34, n. 1, pp. 56-62.
- BAXENDALE S., MACDONALD E.K., WILSON H.N. (2015), "The impact of different touchpoints on brand consideration", *Journal of Retailing*, vol. 91, n. 2, pp. 235-253.
- BROUZOS A., VASSILOPOULOS S.P., STAVROU V., BAOURDA V.C., TASSI C., BROUZOU K.O. (2021), "Therapeutic factors and member satisfaction in an online group intervention during the COVID-19 pandemic", *Journal of Technology in Behavioral Science*, vol. 6, n. 4, pp. 609-619.
- CHANG M.Y., PANG C., TARN J.M., LIU T.S., YEN D.C. (2015), "Exploring user acceptance of an e-hospital service: An empirical study in Taiwan", *Computer Standards & Interfaces*, vol. 38, pp. 35-43.
- DABHOLKAR P.A. (1995), "The convergence of customer satisfaction and service quality evaluations with increasing customer patronage", *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, vol. 8, pp. 32-43.
- DAHL A.J., MILNE G.R., PELTIER J.W. (2021), "Digital health information seeking in an omni-channel environment: A shared decision-making and service-dominant logic perspective", *Journal of Business Research*, vol. 125, pp. 840-850.
- DANAHAR P.J., MATTSSON J. (1994), "Customer satisfaction during the service delivery process", *European Journal of Marketing*, vol. 28, n. 5, pp. 5-16.
- GERBING D.W., ANDERSON J.C. (1988), "An updated paradigm for scale development incorporating unidimensionality and its assessment", *Journal of Marketing Research*, vol. 25, 186.
- GU D., YANG X., LI X., JAIN H.K., LIANG C. (2018), Understanding the role of mobile internet-based health services on patient satisfaction and word-of-mouth. *International Journal of Environmental Research and Public Health*, vol. 15, n. 9, 1972.
- GUMMERUS J., LILJANDER V., PURA M., VAN RIEL A. (2004), "Customer loyalty to content-based Web sites: the case of an online health-care service", *Journal of Services Marketing*, vol. 18, n. 3, pp. 175-186.
- JOHNSON M.D., HERRMANN A., HUBER F. (2006), "The evolution of loyalty intentions", *Journal of Marketing*, vol. 70, n. 2, pp. 122-132.
- KITSIOS F., STEFANAKAKIS S., KAMARIOTOU M., DERMENTZOGLOU L. (2019), "E-service Evaluation: User satisfaction measurement and implications in health sector", *Computer Standards & Interfaces*, vol. 63, pp. 16-26.
- LADHARI R. (2010), "Developing e-service quality scales: A literature review", *Journal of Retailing and Consumer Services*, vol. 17, n. 6, pp. 464-477.
- LEISEN B., HYMAN M.R. (2004), "Antecedents and consequences of trust in a service provider: The case of primary care physicians", *Journal of Business Research*, vol. 57, n. 9, pp. 990-999.
- MCCOLL-KENNEDY J.R., GUSTAFSSON A., JAAKKOLA E., KLAUS P., RADNOR Z.J., PERKS H., FRIMAN M. (2015), "Fresh perspectives on customer experience", *Journal of Services Marketing*, vol. 29, n. 6/7, pp. 430-435.
- MURSHED F., DWIVEDI A., NAYEEM T. (2023), "Brand authenticity building effect of brand experience and downstream effects", *Journal of Product & Brand Management*, vol. 32, n. 7, pp. 1032-1045.
- NUNNALLY J.C. (1994), *Psychometric theory 3E*. Tata McGraw-Hill Education.
- SWAN E.L., DAHL A.J., PELTIER J.W. (2019), "Health-care marketing in an omni-channel environment: Exploring telemedicine and other digital touchpoints", *Journal of Research in Interactive Marketing*, vol. 13, n. 4, pp. 602-618.
- YANG H., GUO X., WU T. (2015), "Exploring the influence of the online physician service delivery process on patient satisfaction", *Decision Support Systems*, vol. 78, pp. 113-121.

Digital Transformation in the Italian Restaurant Industry: Navigating the Challenges and Opportunities of Food Delivery Services

ALBERTO SUSCO¹ DAVIDE CANAVESIO² MONICA CUGNO³

Abstract

The advent of food delivery services has significantly transformed the restaurant industry, presenting both challenges and opportunities for restaurant management. This paper analyzes the change in processes, including at the managerial level, that has occurred in restaurant management with the advent of food delivery (Chen et al, 2019), particularly focusing on those types of restaurants that use food delivery the most, such as chains or individual restaurants, operating in the Quick Service Restaurants sector. The Italian food delivery market is growing at a rapid pace and recently witnessed strategic acquisitions, in line with the global trend of digitalization of food industry. (Rizzica and Giorgiantonio, 2018) Restaurants face a drop in the number of dine-in clients, limitation in the dining area, and need to be more efficient in the market. Consequently, they are depending on third-party food delivery services to overcome these issues. One of the advantages as stated by Athira and Devakumar (2021), is that these platforms provide the option of limitlessly expanding dining areas, hence, allowing restaurants to generate larger profits. The article stresses the need for Italian restaurants to adapt to the digital transformation that is taking place in the industry. It implies that they should strive towards improving kitchen operations to handle both dine in and delivery orders efficiently. It also suggests adoption of digital marketing strategies for wider audience access. Further, the paper recommends reviewing the financial models that fail to account for the commissions charged by delivery platforms. The results reveal the difficulties that food delivery service systems pose in restaurant management but offer creative solutions to conventional issues and bring Italy's restaurant industry into the digital age.

Key words: food delivery; digital; management; qsr; food;

Framing of the research. *The basic assumptions in the restaurant industry have in recent years been altered, driven by the influence of food delivery services. This revolution has ushered in the new stage of restaurant management, which is a double-edged sword of evidence and rewards. The emergence of food delivery services in the traditional restaurant model has required the review of the core business, operational, and strategic frameworks especially in the fast food sector. This paper explores this evolution in detail with an emphasis on the Italian food delivery market, which is a microcosm of the global trend towards digitalization in food service.*

Food Delivery Services have played a key role in the sudden growth of movements within the Italian market in conjunction with the global trend toward digitization (Oncini et al, 2020). This change is not only a reflection of consumers' need for ease but also a proactive adjustment of the restaurants to the trend in the consumption of foods. The decrease in dine-in customer numbers (Ma et al, 2021), mostly because of low seating capacities and the need for higher market presence, has led to the use of third-party food delivery platforms by restaurants. These platforms stand to present some opportunities whereby a new income stream is created as well as the ability to reach a wider customer base without restrictions on physical location and seating capacity (Brar et al, 2021).

This paper, inspired by the findings of Chen et al. (2019) and the research of Rizzica and Giorgiantonio (2018), intends to identify the changes in the management processes of restaurants, happened due to the arrival of food delivery services. It is devoted to the QSR sector, and special circumstances and opportunities for both chains and independent restaurants in Italy. Through analyzing strategic responses of these restaurants like kitchen operation optimizations for dual service lines, digital marketing strategies adoption and financial models' adjustment to delivery platform commissions, this study helps to understand the need for Italian restaurants to adjust to a digital shift.

The results of this study are aimed at adding to the wider discussion of digital alteration of the restaurant business (Kobez et al, 2018), in which the innovative solutions that food delivery services provide to traditional problems are emphasized. The purpose of this is to give a broad perspective on the way these services are shaping the face of Italian restaurants in a digital time, following out from other, more international markets that are undergoing the same changes.

¹ University of Torino
e-mail: alberto.susco@unito.it

² University of Torino
e-mail: davide.canavesio@unito.it

³ University of Torino
e-mail: monica.cugno@unito.it

Purpose of the paper. The main aim of this study is to focus on the revolutionary impact that food delivery services (Recuero-Virto, Valilla-Arrospide, 2022) have had on restaurant operations. Under this new paradigm shift, which is quite a deviation from the old models that revolved around dine-in and takeaway services in the absence of courier services primarily, the assumptions are that suppliers are competing on a single price and customers are the ones deciding to buy (Sweeney et al, 2015). In making the business model central in the restaurant industry, particularly in the aftermath of the digital revolution, which has introduced food delivery as a major part of the business model, the aim of this study is to take apart the operational, strategic, and managerial transformations that have taken place in the restaurant industry. Of interest is the shift in restaurant operation models from those that did not allow for the entry of couriers and did not provide any special preparations for delivery, to one where the lines are designed explicitly for delivery purposes.

The knowledge of this progression is particularly important for a few reasons. First, it is a form of a global change in consumer behavior and preferences, which is found in a growing demand for convenience, speed, and diversity. In the second place, it presents the adaptive methods adopted by restaurants to deal with the challenges and opportunities of this innovation. Other strategies include reorganizing kitchen operations, changing menu items, and the utilization of digital technology to control orders and delivery logistics. It also addresses the economic and commercial implications of such changes, from the revenue streams and profit margins up to the market positioning and consumer contact. To sum up, it underlines the consequences of these changes.

The important of this study lies in the ability to provide a comprehensive analysis of the operational changes that have been observed in the restaurant industry. It also offers a glimpse of the strategic adjustments needed for survival in the digital era. This research aims to reveal the creative possibilities that the restaurants are taking up.

This is achieved through an analysis of the shift in traditional takeaway models to delivery-focused activities. In addition, it supports the educational and practical knowledge about how digitization is changing industry standards and demands. It also works as a compass for restaurant owners, managers and policy makers in how to maneuver through the labyrinth that is the food delivery sector.

Methodology. Using the given abstract and pertinent literature, a comprehensive mixed-methods research methodology can be developed for the analysis of restaurants with versus without food delivery services. This research is focused on the major changes in the restaurant business that were brought by food delivery services. This mixed-methodology will make use of both quantitative and qualitative methodologies to evaluate process changes, including at the managerial levels. Using this methodology, we are able to overcome the limitations of quantitative and qualitative methods through the employment of mixed methodologies, which in turn makes it easier for them to acquire comprehensive information that would otherwise be unreachable through the use of either method in isolation (Almeida, 2018). Although using different approaches makes research more time-consuming because there are two distinct types of data that need to be collected and analyzed independently (Creswell, Clark, 2017), we believe it is the best solution to provide accurate analysis of ongoing research.

In the Italian industry, this methodology will concentrate on Quick Service Restaurants (QSRs). A plan that is well-organized and built upon the objectives outlined in the abstract, supported by data from related studies, can be outlined as follows:

The design of this study is to scrutinize and contrast the changes in operation and management in quick serve restaurants (QSRs) in Italy that offer and do not offer food delivery services. The emphasis will be put on kitchen processes and control models.

The sample selection will be performed using a basic quantitative sampling, where Italy has a substantial number of quick-service restaurants (QSRs), with half of them utilizing food delivery services and the other half not.

The objective of the qualitative sample is to select a subset from the quantitative sample in order to conduct in-depth interviews and case studies. This selection ensures diversity in terms of geography, size, and client base.

Data collection methods for quantitative data utilize structured surveys to gather data on the operational efficiency, revenue sources, consumer reach, and financial success of both categories of restaurants (Phellas et al, 2011).

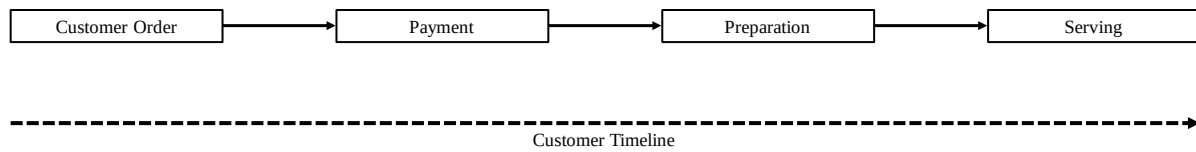
Qualitative data refers to information that is descriptive in nature and cannot be measured or quantified. It includes data obtained through methods such as interviews, observations, and open-ended survey questions. To gain a better understanding of the advantages and challenges associated with incorporating food delivery services, it is advisable to carry out semi-structured interviews with restaurant owners and managers, as well as organise focus groups with staff and customers. Furthermore, it is necessary to scrutinize the financial documents and digital marketing strategies to assess their impact on market visibility and profitability.

Apply thematic analysis (Braun et al, 2012) to identify common themes and differences in managerial practices, challenges encountered, and strategies employed by restaurants that offer delivery services compared to those that do not.

Building a flowchart comparison using both quantitative and qualitative sampling and analysis results in the development of two unique flowcharts:

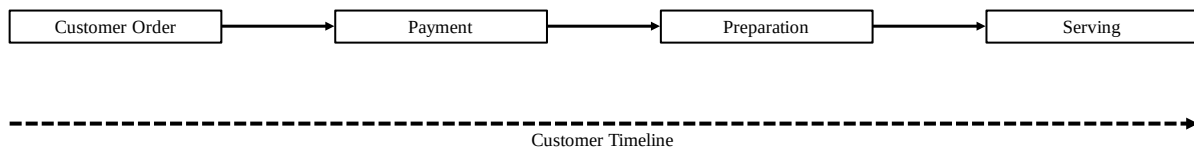
Flowchart 1: Standard production process (customer order - payment - preparation - serving) for restaurants without delivery services.

Figure 1, flowchart for standard production process.



Flowchart 2: Production process incorporating food delivery (online customer order - preparation - packing for transport - rider call - payment - delivery) for restaurants with delivery services.

Figure 2, flowchart for food delivery production process.



These two flowcharts will be used to identify and note variations in restaurant setup, as well as to observe enhancements and changes in restaurant management because of the introduction of food delivery.

Results. It is reasonable to anticipate that the management of restaurants will undergo a significant transformation after the introduction of meal delivery services. The purpose of this study is to examine and compare the operational procedures of two various types of restaurants, where the first one offers a meal delivery service and another that does not offer such a service. We will use the restaurant that does not provide delivery service as a control group. This will allow us to identify differences in terms of operations, people management, supply chain management, and other managerial practices that may be different from one another.

We have developed two distinct flowcharts to simplify this study. The first flowchart is for restaurants that offer delivery service, and the second flowchart is for businesses that do not offer delivery service. Through the process of superimposing these charts onto the operational procedures of each restaurant, we will be able to identify variances readily and explicitly in the operations as well as potential areas of concern. Following that, these variations will be accurately documented in a comparative matrix using a methodical approach. With the use of this technology, we can directly compare the production processes of the two different types of catering and highlight elements that are particularly important.

We are anticipating the discovery of major differences, particularly in relation to the management of time. Restaurants that offer delivery services are required to coordinate their delivery schedules with those of the couriers, whereas restaurants that do not offer delivery services do not have to worry about this issue. In addition, we anticipate discovering essential issues affecting the preparation of products for delivery. These aspects include the utilization of innovative materials and specialized equipment for packaging, as well as thermal bags that are utilized for transportation. Restaurants that provide delivery services face an additional challenge because of these features, which have an effect not only on the operation of the business but also on the management of expenses.

Research limitations. The in-depth analysis of the significant impacts that meal delivery services have on restaurant operations, no matter how comprehensive it is, is exposed to many potential limitations that may affect the scope, depth, and generalizability of the findings. To the conduct of the accurate assessment of the findings of the research and providing the direction for further research in this area, the thorough understanding of these limitations is very important. It is likely that there will be constraints due to geographic and cultural differences. It is likely that the research fails to capture the variety of restaurant operations and consumer behaviors that are prevalent worldwide, especially when it looks at the Italian food delivery business or niche areas such as Quick Service Restaurants (QSR). Different regions may use different patterns, regulatory frameworks, and customer preferences that can influence the acceptability of food delivery services and their implications.

In a dynamic and evolving market, constraints are likely to be experienced. Information technology is growing in this sector very speedily and customer demand is the always new in the food delivery industry. This research may overlook the latest developments or pending trends that have the capacity of impacting restaurant business. Such examples include novel delivery methods, alterations of consumer tastes, and legal changes that have an impact on the food delivery system.

We can trust in the secondary data, because in case a research project is largely dependent on previously published literature and secondary data sources, the chances of the research running into limitations such as inaccuracy, irrelevance, and timeliness of the data are quite high. Due to the dynamic nature of the food delivery market, the information may be outdated, which could have been overlooked in previous research. Lucas et al., (2013) also point out that, given the diversity of business models, management styles and operational techniques that are employed in restaurants, one should focus on the diversity of management and operational practices in this field. This diversity might not be considered in the research, which could result in simplifying the complexities and nuances of how diverse types of

restaurants adapt and use the meal delivery services. Finally, there is the risk of having a major influence on the realization of financial objectives. The variable pricing structures, revenue models and commissions of the delivery platforms can make it difficult to understand the financial impact of implementing food delivery services. This happens because different delivery platforms have different commission rates. The study may not provide a good deal of the long-term financial viability and profitability of restaurants that adjoin a meal-delivery service.

Managerial implications. Other than giving informative that is very valuable to restaurant operators, managers and other stakeholders in the restaurant industry, the study, of the wide impact of meal delivery services on restaurant operations, has critical managerial implications. The impacts of integrating meal delivery services into traditional restaurant formats should be weighed to deal with the challenges and opportunities that the fusion of services brings about. Below we indicate the most important managerial implications derived from the research, along with available supplementary papers.

Strategically adapting, the restaurants' management must realize the requirement of integrating digital meal delivery services into their general business strategy. This does not only involve working with the third-party delivery services, but also improving their web presence and the digital ordering systems to make the customer experience more satisfying. Managers need thorough knowledge of the inherent intricacies of such platforms for them to use digital platforms in growing their customer base beyond the limitation of the physical location and seating capacity.

In the research conducted by A. R. and Devakumar P.S. (2021), the article referred to as *Online Food Delivery- A Solution for Upsurging Restaurant Business* examines the potential of restaurants making money by supplying the meals to the homes of the customers, thus avoiding the limitations that are usually associated with businesses.

Through the implementation of dual service lines and the enhancement of operational efficiency: The entry of meal delivery services calls for a rethinking of kitchen operations to effectively handle orders from both in-house dining and delivery. Managers were required to think about the layout of the kitchen reorganization, the use of modern technologies in order administration as well as the creation of separate service lines for delivery orders to ensure operation efficiency and excellent service across both channels.

The research conducted by P. Feldman, Andrew E. Frazelle, and R. Swinney (2021) titled "Managing Relationships Between Restaurants and Food Delivery Platforms: The paper "Conflict, Contracts, and Coordination" explores a number of approaches that can be applied to the development of service lines – in the context of food delivery systems – as well as financial models.

Re-evaluating the financial model, restaurant management needs to reconsider the financial model they have because delivery platform fees affect profitability. Thus, the assessment of profitability in cooperation with delivery providers, changing pricing strategy to accept commissions payments, as well as the development of tools to raise order value and customer loyalty through promotions and loyalty programs are the steps to be undergone.

The digital shift, which is happening in the restaurant business, emphasizes the need for restaurants to implement digital marketing approaches to enhance their presence in the market. A well-established online brand presence should be one of the key goals for managers, they can achieve this goal by using social media, search engine optimization (SEO), and targeted online advertising. In a competitive context, this technique can be instrumental in attracting new clients, retaining the clients you already have, and improving overall market penetration.

Success needs adaptation to the consumer's preferences and trends. Understanding the dynamics of the changing consumer's preference is critical, and so is the need for adjust to those preferences. This includes the creation of menu items that are conducive to delivery, the study of packaging innovations that sustain food freshness during transport, and the awareness of consumer interests in alternatives that are healthier, more sustainable, and locally sourced.

Focusing on the online meal delivery market, the article called "A Study of Customer Satisfaction with Online Food Delivery Applications" by Rapariya (2023) emphasizes the importance of reaching customer expectations.

Management implications brought about by the increasing meal delivery industry have highlighted the need of the strategic, operational, and financial changes to be implemented. Restaurant managers who are open to adopting these changes can deal with the challenges that the digital era brings in a more effective manner and can be competitive and profitable.

To be successful in a continuously changing digital food service environment restaurant managers need to carry out further research into these impacts. This will lead to deeper comprehension and sharper techniques.

Originality of the paper. The research is notable for its originality in several respects, particularly for its detailed assessment of the impact of food delivery services on the restaurant industry, with a focus on the Italian market and the Quick Service Restaurants (QSR) sector. The width of approach this research adopts for considering shifts in restaurant management practices, operational adjustments, and strategic changes, which are driven by the introduction of meal delivery services, is a major dimension of the novelty of this research. To demonstrate why this research is unique, the following reasons are provided, along with supporting articles which are relevant.

A unified view of digital revolution in food service in comparison with other studies that could have focused on individual parts of food delivery services, this research provides an integrated look at digital changes occurring in food service industry. It not only looks at the operational and managerial changes but also explores the strategic implications that restaurants will come across as they adapt to this new business model. A deeper understanding of the opportunities and challenges posed by the food delivery services can be achieved by using this broad-based approach.

Emphasis on Italian market and quick-service restaurant sector, the research brings a new layer of originality by studying the Italian food delivery market and its effect on fast-service restaurant sector. This allows to understand a

certain geographical context and industry segment. By having this focus, it is easier to conduct deeper research of the influences cultural, economic, and regulatory factors have on the adoption and integration of food delivery services in Italy. This study may give some ideas that are relevant to the other markets.

Paper in support of the argument: *The Work in the Gig Economy*. The research called “Evidenze dal mercato del food delivery in Italia” was published in 2018 by L. Rizzica and Cristina Giorgiantonio. This research offers an introduction to the Italian food delivery market and its effect on the economy and legislation setting.

A Comprehensive Analysis of the Changes in Operations and Dual Service Lines: This study is pioneering as it gives a detailed overview of the methods that restaurants are using to restructure their kitchen operations and service lines to cater for orders from both dine-in restaurants and delivery services. The study contributes new knowledge about the logistical shift that is required for victory in digital food delivery system. These new perspectives are emphasized by emphasizing the operational advantages and challenges, which are associated with dual service lines management.

The findings of the research in respect of how restaurants can “fix” economic problems of work with delivery platforms are a result of the research itself having examined digital marketing techniques and the reevaluation of financial models in response to food deliveries. This involves the application of new tactics in pricing, promotions and customer participation in the age of digital revolution.

This study is aimed at the way restaurants change their menu provisions and business model to cater for the demands of the food delivery market that are influenced by the changes in consumer preferences, and trends. The novelty of this research is in the fact that it studies how restaurants are changing their menu offerings and ways of doing business. Within the framework of meal delivery services, this aspect of the study highlights the dynamic interrelation between the behaviour of customers and the methods applied by restaurants.

Being concise, the peculiarity of this study consists in the complete analysis, the focus on certain regions and industries and consideration of ways, in which the introduction of food delivery services has impacted functions and strategies of restaurants. This research also helps in bridging a gap in the available literature and becomes a valuable material for the restaurant managers, owners, and lawmakers, in addition to providing some fresh insights and contributing to the academic and practical knowledge of the digital transformation in the food service industry.

References

- ATHIRA R., DEVAKUMAR P.S. (2021), “Online Food Delivery- A Solution for Upsurging Restaurant Business”, *Contemporary Business Review*, vol. 14, n. 2, pp. 87-97.
- ALESSANDRONI G. (2015), Attrattività del mercato italiano del food delivery e strategie di acquisizione: il caso Hellofood.
- ALMEIDA F. (2018), “Strategies to perform a mixed methods study”, *European Journal of Education Studies*.
- BRAR K., MINAKER L.M. (2021), “Geographic reach and nutritional quality of foods available from mobile online food delivery service applications: novel opportunities for retail food environment surveillance”, *BMC Public Health*, vol. 21, pp. 1-11.
- BRAUN V., CLARKE V. (2012), *Thematic analysis*. American Psychological Association.
- CRESWELL J.W., PLANO CLARK V.L. (2017), *Designing and conducting mixed methods research*. Sage publications.
- FELDMAN P., FRAZELLE A.E., SWINNEY R. (2023), “Managing relationships between restaurants and food delivery platforms: Conflict, contracts, and coordination”, *Management Science*, vol. 69, n. 2, pp. 812-823.
- KOBEZ M. (2018), “‘Restaurant reviews aren’t what they used to be’: digital disruption and the transformation of the role of the food critic”, *Communication Research and Practice*, vol. 4, n. 3, pp. 261-276.
- KOO S.B., YU-KYEONG C. (2020), “A Qualitative Study on the Needs, Benefits and Reasons for Continuing Use of Food Delivery Services: Focus on Interviews with Consumers and Restaurant Owners”, *East Asian Society of Dietary Life*, vol. 30, n. 6, pp. 462-472.
- MA J., WEBB T., SCHWARTZ Z. (2021), “A blended model of restaurant deliveries, dine-in demand and capacity constraints”, *International Journal of Hospitality Management*, vol. 96, pp. 102981.
- ONCINI F., ET AL. (2020), “Towards food platforms? An analysis of online food provisioning services in Italy”, *Geoforum*, vol. 114 pp. 172-180.
- PHELLAS C.N., BLOCH A., SEALE C. (2011), “Structured methods: interviews, questionnaires and observation”, *Researching society and culture*, vol. 3, n. 1 pp. 23-32.
- RAPARIYA R. (2023), “A Study of Customer Satisfaction with Online Food Delivery Applications”, *International Journal of Food and Meal Research*, vol. 5, n. 5.
- RECUERO-VIRTO N., VALILLA-ARROSPIDE C. (2022), “Forecasting the next revolution: food technology’s impact on consumers’ acceptance and satisfaction”, *British Food Journal*, vol. 124, n. 12, pp. 4339-4353.
- RIZZICA L., GIORGANTONIO C. (2018), “Il lavoro nella gig economy. Evidenze dal mercato del food delivery in Italia (*Working in the gig economy. Evidence from the Italian food delivery industry*)”, (December 12, 2018). Bank of Italy Occasional Paper 472
- VAN VELDHoven Z., ET AL. (2021), “The impact of online delivery services on the financial performance of restaurants”, *2021 7th International Conference on Information Management (ICIM)*. IEEE.

Exploring Metaverse Adoption in High-Involvement Purchases: Insights from a field research

BEATRICE LUCERI¹ SIMONE AIOLFI² GIOVANNI ROMANO³

Abstract

The emergence of the Metaverse poses a new challenge within the digitalization process of brands and retailers. The proliferation of new technologies such as Extended Reality (XR), 5G networking, and Artificial Intelligence (AI) is laying the groundwork for creating this three-dimensional virtual world where users, through their avatars, can carry out their daily activities, including shopping. By making digital twins, companies can extend the purchasing process within these touchpoints, thus offering immersive digital interaction with their products. This study provides insights into the factors influencing consumers' intention to use Metaverse Technologies (MT) to support the purchasing process of high-involvement goods. Through a quantitative research approach using a structured questionnaire, a theoretical framework based on UTAUT was tested using responses from 103 lead buyers of a helicopter industry company, and PLS-SEM was employed. The findings reveal that performance expectancy and effort expectancy significantly impact usage intention. Likewise, a significant effect of perceived interaction quality on both performance expectancy and effort expectancy was found. Additionally, perceived curiosity was found to have an impact on effort expectancy. Theoretical contributions are provided, supporting the ongoing research stream on consumers' engagement intention in the Metaverse. Moreover, relevant managerial implications are presented, serving as guidelines for firms needing a clearer understanding of the marketing activities required to access this new virtual world.

Key words: metaverse; high-involvement goods; usage intention; metaverse technologies; PLS-SEM; purchasing behavior

Framing of the research. *There is significant buzz and interest surrounding the Metaverse (Dolata & Schwabe, 2023). The Metaverse is a 3D digital virtual world that extends beyond reality and is emerging as a transformative innovation. It allows users to interact via avatars, engaging their senses and facilitating various activities such as meeting with friends, working, shopping, building social and emotional relationships, attending concerts, meetings and events (Kozinets, 2023; Mourtzis et al., 2022). The term Metaverse was first introduced into science fiction literature in the 1990s by Stephenson (1992) and has since become part of scientific discourse (Park & Kim, 2022). Considered a new evolution of the Internet (Mourtzis et al., 2022), it refers to a virtual shared space created by the convergence of physical and virtual reality.*

Defining the Metaverse accurately is challenging due to its potential impact on various sectors, such as entertainment, education, shopping, and social networking. However, the commonly discussed Metaverse is a virtual world that resembles the real world and provides a space for users to interact with each other. According to Yoo et al. (2023) it is an online collaborative shared space consisting of 3D environments that use high consumer immersion techniques to reduce the perception of technological mediation; allows for the use of transferrable and unique digital assets; and enables user-generated digital personas to interact with each other. Essentially, the Metaverse is a combination of Virtual Reality (VR), Augmented Reality (AR), Extended Reality (XR), Blockchain, Artificial Intelligence (AI), 5G networking, Internet of Things (IoT), social media, and online gaming. It creates a seamless and immersive digital environment where users can interact, create, and transact.

Due to its characteristics, the Metaverse is expected to revolutionize daily activities and interpersonal engagements involving individuals, businesses, products, and services. Despite widespread interest and readiness to work on its construction, there is still much uncertainty surrounding its nature and potential adoption. The ultimate success and adoption of the Metaverse remain uncertain because of complexities and uncertainties surrounding issues such as privacy, data ownership, digital rights, and inclusivity (Dwivedi et al., 2022). Nevertheless, an increasing number of companies are investing in the Metaverse, and the global market size is expected to reach USD 840 billion by 2030, with around 1.5 billion users (Statista, 2023). Several reports indicate a growing interest in the innovative functionalities of

¹ University of Parma
e-mail: beatrice.luceri@unipr.it

² University of Parma
e-mail: simone.aiolfi@unipr.it

³ University of Parma
e-mail: giovanni.romano@unipr.it

virtual environments and digital platforms with 79% of consumers prefer to purchase physical and virtual goods in a virtual space (McKinsey & Company, 2022). Moreover, according to recent research by Osservatorio Extended Reality & Metaverse (2023), the Retail and Entertainment sectors dominate investments, accounting for 30% each.

Although the future of this virtual space remains unclear, it is evident that various interaction modalities and novel augmented touchpoints are emerging for brands, consumers, and retailers. All this has the potential to create significant value and strategically influence the customer experience throughout the pre-purchase, purchase, and post-purchase phases (Yoo et al., 2023). In light of this scenario, the aim of this study is to investigate the impact of Metaverse on retail experiences, specifically consumers' intention to use Metaverse Technologies (MT) when purchasing high-involvement goods for which the consumers' decision-making process is a complex problem-solving (Nayeem & Casidy, 2013).

Purpose of the paper

Theoretical background

Kozinets (2023) argues that the Metaverse plays a decisive role in transforming customer experiences and creating new opportunities in service relationships. Users engage in a variety of activities, including shopping, which can be experienced immersively through devices such as Head-Mounted Displays (HMDs). They can also purchase non-fungible tokens (NFTs) in the form of avatars, digital real estate, and digital artwork, and try out products by viewing and/or testing them within a Metaverse platform before making a purchase (Kozinets, 2023).

The early stage of development and dissemination of Metaverse emphasises the need to focus on factors that could influence their usage, providing insights into potential consumer behaviours. Several studies have examined the elements that affect individuals' willingness to engage with the Metaverse, with many concentrating on the educational context (Alfaisal et al., 2024). However, there appears to be a significant gap in the literature regarding consumers' intentions to use MT while shopping, particularly for high-involvement products. Consumers' decision-making process for such products is a complex problem-solving sequence that involves problem recognition, information search, brand evaluation and selection, purchase, and post-purchase evaluation (Nayeem & Casidy, 2013). Therefore, high-involvement buying decisions entail a significant level of financial risk and emotional investment for customers. The purchase of infrequent, expensive, and high-involvement products typically involves a learning process, necessitating detailed information, extensive research, comparison, and deliberation (Grewal et al., 2003; Kotler et al., 2007; Nayeem & Casidy, 2013). High-involvement purchases, such as buying a house, an automobile, or expensive luxury items like jewelry or designer clothing, often require a unique and emotional experience for customers (Grewal et al., 2003; Nayeem & Casidy, 2013).

Previous studies have identified several types of information sources that consumers consider trustworthy and reliable when making high-involvement purchases (Doran, 2002). The process of selecting information sources may include external sources, such as information from agents, family and friends, product trials, and research before making a final decision. The Internet also has a significant impact on several stages of the consumer decision-making process (Nayeem & Casidy, 2013). It is an efficient medium for accessing, organizing, and communicating information. Several studies discuss the role of digital technologies in stimulating high-involvement purchases (i.e., Sihi, 2018; Shen et al., 2021). For instance, Sihi (2018) explored the impacts of virtual reality (VR) and augmented reality (AR) technologies on the high-involvement purchase decisions of home-buying, emphasizing their role in enhancing consumer information search and evaluation of purchase alternatives. This study suggests that VR and AR technologies significantly impact consumer information search, evaluation of purchase alternatives, and the role of sales agents in high-involvement purchase contexts.

The potential of the Metaverse and its associated technologies to assist consumers in making informed purchasing decisions has been highlighted by Shen et al. (2021) and Dwivedi et al. (2022). This objective can be achieved by creating a virtual platform where customers can interact with the product, explore its features, and even simulate its use. Furthermore, enabling direct remote interaction with the seller during the trial phase is achievable. This, in turn, allows for assistance to be provided not only during the pre-purchase stage but also post-purchase. It also enables the involvement of other people in the shopping experience who can interact with the shopper throughout the purchase process. The Metaverse can incorporate digital twins and other interfaces embedded in the platform for a seamless operation and superior customer experience (Dwivedi et al., 2022). The concept of a digital twin has found wide applications in industries such as automotive, e-commerce, healthcare, manufacturing, and logistics. It is a virtual replica of actual operations that can help organizations minimize costs, prevent accidents, optimize planning, and allocate resources efficiently (Dwivedi et al., 2023; Papagiannidis et al., 2014). The digital twin enables the presentation of products in virtual spaces in an authentic and realistic manner, conveying product features through text, photographs, and videos. This facilitates the description of products and their usage (Papagiannidis et al., 2014; Dwivedi et al., 2022). For example, in the virtual world of the Metaverse, marketers can employ targeted strategies to appeal to customers during high-involvement purchases. This involves highlighting product features, benefits, and quality to alleviate concerns and build confidence in the decision-making process, both online and in physical stores. Creating virtual representations of products is a challenging task. However, a simulated experience in the Metaverse can enhance the shopping experience by increasing engagement, enjoyment, satisfaction, and purchase intention (Papagiannidis et al., 2014; Dwivedi et al., 2022).

Framework for High-Involvement Purchasing in the Metaverse

The aim of this study is to identify the factors that drive consumers' intention to use MT when purchasing high-involvement goods. The proposed framework for High-Involvement Purchasing in the Metaverse is based on the original UTAUT model (Venkatesh et al., 2003), incorporating the most relevant variables as depicted in Figure 1. The UTAUT model and its extended versions (Venkatesh et al., 2012) have been widely adopted in numerous studies for exploring consumer behaviors towards emerging technologies, including the Metaverse (i.e., Alkhwalidi, 2023). The proposed model considers three theoretical constructs from the UTAUT framework: Performance Expectancy, Effort Expectancy, and Social Influence. Additionally, variables such as consumer innovativeness, perceived interaction quality, and perceived curiosity are included.

Performance Expectancy is "the degree to which an individual believes that using the system will help him or her to attain gains in job performance" (Venkatesh et al., 2003, p.447). In the context of this study, this variable aims to determine the extent to which consumers believe that using MT can provide valuable support in their process of purchasing high-involvement products.

Effort Expectancy is a variable that measures "the degree of ease associated with the use of the system" (Venkatesh et al., 2003, p.449). It is crucial to evaluate MT's perceived ease of use, considering the potential barrier this dimension may pose. For instance, to interact in a highly immersive manner with a virtual world, consumers are required to wear devices such as HMDs.

Social Influence is "the degree to which an individual perceives that important others believe he or she should use the new system" (Venkatesh et al., 2003, p.451). In cases where adopting a particular technology is mandatory, such as for an upgrade of workplace technologies or when required by law, the effect of social norms is attributable to an individual's response in terms of conformity, thus resulting from a form of social pressure. When adoption choice is voluntary, social norms can influence how a technology is perceived. This can activate mechanisms such as internalization and identification (Venkatesh et al., 2003). This is relevant when adopting MT to support the process of purchasing high-involvement products.

The literature suggests that Performance Expectancy, Effort Expectancy, and Social Influence positively impact the intention to use a new technology (Venkatesh et al., 2012). Based on this, the following hypotheses are formulated:

H1: Effort expectancy positively affects the intention to use MT for high-involvement product purchases

H2: Performance expectancy positively affects the intention to use MT for high-involvement product purchases

H3: Social influence positively affects the intention to use MT for high-involvement product purchases

Consumer innovativeness drives individuals to try innovative and different products, often placing them as early adopters (Roehrich, 2004). The importance of an individual's openness to innovation in adopting new technologies has been extensively studied in marketing literature (Handarkho & Harjoseputro, 2020; Shanmugavel & Micheal, 2022). MT have the potential to revolutionise the consumer purchasing process, especially for innovative consumers. This creates an opportunity for highly innovative individuals to be more willing to experiment with these technologies. Thus, the following hypothesis is proposed:

H4: Consumer innovativeness positively affects the intention to use MT for high-involvement product purchases

The variable of perceived interaction quality assesses a user's belief in a computer system's ability to facilitate adequate interaction with the digital environment. It is important to interact with high-involvement products in a digital environment to gather necessary information for evaluation. Previous research has emphasized the role of perceived interaction quality in influencing the utilitarian aspect of consumer behavior (Kang et al., 2015; Nandi et al., 2021). Thus, it is considered an appropriate antecedent of the utilitarian variables in our model - performance expectancy and effort expectancy. Based on this, we propose the following hypotheses:

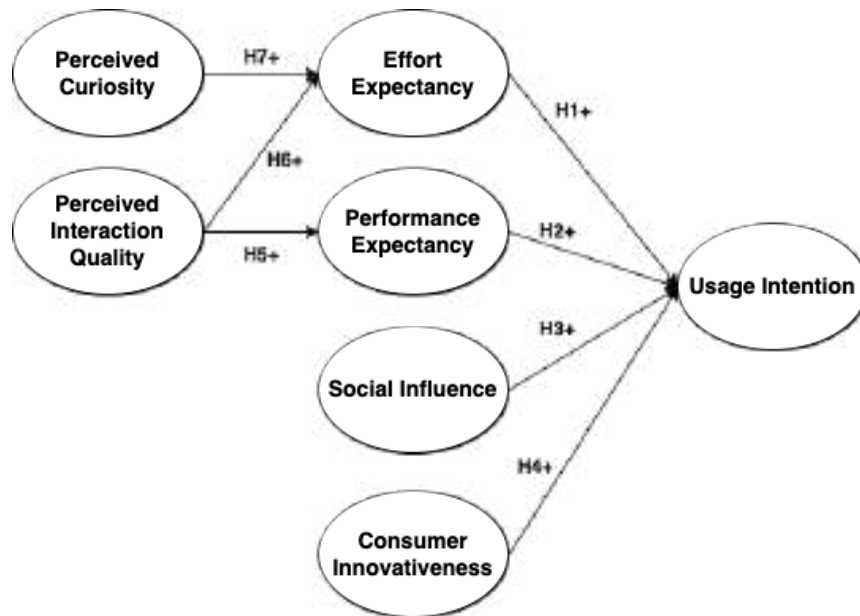
H5: Perceived interaction quality positively affects performance expectancy

H6: Perceived interaction quality positively affects effort expectancy

Perceived curiosity is "a desire to obtain and learn new information and knowledge that stimulates human behaviour to explore novel ideas" (Alkhwalidi, 2023). Several authors have included the variable to study the context of the Metaverse and in many studies is considered as an antecedent of the Effort Expectancy (Aburbeian et al., 2022; Alkhwalidi, 2023). Based on this, we propose the following hypothesis:

H7: Perceived curiosity positively affects effort expectancy

Figure 1 - Framework for High-Involvement Purchasing in the Metaverse



Methodology

Measures

An online survey was conducted to measure the variables of the proposed framework for High-Involvement Purchasing in the Metaverse using established and reliable scales sourced from the literature. The survey was aligned with prior research on the adoption of new technology (Aiolfi, 2023; Shukla & Sharma, 2018; Venkatesh et al., 2012) and to ensure reliability and validity, survey design adhered to specific protocols and guidelines (i.e., Evan & Miller, 1969; Kountur, 2011). Multiple-item scales informed by previous research in consumer behavior, technology adoption, psychology, and marketing theories were used to measure variables in the online survey. Adaptations were made to suit the study's dimensions. The Performance Expectancy scale was evaluated using Escobar-Rodríguez & Carvajal-Trujillo's (2014) 4-item scale. The Effort Expectancy was measured with 4-item scale derived from Venkatesh et al. (2003), and Social Influences were assessed using the 3-item scale by Venkatesh et al. (2012). Consumer Innovativeness was assessed with 4 items-scale by Parasuraman & Colby (2014); Perceived Curiosity and Perceived interaction quality were measured using 3-points scales derived respectively from Agarwal & Karahanna (2000) and Kim & Ko (2019). Finally, Usage Intention was measured using a 4-item scale as utilized by Ramos-de-Luna et al. (2016). Participants used self-anchoring scales from 1 to 7 points to express agreement or disagreement with statements, from 'Strongly Disagree' (1) to 'Strongly Agree' (7).

Sample and data collection

The Microsoft Form platform was used to design and distribute the questionnaire online. Administration was carried out through direct mail, targeting lead buyers of an Italian helicopter industry company who had shown interest in the product during trade fairs or through the company's website contact form. The survey began by presenting the scenario in Figure 2.

Figure 2 - Survey scenario

Imagine being interested in purchasing a *Company's Brand* helicopter. The company offers you a cutting-edge service: access to a virtual environment in the Metaverse, where you will have the opportunity to:

- Explore a faithful digital replica of the original *Company's Brand* helicopter;
- Analyze in detail the internal and external structure of the vehicle;
- Conduct virtual test drives, experiencing control as if you were physically at the helm;
- Receive assistance from an aviation industry expert, represented by an avatar, who will accompany you in all these activities.

All of this without the need to visit the company, allowing you to connect remotely from wherever is most convenient for you. Now, we invite you to read the following statements and express your level of agreement or disagreement

A hyperlink included in the email invited recipients to participate in the study, redirecting them to the form page for completion. Data collection took place between January and February 2024. The questionnaire was available in both

Italian and English to accommodate the participation of the company's clients from countries other than Italy. A total of 580 lead buyers were present in the Company's database and were contacted. Finally, 103 questionnaires were collected, resulting in a response rate of 17.76%. The sample consisted of 90.3% men and 8.7% women, with an average age of 53 years. The sample characteristics are shown in Table 1.

Table 1 - Sample Characteristics

Group	Frequency (N=103)	Percentage (%)
Gender		
Man	93	90.3
Woman	9	8.7
n/c	1	1.0
Age		
< 26	1	1.0
26-35	7	6.8
36-45	15	14.6
46-55	38	36.9
56-65	27	26.2
≥ 65	15	14.6
Education		
High school or below	9	8.7
Bachelor's degree	35	34.0
Master's degree or above	59	57.3

Results. The study employed the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach and the SmartPLS 4.0.9.6 software to analyze the proposed Framework for High-Involvement Purchasing in the Metaverse (Abdi, 2007; Fornell & Bookstein, 1982; Ringle et al., 2024). PLS-SEM was selected because of its ability to evaluate intricate structural equation models and analyze correlations between variables, particularly in situations where the distribution is non-normal and the sample size is not large, or at least 10 times the maximum number of indicators of a latent variable (Hair et al., 2011). To ensure the reliability and convergent validity of each construct, we evaluated the adequacy of individual items and composites. Convergent validity of measures was tested by examining the significance of factor loadings and composite reliability. The measurements presented in Table 1 demonstrate satisfactory results in terms of both convergent and discriminant validity. This is evidenced by the factor loadings, ρ_A , and AVE, which were either above or very close to the 0.70 threshold. Additionally, Cronbach's alpha and ρ_A exceeded the cut-off points of 0.70, indicating internal consistency reliability (Dijkstra & Henseler, 2015; Hair et al., 2022; Santos, 1999). The AVE values were all above 0.50, indicating acceptable convergent validity (Sarstedt et al., 2022). Additionally, the HTMT ratio values in Table 2 were all below the threshold of 0.85, indicating discriminant reliability (Henseler et al., 2015).

Table 2 - Reliability and validity tests

Construct	Cronbach's α	ρ_A	AVE	Mean(SD)
Performance Expectancy (PE)	0.955	0.956	0.880	4.55 (1.48)
Effort Expectancy (EE)	0.945	0.947	0.859	4.40 (1.45)
Social Influences (SI)	0.945	0.947	0.902	3.57 (1.61)
Consumer Innovativeness (CI)	0.921	0.927	0.811	4.56 (1.49)
Perceived Curiosity (PC)	0.967	0.967	0.938	5.24 (1.49)
Perceived Interactivity Quality (PIQ)	0.919	0.921	0.862	5.23 (1.36)
Usage Intention (UI)	0.979	0.979	0.942	4.67 (1.67)

Table 3 - Heterotrait-monotrait (HTMT) ratio

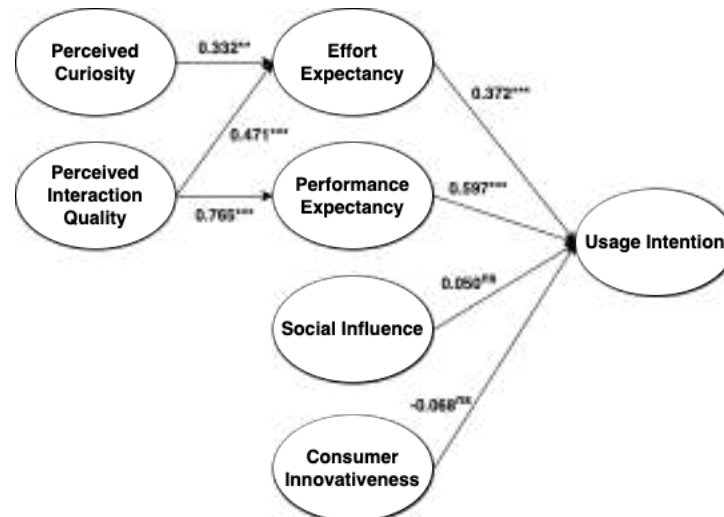
	CI	EE	PC	PE	PIQ	SI	UI
CI							
EE	0.833						
PC	0.635	0.730					
PE	0.643	0.816	0.783				
PIQ	0.579	0.780	0.827	0.817			
SI	0.751	0.841	0.679	0.811	0.749		
UI	0.649	0.853	0.866	0.913	0.847	0.789	

To evaluate the proposed framework, we used PLS-SEM due to its proficiency in analyzing variable correlations and evaluating intricate structural equation models. The bootstrap procedure was conducted using Smart PLS 4.0.9.6 software with 5000 bootstrap samples. We applied a bias-corrected 95% confidence interval and accelerated bootstrap method for model analysis. Table 3 presents the synthesized findings of the main effects. The results support H1 and H2, as effort expectancy ($\beta=0.372$, $P<0.000$) and performance expectancy ($\beta=0.597$, $P<0.000$) exerted positive and significant effects on usage intention. Additionally, perceived curiosity ($\beta=0.332$, $P<0.006$) was found to be positively related to usage intention, supporting H7. The study found that social influences ($\beta=0.050$, $P>0.05$) and consumer innovativeness ($\beta=-0.068$, $P>0.05$) did not have a significant effect on usage intention, therefore H3 and H4 were not supported. Furthermore, perceived interaction quality had a positive and significant effect on performance expectancy ($\beta=0.765$, $P<0.000$) and effort expectancy ($\beta=0.471$, $P<0.000$), thereby supporting H5 and H6.

Table 4 - Results of hypothesis testing

Hypothesis	Coefficients	S.E.	P	Results
H1: EE $\rightarrow$ UI	0.372***	0.102	0.000	Supported
H2: PE $\rightarrow$ UI	0.597***	0.079	0.000	Supported
H3: SI $\rightarrow$ UI	0.050	0.095	0.598	Not Supported
H4: CI $\rightarrow$ UI	-0.068	0.078	0.384	Not Supported
H5: PIQ $\rightarrow$ PE	0.765***	0.049	0.000	Supported
H6: PIQ $\rightarrow$ EE	0.471***	0.131	0.000	Supported
H7: PC $\rightarrow$ EE	0.332**	0.121	0.006	Supported

Figure 3 - Structural Model: Framework for High-Involvement Purchasing in the Metaverse



Note(s): ***: p-value < 0.001; **: p-value < 0.01; ns: not significant

Theoretical and Managerial implications. The obtained results can provide valuable insights to support the actions of businesses intending to extend the sale of high-involvement goods to the Metaverse. The significance of effort expectancy and performance expectancy in explaining usage intention confirms previous findings in the literature, emphasizing the importance of the utilitarian dimension for consumers in their technology adoption journey. This is also applicable to sales management conducted through the Metaverse. It is crucial to carefully assess the User Experience within the virtual environment to ensure ease of use and utility in supporting the purchasing process. To effectively reduce the effort involved in purchasing high-involvement goods, delivering an experience that highlights the appropriate level of immersion required when designing the virtual experience is necessary. Therefore, it is important to evaluate whether XR technologies, such as Head-Mounted Displays, can meet this requirement or if a two-dimensional virtual world accessible via a normal screen would be more suitable.

Thereafter, to support the Metaverse in terms of service relationships, companies could leverage the improved quality of interaction it offers. The potential for seamless engagement within the digital realm should extend beyond product interaction alone. It should encompass the accessibility of a sales representative for enhanced interaction, thereby augmenting the utility of the Metaverse in both pre- and post-purchase stages. For instance, the capability of immersive interaction could be showcased by enabling product testing opportunities during trade shows or other physical product exhibitions. By accessing the Metaverse through a Head-Mounted Display (or even a PC or smartphone) and offering guidance on navigating such environments, the true capabilities of these tools would be demonstrated.

Furthermore, consumer innovativeness did not emerge as a significant variable. This suggests that the level of digitalization is already high enough that consumers do not view the Metaverse as a disruptive innovation. Therefore, it

is not necessary to exclusively focus on that particular segment to enhance this experience. However, it is possible to direct the testing of such technologies towards customers who express greater curiosity in them. It is feasible to collect expressions of interest through a company's online channels, such as their website or social media, to offer test versions concurrently with assistance for their utilization, both remotely and in-person.

Research limitations. The research provides significant contributions to the adoption of the Metaverse theme, yet it also presents limitations. Firstly, the still-emerging nature of the Metaverse phenomenon may necessitate further exploration. Through qualitative research, it would be possible to uncover new relevant dimensions and variables in explaining consumers' intentions to use the Metaverse. Furthermore, this research aimed to focus on high-involvement goods by analyzing the market of a helicopter company. Extending the investigation to other sectors (e.g., automobiles, yachts) could enhance the generalizability of the model's variables and allow for comparisons across different sectors, leveraging a more diverse and extensive sample. Finally, since usage intention was analyzed, future studies could include use behavior as well, targeting sectors and consumers already using MT to support the purchasing process to conduct a more comprehensive analysis of the model by incorporating use behavior, as in the original UTAUT framework proposed by Venkatesh et al. (2003).

Originality of the paper. To the best of our knowledge, this research is among the first to explore the key factors that may lead consumers to consider using the Metaverse for shopping. Specifically, this study is the first to examine the intention to use it to support the purchasing process of high-involvement goods. The findings have addressed the gap in the literature by applying the proposed model, based on the UTAUT model with additional consumer-related variables, thus investigating its applicability to the adoption of this technology. The proposed framework for High-Involvement Purchasing in the Metaverse was able to extract valuable insights into consumer behavior towards the new scenario offered by the Metaverse and the enabling technologies thereof.

References

- ABDI H. (2007), "Partial least square regression", *Encyclopedia of measurement and statistics*, In N. J. Salkind (Ed.), SAGE.
- ABURBEIAN A.H.M., OWDA A.Y., OWDA M. (2022), "A Technology Acceptance Model Survey of the Metaverse Prospects", *AI* 2022, vol. 3, n. 2, pp. 285-302.
- AGARWAL R., KARAHANNA E. (2000), "Time flies when you're having fun: Cognitive absorption and beliefs about information technology usage", *MIS Quarterly: Management Information Systems*, vol. 24, n. 4, pp. 65-694.
- AIOLFI S. (2023), "How shopping habits change with artificial intelligence: smart speakers' usage intention", *International Journal of Retail and Distribution Management*, vol. 51, n. 10, pp. 1288-1312.
- ALFAISAL R., HASHIM H., AZIZAN U.H. (2024), "Metaverse system adoption in education: a systematic literature review", *Journal of Computers in Education*, vol. 11, n. 1, pp. 259-303.
- ALKHWALDI A.F. (2023), "Understanding learners' intention toward Metaverse in higher education institutions from a developing country perspective: UTAUT and ISS integrated model", *Kybernetes*.
- DIJKSTRA T.K., HENSELER J. (2015), "Consistent Partial Least Squares Path Modeling", *MIS Quarterly*, vol. 39, n. 2, pp. 297-316.
- DOLATA M., SCHWABE G. (2023), "What is the Metaverse and who seeks to define it? Mapping the site of social construction", *Journal of Information Technology*, vol. 38, n. 3, pp. 239-266.
- DORAN K. B. (2002), "Lessons learned in cross-cultural research of Chinese and North American consumers", *Journal of Business Research*, vol. 55, n. 10, pp. 823-829.
- DWIVEDI Y.K., HUGHES L., BAABDULLAH A.M., RIBEIRO-NAVARRETE S., GIANNAKIS M., AL-DEBEI M.M., DENNEHY D., METRI B., BUHALIS D., CHEUNG C.M.K., CONBOY K., DOYLE R., DUBEY R., DUTOT V., FELIX R., GOYAL D.P., GUSTAFSSON A., HINSCH C., JEBABLI I., WAMBA S.F. (2022), "Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy", *International Journal of Information Management*, vol. 66, 102542.
- DWIVEDI Y.K., HUGHES L., WANG Y., ALALWAN A.A., AHN S.J., BALAKRISHNAN J., BARTA S., BELK R., BUHALIS D., DUTOT V., FELIX R., FILIERI R., FLAVIÁN C., GUSTAFSSON A., HINSCH C., HOLLENSSEN S., JAIN V., KIM J., KRISHEN A. S., WIRTZ J. (2023), "Metaverse marketing: How the Metaverse will shape the future of consumer research and practice", *Psychology & Marketing*, vol. 40, n4, pp. 750-776.
- ESCOBAR-RODRÍGUEZ T., CARVAJAL-TRUJILLO E. (2014), "Online purchasing tickets for low cost carriers: An application of the unified theory of acceptance and use of technology (UTAUT) model", *Tourism Management*, vol. 43, pp. 70-88.
- EVAN W.M., MILLER J.R. (1969), "Differential effects on response bias of computer vs. conventional administration of a social science questionnaire: An exploratory methodological experiment", *Behavioral Science*, vol. 14, n. 3, pp. 216-227.
- FORNELL C., BOOKSTEIN F. L. (1982), "Two Structural Equation Models: LISREL and PLS Applied to Consumer Exit-Voice Theory", vol. 19, n. 4, pp. 440-452.
- GREWAL R., CLINE T.W., DAVIES A. (2003), "Early-Entrant Advantage, Word-of-Mouth Communication, Brand Similarity, and the Consumer Decision-Making Process", *Journal of Consumer Psychology*, vol. 13, n. 3, pp. 187-197.
- HAIR ET AL. (2022), "A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)", *SAGE Publications, Inc.*, Mi, pp. 5-24.
- HAIR J.F., RINGLE C.M., SARSTEDT M. (2011), "PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice*", vol. 19, n. 2, pp. 139-152.
- HANDARKHO Y.D., HARJOSEPUTRO Y. (2020), "Intention to adopt mobile payment in physical stores: Individual switching behavior perspective based on Push-Pull-Mooring (PPM) theory", *Journal of Enterprise Information Management*, vol. 33, n. 2, pp. 285-308.

- HENSELER J., RINGLE C.M., SARSTEDT M. (2015), "A new criterion for assessing discriminant validity in variance-based structural equation modeling", *Journal of the Academy of Marketing Science*, vol. 43, n. 1, pp. 115-135.
- KANG J.Y.M., MUN J.M., JOHNSON K.K.P. (2015), "In-store mobile usage: Downloading and usage intention toward mobile location-based retail apps", *Computers in Human Behavior*, vol. 46, pp. 210-217.
- KIM D., KO Y. J. (2019), "The impact of virtual reality (VR) technology on sport spectators' flow experience and satisfaction", *Computers in Human Behavior*, vol. 93, pp. 346-356.
- KOTLER P., BURTON S., ADAM S., BROWN L., ARMSTRONG G. (2007), *Marketing*, Pearson Education Australia.
- KOUNTUR R. (2011), "The Ethical Issue of Response Bias in Survey Data Collection and Its Solution", *International Forum Journal*, vol. 14, n. 2, pp. 55-60.
- KOZINETIS R.V. (2023), "Immersive netnography: a novel method for service experience research in virtual reality, augmented reality and metaverse contexts", *Journal of Service Management*, vol. 34, n. 1, pp. 100-125.
- MCKINSEY & COMPANY (2022), *Value creation in the Metaverse - The real business of the virtual world*.
- MOURTZIS D., PANOPOULOS N., ANGELOPOULOS J., WANG B., WANG L. (2022), "Human centric platforms for personalized value creation in Metaverse", *Journal of Manufacturing Systems*, vol. 65, pp. 653-659.
- NANDI S., NANDI M.L., KHANDKER V. (2021), "Impact of perceived interactivity and perceived value on mobile app stickiness: an emerging economy perspective", *Journal of Consumer Marketing*, vol. 38, n. 6, pp. 721-737.
- NAYEEM T., CASIDY R. (2013), "The role of external influences in high involvement purchase behaviour", *Marketing Intelligence & Planning*, vol. 31, n. 7, pp. 732-745.
- OSSERVATORIO EXTENDED REALITY & METAVERSE. (2023). *Extended Reality e Metaverso: caratteristiche, opportunità e trend*.
- PAPAGIANNIDIS S., SEE-TO E., BOURLAKIS M. (2014), "Virtual test-driving: The impact of simulated products on purchase intention", *Journal of Retailing and Consumer Services*, vol. 21, n. 5, pp. 877-887.
- PARASURAMAN A., COLBY C.L. (2014), "An Updated and Streamlined Technology Readiness Index", vol. 18, n. 1, pp. 59-74.
- PARK S.M., KIM Y.G. (2022), "A Metaverse: Taxonomy, Components, Applications, and Open Challenges", *IEEE Access*, vol. 10, pp. 4209-4251.
- RAMOS-DE-LUNA I., MONTORO-RÍOS F., LIÉBANA-CABANILLAS F. (2016), "Determinants of the intention to use NFC technology as a payment system: an acceptance model approach", *Information Systems and E-Business Management*, vol. 14, n. 2, pp. 293-314.
- RINGLE C.M., WENDE S., BECKER J.M. (2024), *SmartPLS 4*, In Bönningstedt: *SmartPLS*.
- ROEHRICH G. (2004), "Consumer innovativeness: Concepts and measurements", *Journal of Business Research*, vol. 57, n. 6, pp. 671-677.
- SANTOS J.R.A. (1999), "Cronbach's alpha: A tool for assessing the reliability of scales", *Journal of Extension*, vol. 37, n. 2, pp. 1-5.
- SARSTEDT M., RINGLE C.M., HAIR J.F. (2022), "Partial Least Squares Structural Equation Modeling", *Handbook of Market Research*, pp. 587-632.
- SHANMUGAVEL N., MICHEAL M. (2022), "Exploring the marketing related stimuli and personal innovativeness on the purchase intention of electric vehicles through Technology Acceptance Model", *Cleaner Logistics and Supply Chain*, vol. 3, 100029.
- SHEN B., TAN W., GUO J., ZHAO L., QIN P. (2021), "How to Promote User Purchase in Metaverse? A Systematic Literature Review on Consumer Behavior Research and Virtual Commerce Application Design", *Applied Sciences* 2021, vol. 11, 11087.
- SHUKLA A., SHARMA S.K. (2018), "Evaluating Consumers' Adoption of Mobile Technology for Grocery Shopping: An Application of Technology Acceptance Model", *Vision*, vol. 22, n. 2, pp. 185-198.
- SIHI D. (2018), "Home sweet virtual home: The use of virtual and augmented reality technologies in high involvement purchase decisions", *Journal of Research in Interactive Marketing*, vol. 12, n. 4, pp. 398-417.
- STATISTA (2023). *Metaverse: market data & analysis*.
- STEPHENSON N. (1992), *Snow Crash*, 2022nd ed., Mondadori.
- VENKATESH V., MORRIS M.G., DAVIS G.B., DAVIS F.D. (2003), "User Acceptance of Information Technology: Toward a Unified View", *MIS Quarterly*, vol. 27, n. 3, pp. 425-478.
- VENKATESH V., THONG J.Y.L., XU X. (2012), "Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology", *MIS Quarterly: Management Information Systems*, vol. 36, n. 1, pp. 157-178.
- YOO K., WELDEN R., HEWETT K., HAENLEIN M. (2023), "The merchants of meta: A research agenda to understand the future of retailing in the Metaverse", *Journal of Retailing*, vol. 99, n. 2, pp. 173-192.

Word of mouth vs. word of machine: a preliminary analysis

GRAZIANO ABRATE¹ VALERIA FARALLA²

Abstract

The present paper describes an ongoing research project aiming at exploring the managerial implications of integrating Artificial Intelligence (AI) in the analysis of hotel reviews, both textual and numerical. The strategic incorporation of AI technology has seen significant growth across various management domains. In the hospitality sector, the availability of big data also facilitates applications of machine learning in the management of online reviews. This work focuses on the role of the so called “word of machine” as an alternative to the “electronic word of mouth” (eWOM) which has dominated hotel reviews in recent years. To this respect, a large body of literature has demonstrated that consumers use feedbacks from previous users in the form of eWOM because they reduce their uncertainty. At the same time, researchers have disagreed on which eWOM metric is the most influential on consumer behavior and firm sales. In parallel to human-based recommendations, the rapid development and adoption of AI has transformed and is transforming today’s marketplace, where new forms of recommendations based on AI are pervasive.

Building on these premises, the paper proposes a comparison of eWOM and AI based recommendations, namely between numerical ratings given by a consumer in online reviews with the numerical ratings that AI would assign to the textual review provided by the same consumer, contributing to the literature that compares human based recommendations with AI based recommendations. The goal is to shed light on the coherence (or not) between textual and numerical reviews and on the potential of AI tools in predicting human suggestions.

Preliminary findings, based on a pilot sample of 40 hotels in Rome and London, suggest that ChatGPT evaluates customer ratings differently when compared to direct ratings given by the customers in their reviews of hotels, as it is able to predict the exact score only in about one case out of three. Results are consistent across Italian and English languages. Results do not necessarily imply inefficacy of AI assessment, since there could be a bias in how customers represent their text reviews with a rating, leading to over- or underestimation compared to their textual assessments. The ongoing research project includes a second step based on experimental analysis, which may better explore whether such result is due to consumer bias. Moreover, experimental scenarios will allow to study the relative importance of different types of human based and AI based recommendations on consumer preference and purchase intention.

Technology facilitates real-time monitoring of reviews, enabling managers to derive actionable recommendations for optimizing brand positioning and competitiveness. This data-driven approach empowers informed decision-making and enables proactive service management. Furthermore, this paper contributes to the expanding literature on AI applications in industry sectors, offering practical recommendations for all the stakeholders involved.

Key words: artificial intelligence; ChatGPT; online reviews; textual; numerical; hospitality sector

Framing of the research. *Since the advent of the Internet, a large body of literature has been developed around the concept of electronic word of mouth (eWOM), as a web-based evolution of the traditional concept of word of mouth based on oral communication that “provides a mechanism to shift power from companies to consumer” (Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004). Previous research has demonstrated that consumers use feedbacks from previous users in the form of eWOM because they reduce their uncertainty. For example, some studies have focused on the way online reviews affect purchase intention (e.g. Mauri & Minazzi, 2013); other authors have emphasized that better review ratings, by enhancing product reputation, lead to higher price levels (e.g. Abrate & Viglia, 2014). Babic Rosario, Sotgiu, De Valck, & Bijmolt (2016) showed the existence of a positive effect of eWOM on sales in different platform and product contexts, by providing a comprehensive meta-analysis covering 96 previous empirical studies. At the same time, they emphasize that eWOM has been proxied by different metrics in empirical analysis, and researchers have disagreed on which metric is the most influential. Moreover, while several analyses used numerical data (such as review ratings, and/or volume), other authors have highlighted the role of text (as well as other forms of user generated contents). Ghose & Ipeirotis (2010) analyzed the importance of text style, in terms of subjectivity, informativeness, readability, and linguistic correctness. Hu, Koh, & Reddy (2014) emphasizes the role of online review sentiment, suggesting that numerical ratings*

¹ University of Piemonte Orientale
e-mail: graziano.abrate@uniupo.it

² University of Piemonte Orientale
e-mail: valeria.faralla@uniupo.it

may not always be consistent with text sentiments and a sequential decision-making process may better describe the impact of numerical and textual components of reviews. The recognized impact of eWOM on firm's performance also stimulated research regarding online reputation management strategies. According to Proserpio & Zervas (2017), the practice of publicly responding to consumer reviews has emerged as a popular reputation management strategy, which can positively impact of review ratings at the cost of fewer but more detailed negative feedbacks. This implies a trade-off for managers: by responding they can expect to prevent some users to leave a negative review (with the result of inducing a higher average rating), but some users will be even more motivated to leave longer and detailed negative reviews because they know that their reviews will be read and examined. The way eWOM is evolving in modern marketplace has been recently investigated also in a special issue of the *Journal of Business Research* (Liu, Jayawardhena, Shukla, Osburg, Yoganathan, 2024).

In parallel to human-based recommendations, either in the form of traditional or electronic word of mouth, the rapid development and adoption of artificial intelligence (AI) has transformed and is transforming today's marketplace, where new forms of recommendations based on AI are pervasive. Longoni & Cian (2022) have introduced the term "word of machine", providing evidence that people believe AI recommenders are more (less) competent than human recommenders to assess utilitarian (hedonic) attribute value, and, as a consequence, "individuals are more (less) likely to choose AI recommenders when utilitarian (hedonic) attributes are important or salient" (Longoni & Cian, p. 92). They also stress that such word of machine effect depends on beliefs that do not necessarily correspond to the reality: humans are not necessarily less competent than AI at assessing utilitarian attributes, neither AI is necessarily less competent than humans at evaluating hedonic attributes. Similarly, Chen, Li, Liu, & Wang (2023) have focused their analysis on the effectiveness of AI chatbot in the context of purchasing search vs. experience products. Their findings highlight that AI chatbot can trigger higher purchase intention than human in the context of search products, while the opposite happens in the case of experience products.

Additional related literature includes the work of Hernández Ortega & Lucia-Palacios (2023), who introduced the term "word of voice" by exploring the role of smart voice assistants (SVAs) as purchase recommenders. Furthermore, Paul, Ueno, & Dennis (2023) have discussed the multidimensional benefits and potential pitfalls of using AI based on Chat Generative Pre-trained Transformer (ChatGPT). Resistance to the use of algorithm advice is well documented in the context of human resource selection, even if they are helpful to make better decisions (Rabinovitch, Budescu, & Meyer, 2024), as well as in healthcare services (Zhang, Tan, & Lee, 2024). Hollebeek, Menidjel, Sarstedt, Jansson, & Urbonavicius (2024) also explored the impact of AI on consumer engagement.

Overall, the comparison between human and AI recommendations and, more in general, the way consumers and AI interact, has opened a new intriguing stream of research, calling for novel cross-disciplinary theoretical approaches and methodologies (Pentina, Xie, Hancock, & Bailey, 2023).

Purpose of the paper. The ongoing research project described in this paper stems from the goal of comparing the way different form of human and AI-based recommendations may influence consumer behavior. The research focuses on the hospitality sector, where both utilitarian and hedonic values are recognized as important in travelers' assessments (Kim, Kim, Jhang, Doust, Chan, & Badu-Baiden, 2023), the use of eWOM is well established and a large amount of data is easily available through online platforms (such as, for example, TripAdvisor, booking.com). In particular, the research involves (at least) two steps:

- the first step is based on secondary data collection and focuses on the comparison between textual and numerical components of eWOM and on the efficacy of AI in predicting the numerical ratings from a textual input. Such research aims at establish, on the one hand, the coherence (or not) between textual and numerical reviews, and on the other hand, the potential of AI tools in predicting human suggestions. Apart from investigating the average consistency of textual and numerical contents, the research also aims at exploring which factors can affect AI prediction errors.
- the second step is based on experimental analysis, and aims at establishing the relative importance of different types of information on consumer behavior (textual vs. numerical components of online reviews and human-based online reviews vs. online reviews derived from AI tools).

The present manuscript focuses on the first step, describing some preliminary evidence based on a pilot sample. The main purpose of this paper is to investigate the impact of AI-driven review analysis on hotel management practices and, more generally, decision-making processes. Additionally, the study aims to assess the potential benefits and best practices associated with integrating artificial intelligence tools, such as ChatGPT, into the analysis of reviews within hotel management. This investigation is closely tied to customer relationship management within the hospitality industry.

Methodology. The dataset was obtained from booking.com, a widely used online hotel reservation platform known for its extensive collection of hotel listings, customer reviews, and user ratings worldwide. Ten customer reviews and respective ratings were selected for 20 three- and 20 four-star hotels. Half of the hotels were in Rome and the other half in London. We chose Rome and London because they are prominent cities and wanted to evaluate ChatGPT recommendations for Italian, our mother language, and English, a global language. For Rome, we selected reviews based on top choices, Italian language, and most recent reviews. For London, we selected reviews based on top choices, English language, and most recent reviews. Given that the reviews on booking.com include both a positive and negative textbox, we selected cases where the reviewer filled in both positive and negative comments. Hotels with insufficient reviews were excluded from the database.

The database was created using a three-step process. First, we included the 400 textual and numerical reviews by Booking.com customers. Then, we provided ChatGPT with the text reviews of the hotels and asked it to assign a numerical rating from 1 to 10 (where 1 is negative and 10 is positive) based on the content of each review. Third, we provided

ChatGPT with the textual reviews for each hotel, consisting of 10 reviews per hotel, and requested it to generate a concise summary within a 400-character limit for each hotel.

The textual (summary) reviews generated by ChatGPT are intended for use in an experiment where a sample will evaluate the hotel recommendations produced by ChatGPT. These reviews are not included in the present report but will be used in a subsequent laboratory experiment. This study is indeed an ongoing research project. The design of the laboratory experiment will comprise two treatments. In both treatments, participants will receive a textual and a numerical review, obtained from ChatGPT, for each of the 20 hotels (Italian and English languages will continue to be separately tested). Specifically, the summary review for each hotel will serve as textual review, while the average rating (from 1 to 10) assigned by ChatGPT (based on the ratings provided by ten customers on Booking.com for each hotel) will be considered as the numerical review. However, in one of the two treatments, subjects will be specifically informed that the reviews were generated by an Artificial Intelligence, namely ChatGPT, while the other treatment will not provide this information. A pre-registration of the study design will be conducted to ensure transparency and consistency in the experimental procedure.

We utilised ChatGPT3.5 for this task (accessed in February 2024). ChatGPT-3.5, as defined by itself, “is a variant of the GPT-3 (Generative Pre-trained Transformer 3) model developed by OpenAI. GPT-3.5 is an advanced language model capable of generating human-like text based on the input it receives. It builds upon the architecture and capabilities of its predecessor, GPT-3, with improvements in various aspects such as language understanding, coherence, and generation of contextually relevant responses”. Also, “ChatGPT-3.5, like its predecessor GPT-3, is based on a transformer architecture. Transformer models have revolutionized natural language processing (NLP) tasks by their ability to capture long-range dependencies in text data efficiently. The transformer architecture relies heavily on attention mechanisms, allowing the model to weigh the importance of different words or tokens in a sequence when processing input data. This enables the model to capture complex patterns and dependencies within the text, making it particularly effective for tasks such as language understanding, text generation, and translation. GPT-3.5, being based on this transformer architecture, inherits its capabilities and improvements from advancements made in the field of deep learning and NLP. The model is trained using a massive amount of text data, enabling it to learn rich representations of language and produce coherent and contextually relevant responses to a wide range of input prompts.”

Preliminary results. The mean rating estimated by ChatGPT for Rome hotels was 6.81 (sd = 1.32, min = 2, max = 9, median value = 7), whereas for customer ratings, the average value was 7.51 (sd = 1.90, min = 1, max = 10, median value = 8). ChatGPT rating is lower by about one percentage point ($p < .001$; Mann-Whitney U test).

For London, ChatGPT mean rating was 6.58 (sd = 1.57, min = 1, max = 10, median = 7), whereas customer mean rating was 7.57 (sd = 1.82, min = 1, max = 10, median = 8). Again, the difference was around one percentage point in the same direction ($p < .001$), indicating a certain consistency between the two language sets.

Also, 28% of customer ratings corresponded to ChatGPT ratings for Rome (56 out of 200; $p < .001$; one proportion z-test against 50–50 expected distribution). This percentage lowered to 23.5% (47 out of 200) for London ($p < .001$). This suggests that ChatGPT is able to precisely predict customer ratings from the text of reviews in about 1/3 of the cases.

The next step of the research is extending the dataset to explore if results remain consistent and to investigate the factors affecting the degree of AI prediction errors.

Overall, these preliminary findings suggest that ChatGPT evaluates customer ratings differently when compared to direct ratings given by the customers in their reviews of hotels. In both language sets, ChatGPT tends to assign lower ratings, and the difference is significant. This raises the possibility that ChatGPT may have difficulty interpreting customer text reviews accurately. However, the result might also highlight the presence of a bias in how customers represent their text reviews with a rating, leading to over- or underestimation compared to their textual assessments (Kahneman, 2012). This should be investigated further in future research.

Research limitations. The first premise is that the study is in a very preliminary phase, and the results here presented are obtained with reference to a small sample of data. ChatGPT did not systematically provide the same rating during data collection when given the same review. We have decided to take the first rating provided for consistency. Additionally, we have observed differences in ratings obtained in February compared to attempts made with a few reviews in December. The model's training data could influence this. Furthermore, when asked to summarise within the 400-character limit, ChatGPT did not always consistently adhere to the limit. On a few occasions, it happened that after repeated requests to respect the limit, ChatGPT froze and repeated the same statement without adhering to the limits. At the same time, potential risks associated with ethical and privacy considerations related to the use of AI technology can be considered as well.

Managerial implications. The managerial implications are primarily concerned with the use of AI in the area of online reputation management. AI provides a powerful tool that can assist hotel managers in identifying trends and patterns in guest preferences, thereby providing valuable insights to prioritize areas for improvement with the ultimate goal of improving guest satisfaction and business performance. For example, AI can help to classify and rank reviews not only by means of numerical scores, but also by textual contents, as the two dimensions might not always be coherent. Overall, this can improve the ability of hotel managers in profiling different groups of reviewers and customers.

At an aggregated level, online review platforms (such as booking.com) may consider to complement the information regarding average numerical scores with short textual summaries of reviews, generated by AI from an overall content analysis of the various reviews. To this end, AI's ability to analyze large volumes of reviews in real-time would be critical

in facilitating prompt adjustments and improvements. Moreover, it is important to understand if customers would trust such AI based recommendation.

Since the analyzed case study concerns the hospitality sector, implications are intended to hotel managers and operators, but might as well extend to other products and e-commerce platforms.

Originality of the paper. The paper proposes a comparison of numerical ratings given by a consumer in online reviews with the numerical ratings that AI would assign to the textual review provided by the same consumer. First, this allows to explore the relationship, and the coherence, between two dimensions of eWOM (textual and numerical) that have been often analyzed separately in previous literature. Second, by employing AI such as ChatGPT to predict the score of human textual comments, this work fits into the recent strand of the literature that compares human based recommendations with AI based recommendations. To this extent, the findings are the basis for a second step of the project, that will complement the current analysis with an experimental approach focusing on the way different types and dimensions of recommendations are perceived and used by individuals during their decision-making process.

References

- ABRATE G., VIGLIA G. (2014), "Reputazione e monitoraggio della competizione in tempo reale: le sfide innovative del pricing online (Reputation and monitoring of the competition in real time: the innovative challenges of online pricing)", *Sinergie Italian Journal of Management*, vol. 32, n. Jan-Apr, pp. 35-53.
- BABIĆ ROSARIO A., SOTGIU F., DE VALCK K., BIJMOLT T. H. (2016), "The effect of electronic word of mouth on sales: A meta-analytic review of platform, product, and metric factors", *Journal of marketing research*, vol. 53, n. 3, pp. 297-318.
- CHEN S., LI X., LIU K., WANG X. (2023), "Chatbot or human? The impact of online customer service on consumers' purchase intentions", *Psychology & Marketing*, vol. 40, n. 11, pp. 2186-2200.
- GHOSE A., IPEIROTIS P.G. (2010), "Estimating the helpfulness and economic impact of product reviews: Mining text and reviewer characteristics", *IEEE transactions on knowledge and data engineering*, vol. 23, n. 10, pp. 1498-1512.
- HENNIG-THURAU T., GWINNER K.P., WALSH G., GREMLER D.D. (2004), "Electronic word-of-mouth via consumer-opinion platforms: what motivates consumers to articulate themselves on the internet?", *Journal of interactive marketing*, vol. 18, n. 1, pp. 38-52.
- HERNÁNDEZ ORTEGA B.I., LUCIA-PALACIOS L. (2023), "Trust in word of voice communication: why consumers adhere to purchase recommendations made by smart voice assistants", *Marketing Intelligence & Planning*, vol. 41, n. 8, pp. 1093-1120.
- HOLLEBEEK L.D., MENIDJEL C., SARSTEDT M., JANSSON J., URBONAVICIUS S. (2024), "Engaging consumers through artificially intelligent technologies: Systematic review, conceptual model, and further research", *Psychology & Marketing*, vol. 41, pp. 880-898.
- HU N., KOH N.S., REDDY S.K. (2014), "Ratings lead you to the product, reviews help you clinch it? The mediating role of online review sentiments on product sales", *Decision support systems*, vol. 57, pp. 42-53.
- KAHNEMAN D. (2012), *Thinking, Fast and Slow*, Penguin Books, London, UK.
- KIM J., KIM S.S., JHANG J., DOUST N.A.S., CHAN R.Y., BADU-BAIDEN F. (2023), "Preference for utilitarian or hedonic value options during a pandemic crisis: The moderation effects of childhood socioeconomic status and sensation-seeking", *International Journal of Hospitality Management*, vol. 110, 103427.
- LIU H., JAYAWARDHENA C., SHUKLA P., OSBURG V.S., YOGANATHAN V. (2024), "Electronic word of mouth 2.0 (eWOM 2.0)—The evolution of eWOM research in the new age", *Journal of Business Research*, vol. 176, 114587.
- LONGONI C., CIAN L. (2022), "Artificial intelligence in utilitarian vs. hedonic contexts: The "word-of-machine" effect", *Journal of Marketing*, vol. 86, n. 1, pp. 91-108.
- MAURI A.G., MINAZZI R. (2013), "Web reviews influence on expectations and purchasing intentions of hotel potential customers", *International journal of hospitality management*, vol. 34, pp. 99-107.
- PAUL J., UENO A., DENNIS C. (2023), "ChatGPT and consumers: Benefits, pitfalls and future research agenda", *International Journal of Consumer Studies*, vol. 47, n. 4, pp. 1213-1225.
- PROSERPIO D., ZERVAS G. (2017), "Online reputation management: Estimating the impact of management responses on consumer reviews", *Marketing Science*, vol. 36, n. 5, pp. 645-665.
- PENTINA I., XIE T., HANCOCK T., BAILEY A. (2023), "Consumer-machine relationships in the age of artificial intelligence: Systematic literature review and research directions", *Psychology & Marketing*, vol. 40, n. 8, pp. 1593-1614.
- RABINOVITCH H., BUDESCU D.V., MEYER Y.B. (2024), "Algorithms in selection decisions: Effective, but unappreciated", *Journal of Behavioral Decision Making*, vol. 37, n. 2, e2368.
- ZHANG Y., TAN W., LEE E.J. (2024), "Consumers' responses to personalized service from medical artificial intelligence and human doctors", *Psychology & Marketing*, vol. 41, n. 1, pp. 118-133.

Promoting (un)conscious purchasing behaviors and choices in favor of sustainability

SILVIA BELLINI¹ CHIARA BACCHILEGA² DAVIDE PELLEGRINI³ SIMONE AIOLFI⁴

Abstract

Proposing itself with a deliberately provocative title, this work intends to understand what are the most effective actions to transform sustainable choices into consolidated habits, paradoxically "unconscious", i.e. automatic, without cognitive effort or sacrifice. Sustainability is investigated through an interpretation linked to the behavior of demand, starting from the basic assumption that without an active contribution from demand, the efforts made by companies could be in vain. In order to play an active role, however, it is essential that consumers are enabled to access a sustainable offer, especially in the points of sale where consumption choices translate into behaviours. The connection between intentions and actions, however, is not at all obvious when talking about complex choices for which willpower alone is not sufficient. This is why we resort to "nudging", the gentle push which through the information architecture and the structure of choice helps the individual to make sustainable choices effortlessly, reducing the gap between "saying" and "doing". Measuring this gap and starting a strategic reflection on the most effective tools to promote sustainable choices and behaviors are the specific objectives of this work.

Keywords: sustainability; shopper marketing; conscious purchases; nudging; choice architecture.

Framework of the research. Many issues related to globalization has brought sustainability to the forefront of 21st-century discourse (Schaefer & Crane, 2005). The term "sustainability" began to appear in academia in the 1980s, but has evolved considerably since then (Portney, 2015): initially used to exclusively identify the scarcity of natural resources (Kuhlman & Farrington, 2010), it has now expanded to three pillars: social, economic, and environmental sustainability (Purvis et al., 2018). Despite sustainability being one of the main objectives pursued by the United Nations through the creation of the Sustainable Development Goals (SDGs) (Whittingham et al., 2023), the efforts made to achieve these objectives are insufficient (United Nations, 2023). Several authors (Sheth et al., 2011) have considered the responsible behavior of individuals as a powerful driver of sustainable development and even though consumers look for companies that reflect their values (Anuradha et al., 2023), few opt for more sustainable behaviors, especially if they have to pay higher prices or accept reduced performance (Olson, 2013). For this reason, companies have begun to employ marketing strategies that encourage consumers to make sustainable choices (Anuradha et al., 2023).

Given that improving consumer behavior involves targeted interventions in points of sale (Wansink, 2017), the latter become fertile ground for industrial and commercial companies to use shopper marketing levers in a sustainable manner to push shopping choices towards products that have a positive impact on both people and the planet. From this perspective, shopper marketing, defined as a set of actions aimed at influencing the individual during his decision-making process (Shankar, 2011), has social value when directed towards promoting conscious and sustainable consumption choices (Bellini, 2023). Including the path-to-purchase in interventions that support health confirms the centrality of the distributor and accredits the point of sale as a context dedicated to value creation (Yoder et al., 2021). The effectiveness of this approach, however, is by no means expected as it presumes a paradigm shift where the ratio of traditional economics co-exists with the principles of behavioral economics borrowed from cognitive psychology and neuroscience.

Sustainable choices are not easy to make nor, above all, to carry on stably in the long term as they require a cognitive effort that eludes conscious control and surrenders in the face of a willpower that is by definition not inexhaustible. Behavioral economics tools are useful in these situations as they can better grasp the mental mechanisms that regulate the decision-making process and guide individuals towards solutions that enhance their well-being, both individually and collectively.

¹ University of Parma
e-mail: silvia.bellini@unipr.it

² University of Parma
e-mail: chiara.bacchilega@unipr.it

³ University of Parma
e-mail: davide.pellegrini@unipr.it

⁴ University of Parma
e-mail: simone.aiolfi@unipr.it

In this context, the promotion of sustainable behaviors is increasingly a key area of application for nudging (Bergram et al., 2022). Nudging, defined by Thaler and Sunstein (2008) as “any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives” originates from the concept according to 95% of the choices made daily are not rational (Bargh et al., 2001; Caraban et al., 2019), but the result of the application of heuristics and mental shortcuts that support the decisions making by reducing the necessary efforts to process information (Shah & Oppenheimer, 2018; Caraban et al., 2019). The literature on the application of nudging in the field of sustainability is expanding (Mont et al., 2014; Lehner et al., 2016; Trewern et al., 2021; Mirbabaie et al., 2022) and nudges are increasingly recognized as important and effective tools for promoting society's sustainable behaviors. Despite some limitations, their advantages appear to outweigh those of traditional marketing strategies (Gonçalves et al., 2021).

The effectiveness of nudging for sustainability has its roots in the “intertemporal” nature of sustainable choices (Thaler & Sunstein, 2008). Many sustainable behaviors require a sacrifice today in exchange for a future benefit, which is not guaranteed and may not necessarily fall within an individual's sphere. The misalignment between (individual) sacrifices and (collective) benefits, together with the absence of immediate feedback, makes sustainable choices difficult to make and often constitutes a disincentive to long-term stability. Nudging can best demonstrate its effectiveness in this area since it acts on individuals' emotions, which are more reactive in such situations where willpower is reduced due to uncertainty and difficulty in quantifying personal return.

The existence of a gap between 'intentions' and 'behaviors' (Sheeran & Webb, 2016) highlights the volatility of willpower and the necessity of nudges to guide individuals towards “unconsciously” preferring more sustainable options. The ultimate goal of nudging is to ensure that socially optimal choices are made effortlessly and gradually transform into consolidated habits. This should also be the final goal of companies that must promote “gentle nudges” towards their shoppers in points of sale.

Purpose of the paper. This work intends to measure the ability of retailers to effectively promote sustainable behavior on the demand front, starting from the hypothesis that, if a retailer is a “good nudger”, its customers will have a reduced intention-behavior gap, i.e. it will be composed of aware individuals who declare to and buy sustainable. Through the analysis of the sustainable profile of consumers, we will therefore try to understand to what extent the points of sale and shopper marketing strategies used in a “nudging” optic impact on sustainable choices and contribute to reducing the intention-behavior gap. The underlying reflection, which inspires the entire research path, is to understand what factors stimulate sustainable purchasing choices and how such choices, repeated over time, can turn into sustainable behaviors in favor of the planet and people, even outside the shopping context.

Methodology. Investigating sustainability is a complex methodological challenge as it requires the a priori identification of criteria and parameters useful for defining what is sustainable from the point of view of the demand and businesses. We land on a ground that is undergoing profound transformations, also from a regulatory point of view, which does not yet have a defined border or standard languages. In order to employ a methodology that is as robust as possible and based on objective elements, we relied on the NielsenIQ (NIQ) databases from which we obtained timely and statistically significant information both on the demand front, through the Consumer Panel, and on the offer front, through Retailer Measurement Service (RMS) data which will help us interpret the insights collected from interviews administered to retailers. The research therefore develops along two tracks.

On the **demand side**, consumers are mapped based on their sustainable purchasing behavior using socio-demographic, attitudinal, and behavioral profiling. The Consumer Panel (CP) of NielsenIQ (NIQ) is used as a tool to collect information from syndicated surveys and data on the real purchasing behavior of sustainable products, measured through the classification of the Imagino database (NielsenIQ and GS1 Italy). The panel gathers data from more than 9,000 families, which are representative of the Italian population and are periodically interviewed about their socio-demographic characteristics and actual purchasing behavior. The interviews, conducted through the panel, enable the collection of data solely related to the topic of interest, following a ‘single source’ approach. This means that the families who answer the questionnaires are the same ones who record their purchases. In this way, panelists can be segmented using socio-demographic variables, based on their actual purchasing behavior (and not declared), and on their declared attitudes.

For the purposes of this research, the segmentation on the CP classifies families according to two parameters:

- what they claim to do in general with respect to sustainability (dimension of “saying” - intentions), identified through a set of specific questions aimed at measuring the attitude towards different areas of individual (nutrition), social (community and territories) and environmental well-being;
- what they buy, identified through the share of products in their cart with a specific set of attributes related to sustainability (dimension of “doing” - behaviors).

Individuals are measured based on their purchasing behavior of sustainable baskets. These baskets are identified by NIQ through the selection of products that convey the three specific declinations of sustainability: individual well-being, environmental well-being, and social well-being.

The analysis of the demand will be complemented by an **analysis of the supply** through the administration of a structured questionnaire aimed at mapping the “sustainable” profile of retailers based on shopper marketing actions aimed at promoting conscious purchases and behaviors in the areas of individual, social and environmental well-being. Specifically, each company will be studied with respect to:

- corporate governance (commitment and disclosure)

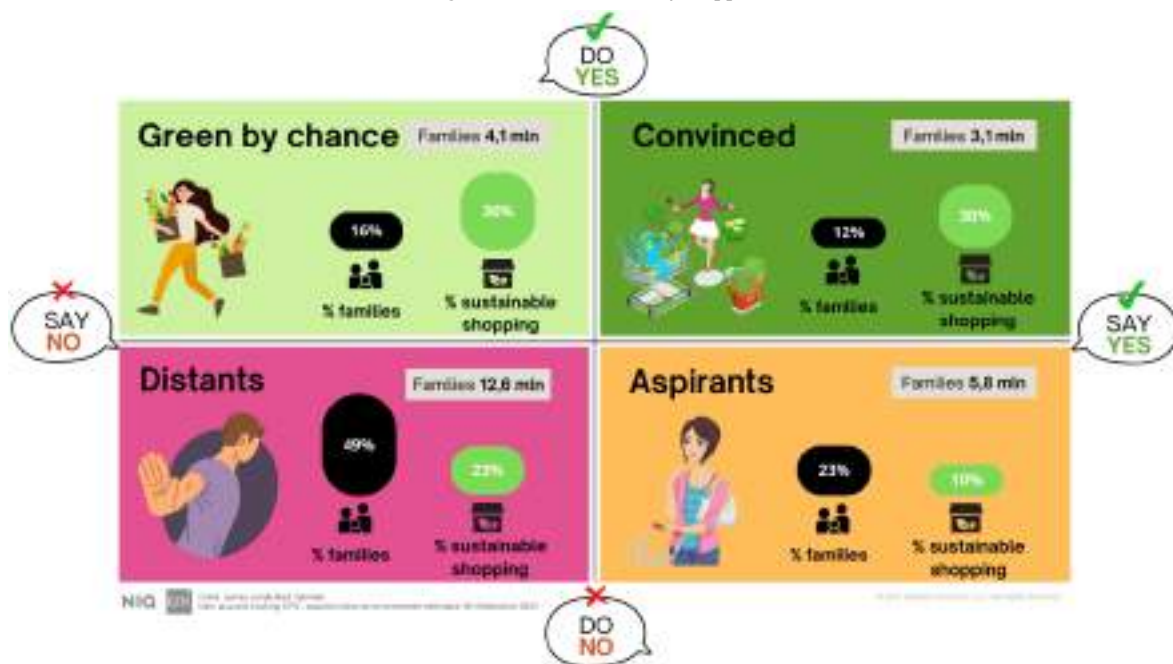
- «conscious shopper marketing» actions divided by touch point (assortment, packaging, prices and promotions, space, communication in and out of store, loyalty program), with related performances and measures.

What companies declare through the questionnaire will then be integrated and compared with the study of the performance of the distribution brands in regards of the sustainable baskets identified. Through NIQ's Retailer Measurement Service, data will be obtained on the sustainable baskets of 45 Italian brands in relation to assortment, sales, and promotional impact.

The intersection between the analysis of demand and the analysis of the supply allows us to understand if there is a correlation between the sustainable profile of consumers and the distribution performance of the brands in terms of sustainable baskets. In other words, it investigates whether the presence of clusters of virtuous consumers is also a result of retailers' commitment to making sustainable options available and accessible.

Preliminary results This work presents the results of the first phase of the research, which analyzed the demand, as data collection for the analysis of the supply is currently on-going. The NielsenIQ Consumer Panel was questioned regarding the dimension of “saying” (attitude towards sustainability and intentions to purchase sustainable products) and “doing” (actual purchase of sustainable products), resulting in the identification of four clusters of shoppers (Figure 1).

Figure 1: Four clusters of shoppers



Source: Authors' elaboration based on NIQ data

The upper part of the matrix displays two clusters, namely 'green by chance' and 'convinced', which represent families that purchase sustainable products (“they do yes”), but with a different level of awareness. While the “convinced” cluster reflects intentional purchases, the “greens by chance” cluster seems to make sustainable purchases unintentionally. It is interesting to understand what stimulates this behavior which we could define as “unconscious”. The two clusters located in the lower part of the matrix (“distant” and “aspirants”) incidentally purchase sustainable products but for different reasons. The “distant” do it by choice: they do not believe so strongly in sustainability and consequently their contribution to sustainable spending is modest. The “aspirants”, on the other hand, would like to be able to buy more sustainable products, but they don't and it's interesting to understand the reasons.

Socio-demographic and behavioral data resulting from the Consumer Panel allow us to delve deeper into the reasons underlying the sustainable profile of the clusters and to draw useful indications to guide the strategies of the companies interested in operating the levers of shopper marketing to promote conscious purchases at the point of sale. Our attention is initially directed towards the most contradictory clusters, namely the “aspirants” and the “green by chance”, where there is a discrepancy between intentions and behavior.

“**Aspirants**” undoubtedly represent the segment of greatest interest for companies given their unexpressed potential. We are talking about 5.8 million families, equal to 23% of the Italian population, which only account for 10% of sustainable spending, despite the declared sensitivity towards sustainability.

If we deeper analyze the behavioral profile of the “aspirants”, we find some of the reasons that explain their positioning. The cluster is composed by families who pay great attention to prices and promotions but are also attracted by the aesthetic stimuli in point of sale and by novelties, sensitive to industrial brands, preferably local ones. They inform

themselves and are attentive to what they eat, they seek simplicity and freshness through supply chain and production guarantees, their food spending tends to be basic and mainstream.

What could be the most effective shopper marketing levers to activate this cluster? Prices and promotions should certainly not be underestimated, but within the context of a rich and captivating offer and an engaging shopping experience. Investigating the barriers to purchase of "aspirants" is therefore fundamental to understand which shopper marketing levers to use to engage this target and to being able to translate "good intentions" into "good behavior".

The "**greens by chance**" represent an equally curious target to seek for the reasons behind their "unconscious" sustainable purchases. Represented by 4.1 million Italian families, equal to 16% of the population, they contribute to 36% of the overall sales volume of sustainable shopping, a percentage that exceeds that of the "convinced". The Consumer Panel frames it as a rational and dynamic target, which distances itself from "green" behaviors, attentive to the quality of the products, regardless of sustainability certifications. They purchase premium products with high added value, selecting plant-based alternatives, healthy and few indulgent products. Their "sustainable" cart therefore seems to be more justified by the search for nutritional quality, therefore, not necessarily sustainable products in terms of packaging or processes. Individual well-being prevails over environmental well-being, which is why they are weaker in terms of interests and declarations. Since this is a rational target looking for practicality, they opt for points of sale with a quality but also convenient offer and seem willing to sacrifice the sustainability of the packaging for better quality and use of the product itself. It is therefore not surprising that they are good customers of the e-commerce channel.

The "**convinced**" represent the ideal target of all companies: individuals who approach sustainability in a conscious manner and also do so in their purchasing choices. They still constitute a modest portion of the Italian population (12% of Italian families, equal to 3.1 million families) but their contribution to the total amount of sustainable spending is substantial (30%). From the analysis of the Consumer Panel data, a rational profile emerges, which addresses spending in a prudent manner but at the same time open to exploration and impulse. Oriented towards a balanced diet, they seek premium products with a high service component, in fact in their cart they have many plant-based alternatives, few indulgent products and favor products with sustainable packaging. Sensitivity towards environmental well-being is the element that distinguishes them from the previous cluster, which on the contrary is more focused on individual well-being mainly limited to the world of nutrition.

Finally, the last cluster, the "**distant**" ones, constitute the ground on which all companies should work: 12.6 million families, almost half (49%) of the Italian population, who follow a lifestyle and food style that do not prioritize individual and environmental well-being. More attentive to saving money compared to the nutritional quality of the products, they declare themselves unwilling to pay a premium price for sustainable products. Given the large number of this target and the negligible impact on sustainable spending (23%), they certainly cannot be ignored by companies who must ask themselves how to intercept them to educate them about sustainability and make them more aware of the impact of their purchasing choices on the environment and the society. It certainly won't be a quick path nor a feasible path through just the shopper marketing levers. Observing the distribution realities where this target has a smaller presence will certainly help to identify the most effective governance models and strategies to reduce the size of the cluster.

The analysis of demand reveals a reflection on the role of shopping places in this context. Specifically, we question to what extent the points of sale where consumers shop for groceries can influence the "doing" dimension, in consideration of the role that distributors assume in consumption and purchasing choices and the ability to influence shopper marketing levers (Shankar 2021, Bellini 2023).

The analysis conducted through the Consumer Panel enables us to identify the preferred purchasing channels for each target audience, as well as the stores they habitually frequent for grocery shopping. This information, when integrated with the analysis of the offer, helps us to answer the previous question and to get closer to the ultimate objective of the study: understanding the most effective strategies to promote sustainable purchases in retail stores.

Currently, while awaiting the results of ongoing research, we offer a few reflections. For instance, when considering the "green by chance" cluster, it is worth reflecting on whether sustainable purchases are encouraged by the retailer they choose. Consumers may unconsciously purchase sustainable products due to their familiarity with accessing a commercial offer that includes sustainable options, which are often promoted through shopper marketing techniques such as display space, prices, and promotions.

Equally interesting is the profile of the "aspirants", those who would like to buy sustainable but don't. The reasons could be linked to socio-cultural factors (e.g. low income, poor culture, and attention to sustainability) but also to barriers on the supply side. For example, they could frequent stores that do not have an adequate or accessible assortment of sustainable products in terms of economic convenience.

A similar argument can be made about the "distant" cluster, for whom however a cultural obstacle must first be removed which makes them not very sensitive and motivated towards the purchase of sustainable products. Certainly, on these targets the levers of price and promotions could take on a greater importance than the targets of the "convinced" and "green by chance", for whom it might instead be more appropriate to work on the attractiveness of the offer and on its in-store valorization.

In summary, examining the profiles of the four clusters enables us to identify the most effective shopper marketing levers to engage with individuals based on their attitudes ("saying") and behaviors ("doing"). This is an essential condition for companies who wish to undertake a path of "conscious shopper marketing".

Research limitations. The present study is not limitations-free. Firstly, it is an ongoing research, so the results should be considered preliminary. Additionally, difficulties were encountered during the compilation of the self-assessment questionnaire of the retailers' sustainable profile, due to the lack of an evaluation system and a commonly recognized language shared by the participants. Finally, this study is an initial and exploratory part of a larger project. The research will be repeated annually to mitigate the current limitations and identify a language that is not only shared by project participants but also functional for drafting sustainability balance sheets according to new regulations. Finally, monitoring demand behavior over time can help to eliminate cyclical elements from the results and provide valuable insights for management.

Managerial implications This study presents important findings to guide companies in developing sustainable strategies and practices. It also addresses the preparation of social balance sheets, which will be mandatory from 2026 for companies with a turnover exceeding 50 million euros and will have to include a section dedicated to “consumers and end users”.

It is only by starting from the knowledge of the demand and its consumption and purchasing behavior that it is possible to understand what the most effective actions are to engage with individuals and make them a driver of sustainability alongside businesses. The mapping of the demand presented in this study allows companies to understand the profile of their shoppers and consequently identify the marketing levers to activate based on the target segment they intend to address. Actions aimed at stimulating sustainable shopper behavior can become a field of shared action between industry and distribution, in the perspective of a pre-competitive vision of sustainability.

The study's relevance is not only strategic; numerous studies highlight a direct correlation between companies' economic performance and their commitment to sustainability. Furthermore, the ability to stimulate actions that generate a positive impact for individuals, society, and the environment is crucial in supporting the social role of the fast-moving consumer goods supply chain. Additionally, these results may be of great interest to institutions and public policies aimed at promoting societal and national well-being.

Originality of the paper. To the best of the authors' knowledge, this research is the first attempt to segment demand in terms of sustainability based on the variables of “intention” (the dimension of “saying”) and actual behavior (the dimension of “doing”). This attempt was made possible by the use of NielsenIQ databases (Consumer Panel and RMS), which provide objective measures and allow us to overcome the accuracy limits of previous studies based on self-assessment and self-reporting systems. Additionally, this study offers a unique perspective on sustainability for two main reasons. Firstly, it examines the phenomenon from a demand perspective, which sets it apart from most studies that focus on supply and production processes. Secondly, it analyses marketing tools that are used to stimulate demand using behavioral economics frameworks. The application of nudging in shopper marketing to encourage sustainable consumption and purchasing behavior is a relatively unexplored area of research. However, the writers believe that it holds enormous potential on the managerial, social, and institutional fronts.

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References

- ANURADHA A., SHILPA R., THIRUPATHI M., PADMAPRIYA S., SUPRAMANIAM G., BOOSHAN B., THANGAM D. (2023), “Importance of Sustainable Marketing Initiatives for Supporting the Sustainable Development Goals”, In *Handbook of Research on Achieving Sustainable Development Goals With Sustainable Marketing*, pp. 149-169.
- BARGH J.A., GOLLWITZER P.M., LEE-CHAI A., BARNDOLLAR K., TRÖTSCHER R. (2001), “The automated will: nonconscious activation and pursuit of behavioral goals”, *Journal of personality and social psychology*, vol. 81 n. 6, p. 1014.
- BELLINI S. (2023), (Sweet) Marketing for Conscious Shopping.
- BERGRAM K., DJOKOVIC M., BEZENÇON V., HOLZER A. (2022), “The digital landscape of nudging: A systematic literature review of empirical research on digital nudges”, In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems*, pp. 1-16.
- CARABAN A., KARAPANOS E., GONÇALVES D., CAMPOS P. (2019), “23 ways to nudge: A review of technology-mediated nudging in human-computer interaction”, in *Proceedings of the 2019 CHI conference on human factors in computing systems*, pp. 1-15.
- GONÇALVES D., COELHO P., MARTINEZ L.F., MONTEIRO P. (2021), “Nudging consumers toward healthier food choices: A field study on the effect of social norms”, *Sustainability*, vol.13, n.4.
- KUHLMAN T., FARRINGTON J. (2010), “What is sustainability?”, *Sustainability*, vol. 2, n.11, pp. 3436-3448.

- LEHNER M., MONT O., HEISKANEN E. (2016), "Nudging-A promising tool for sustainable consumption behaviour?", *Journal of cleaner production*, vol. 134, pp. 166-177.
- MIRBABAIE M., MARX J., GERMIES J. (2022), Conscious Commerce--Digital Nudging and Sustainable E-commerce Purchase Decisions.
- MONT O., LEHNER M., HEISKANEN E. (2014), *Nudging: A tool for sustainable behaviour?*.
- OLSON E.L. (2013), "It's not easy being green: the effects of attribute tradeoffs on green product preference and choice", *Journal of the Academy of Marketing Science*, vol. 41, pp. 171-184.
- PORTNEY K.E. (2015), *Sustainability*, MIT Press.
- PURVIS B., MAO Y., ROBINSON D. (2019), "Three pillars of sustainability: in search of conceptual origins", *Sustainability science*, vol. 14, pp. 681-695.
- SCHAEFER A., CRANE A. (2005), "Addressing sustainability and consumption", *Journal of macromarketing*, vol. 25, n. 1, pp. 76-92.
- SHAH A.K., OPPENHEIMER D.M. (2008), "Heuristics made easy: an effort-reduction framework", *Psychological bulletin*, vol. 134, n. 2, pp. 207.
- SHANKAR V. (2011), *Shopper marketing*, Cambridge, MA: Marketing Science Institute.
- SHEERAN P., WEBB T.L. (2016), "The intention-behavior gap", *Social and personality psychology compass*, vol. 10, n. 9, pp. 503-518.
- SHETH J.N., SETHIA N.K., SRINIVAS S. (2011), "Mindful consumption: A customer-centric approach to sustainability", *Journal of the academy of marketing science*, vol. 39, pp. 21-39.
- THALER R.H., SUNSTEIN C.R. (2009), *Nudge: Improving decisions about health, wealth, and happiness*, Penguin.
- TREWERN J., CHENOWETH J., CHRISTIE I., KELLER E., HALEVY S. (2021), "Are UK retailers well placed to deliver 'less and better' meat and dairy to consumers?", *Sustainable Production and Consumption*, vol. 28, pp. 154-163.
- UNITED NATIONS. (2023), The Sustainable Development Goals Report 2023: Special Edition.
- WANSINK B. (2017), "Healthy profits: An interdisciplinary retail framework that increases the sales of healthy foods", *Journal of Retailing*, vol. 93, n. 1, pp. 65-78.
- WHITTINGHAM K.L., EARLE A.G., LEYVA-DE LA HIZ D.I., ARGOLAS A. (2023), "The impact of the United Nations SUSTAINABLE DEVELOPMENT GOALS on corporate sustainability reporting", *BRQ Business Research Quarterly*, vol. 26, n. 1, pp. 45-61
- YODER A.D., PROAÑO G.V., HANDU D. (2021), "Retail nutrition programs and outcomes: an evidence analysis center scoping review", *Journal of the Academy of Nutrition and Dietetics*, vol. 121, n. 9, pp. 1866-1880.

The Family Caregiver Experience in Palliative Care Pathways: Development and Validation of a Multidimensional Approach

MARZIA CETTINA SEVERINO¹ COSTANZA GALLI² SABINA DE ROSIS³

Abstract

The caregiver plays an essential role in specific phases of the long-life journey of people, especially in delicate moments as the end-of-life. They serve as a central point in supporting and caring for patients in the terminal phase. Exploring the experience of family caregivers along the end-of-life pathway is crucial to ensure a respectful and high-quality experience with healthcare services, not only for terminal patients but also for their family caregivers. The aim of this study is to validate a multidimensional approach to investigate this experience through a co-design process involving professionals and caregivers.

Dimensions enabling the exploration of the caregiver's experience along the end-of-life path were identified through a literature review. The framework was shared with professionals involved in end-of-life care pathways. Through a mini-Delphi process conducted with both professionals and caregivers, the priority levels of these dimensions were assessed, and any differences and similarities in the perception of more or less prioritized dimensions were investigated across the board. The results underscore the importance of needs, psychological support, and communication in enhancing assistance to family caregivers throughout the end-of-life care path.

Key words: End-of-life, Experience, Caregiver, mini-Delphi study

Framing of the research. *In a context characterized by rapid demographic, socioeconomic, and familial evolution, alongside prevalent conditions of advanced chronic illness and an increase in individuals requiring long-term care, palliative care becomes strategic in ensuring quality and continuity in the care pathways of the sick. According to the definition provided by the International Association for Hospice & Palliative Care (IAHPC, 2017), palliative care encompasses the prevention, identification, assessment, and management of physical issues, including pain and other debilitating symptoms, psychological distress, spiritual discomfort, and social needs, providing support to family members and caregivers during various stages of the patient's illness and in the bereavement phase. Definition from The National Hospice and Palliative Care Organization defined the palliative care as “a specialized approach to the treatment of patients with a serious or life-threatening illness. The goal of palliative care is to provide relief from the symptoms, pain and stress of serious illness. It is also designed to improve the quality of life of both the patient and the patient's family. Palliative care is provided by a team of specialists who are trained in assisting patients and their families through what can be the most difficult time in their lives. Members of the team typically include physicians, nurse practitioners, social workers, and spiritual care coordinators. Some palliative care teams have physical and speech therapists, pharmacists, dieticians and trained volunteers.” As evident, palliative care is not only about healthcare services, but also social care, third sector activity and other kind of services for patients and their family.*

This multi-stakeholder and multi-disciplinary approach applies to a specific challenging period called end-of-life, which refers to the critical timeframe of an individuals' life-long journey after diagnosis of a life-limiting illness. It “preceding an individual's natural death from a process that is unlikely to be arrested by medical care” through bereavement (Hui et al., 2014).

Italy is at the forefront in Europe with Law 38/10, recognizing palliative care as a right for terminally ill patients. Recent socio-health system development programs, supported by the PNRR, emphasize the importance of such care and the need for integration among the various stakeholders to provide adequate assistance in different care and support contexts. Palliative care demands high levels of assistance and, consequently, strong involvement of informal caregivers (Kim et al., 2023). The latter represents a fundamental resource in many European countries, especially in those in the south, including Italy, characterized by a “familialist” welfare system (Esping-Andersen, 1990), commonly referred to as “countries with strong family ties” (Saraceno, 2010).

¹ Sant'Anna School of Advanced Studies, Pisa
e-mail: marziacettina.severino@santannapisa.it

² Usl nordovest Toscana
e-mail: costanza.galli@uslnordovest.toscana.it

³ Sant'Anna School of Advanced Studies, Pisa
e-mail: sabina.derosis@santannapisa.it

The caregiver responds to various social and health needs of the person they care for throughout the palliative care path, dealing with symptom management (Funk et al., 2015), medication administration (Wilson et al., 2018), emotional and social support for the patient, often ensuring the person's continuation in their own living environment (family and social).

Informal caregiver assistance constitutes a multidimensional caregiving work in practical/organizational, emotional, relational, and ethical terms (Brenna, Di Novi, 2015, 2016), with possible significant interferences with the performance of other professional, family, and parental roles (Fahle, McGarry, 2017). Informal caregiving activities, over time, can wear down the physical and psychological capacities of the caregiver, even leading to a crisis in the choice of home care (Vellone, 2021). The well-being of caregivers has a significant impact on patient outcomes, service functionality, and the overall sustainability of services, affecting the caregivers' productivity, their participation in service delivery, their collaboration in the value creation, and their contribution to service sustainability. Thus, it is important to recognize the person behind the definition of caregiver, and his/her needs, preferences, perception of his/her role, of the experience with services provided to them and to patients, and of the value they receive and co-produce together with patients and providers. Investigating caregivers' experience along the palliative care path is fundamental to understanding end-of-life services' functioning, better managing them and improving their quality, not only when provided to patients but also to caregivers.

In this study, we believe that the key to assessment lies in understanding the dimensions relevant to the caregiver.

Purpose of the paper. In light of these premises, our goal is to investigate the perception of the most or least prioritized dimensions by caregivers and professionals, with the ultimate aim of validating a multidimensional approach to explore the caregiver's experience along the pathway of palliative care.

Methodology. A review of the literature has been performed to identify the dimensions enabling the exploration of the caregiver's experience along the end-of-life path were identified through a literature review. First, a comprehensive list of pertinent keywords and search terms was defined by a team composed by three researchers. The keywords were related to: (i) the phase of the journey: end-of-life, (ii) the target of interest: caregivers, (iii) the object of study: the experience with services. The selected keywords and the related algorithm for the preliminary search on scientific databases was:

("end of life" OR "palliative care" OR "terminal care") AND
(("caregiv*" OR "famil*") OR support) AND
("experience" OR "satisfaction").

A few exploratory searches in Google Scholar were conducted, using the above-mentioned general terms in order to:

- Identify relevant background documents,
- Review any recent, highly-cited articles related to the topic (as available),
- Read through the top results for a couple different searches, paying particular attention to the language used to define and describe the topic,
- Take notes on relevant findings to inform the research,
- Go back and modify your research question and scope as useful.

The search was executed across the chosen databases, utilizing the identified keywords and search terms. Applying inclusion and exclusion criteria, we refined the results and focused on the most pertinent articles. The research team developed a structured data extraction form to gather relevant information from each selected study, based on an excel file. The final step was the summary and synthesis of the key findings from each study, and a workshop for discussing the results with practitioners from the Palliative Care Functional Unit of Livorno (Tuscany, Italy).

A mini-Delphi study was conducted in collaboration with a purposive sample of caregivers and professionals involved in the palliative care services in Tuscany Region. Since a minimum panel of 15–20 experts is recommended to ensure sufficient contributions in a Delphi process (Hasson et al., 2000), the research team set to 20 members the minimum number of participants. The aim was to investigate the perception of professionals and caregivers regarding the relevant dimensions of experience, emerged from the literature analysis. The data were used to understand any differences and similarities in the responses provided by the two groups of participants. The Delphi process was carried out through the distribution of an online questionnaire. The questionnaire included both open-ended and closed-ended questions. Respondents were asked to rate each dimension and sub-dimension on a scale from 1 (not important) to 10 (very important). Additionally, they were asked to prioritize the dimensions from most to least important. The open-ended questions, which were optional, allowed participants to provide suggestions regarding each dimension or sub-dimension.

The panel members received via e-mail the invitation to participate in each round of the Delphi study. Participants received one or more subsequent follow-up e-mails, as reminders, when necessary. Two Delphi rounds were expected. However, the Delphi process did not require further rounds to reach a common final decision as the results showed consistency among the two groups of participants at the first round. Consequently, the results were validated with the professionals.

Quantitative data from the closed-ended questions of the Delphi study were analysed performing descriptive statistical analyses and t-tests with the use of SAS software. The qualitative comments left in the open-ended questions were analyzed using two flexible and open qualitative methods (Silverman, Gobo, 2002): bottom-up content analysis (Krippendorff, 2018) and polarity analysis of comments in positive, negative, neutral, and mixed categories. The first method allows for

the discovery of new categories and exploration of the data in detail, identifying themes and categories during the analysis phase, without any preconceptions. Therefore, content analysis enables the identification of categories to deepen the data analysis and report the results. The other method, on the other hand, allows for the identification of comment polarization based on the words and expressions used in the text.

Preliminary Results.

Review of the literature

Currently, despite little consensus on what are the dimensions of caregivers' experience with end-of-life (Ringdal et al., 2002), some scholars have identified several of them. In general, these include the provision of information, communication, practical and emotional support (Dy et al., 2008; Grunfeld et al., 2008). Several data collection tools have also been developed to measure patient and/or caregiver satisfaction and experience in the context of palliative care, delivered both in hospice and at home (Grunfeld et al., 2008; Kristjanson, 1993), but none of them assesses all domains. Additionally, there are few validated survey instruments for the wide range of palliative care contexts or for different geographic regions (Abernethy et al., 2008; Dy et al., 2008).

To evaluate the quality of "overall" care (Tang et al., 2014) and wellbeing of caregivers in this last phase of life of their loved ones, dimensions such as the following ones have been used: Psycho-physical (e.g., pain management); Social and relational (e.g., respect and dignity, relationship with doctors); Environmental (e.g., home, hospice room, hospital) (Daly et al., 2013; Breibart et al., 2015; Zimmerman et al., 2014; Zhang et al., 2012).

We found four questionnaires mostly used in the research on the topic, namely:

- CAHPS, provided and used by The Centers for Medicare & Medicaid Services (CMS); Agency for Healthcare Research and Quality (AHRQ); United States Department of Health and Human Services,
- CANHELP, provided and used by CARENET Canadian Researchers at the End-of-Life Network. (n.d.). CANHELP Tool.
- CBI: Caregiving Burden Inventory, provided and used by Novak, M., & Guest, C. (1989)
- ZBI: Zarit Burden Inventory, provided and used for interviews by Chattat et al.; (2011)

Below there is a detailed summary of the dimensions identified from the literature to explore the experience of caregivers of patients in palliative care, presented to professionals and on which the participants expressed their views in the participatory subsequent process:

- Needs
 - o Physical, emotional, social, and spiritual
- Responses
 - o Physical, psychological, and social support and assistance
 - Specific instructions for addressing the patient's physical symptoms and how they have adapted to the patient's physical needs
 - Presence of a social support network for caregivers (including family members, friends, or specific support groups for palliative care). Access to the support network and how it has influenced their emotional well-being during the palliative care journey
 - How they have coped with and managed their emotions (anxiety, stress, etc.), whether they have received psychological support to address them
 - o Promptness in providing appropriate responses (to social, psychological, and physical needs)
 - o Continuity of responses to pain, symptoms, social, and psychological aspects
- Responses in the Home Context
 - o Perception of home visits in terms of the quality of care received
 - o Perception of the frequency and timing of each visit
- Availability in case of need
 - o 24/7 telephone availability (*this service is only available in Livorno)
 - o Listening to the needs of caregivers by all professionals and the ability to coordinate and mobilize services to ensure appropriate responses to needs - ability to direct to competent professionals or services.
- Clarity and adequacy of information
 - o Clarity of diagnosis (regarding the consequences of the disease from a physical, emotional, and psychological point of view)
 - o Clarity of program and actions
 - o Clarity of prognosis (knowledge regarding the proximity of death)
 - o Investigating the emotions experienced when receiving this information and their perception regarding how it was communicated
- Communication and involvement
 - o Adequacy and consistency of communication among the various professionals involved in the process (convergent or divergent information)

- o Involvement of the family in decisions (definition of the PAI)
- o Barriers to communication in receiving information or communicating with medical, nursing, etc., staff (complex medical terminology or lack of dedicated communication time)

Mini Delphi.

47 participants were involved in the Delphi study, with an overall response rate of 75%. There were 28 open comments left by respondents within the questionnaire. Table 1 shows the number of respondents.

	<i>Invited people</i>	<i>Respondent people</i>	<i>Response rate</i>
Caregiver (CG)	27	18	83.36
Provider (PR)	22	19	66.66
Tot	47	37	78%

The number of participants is sufficient for the data analysis, both considering all the respondents together and the two sub-groups of participants.

Respondents have an average age of 55 years and are predominantly female in both the groups (83%). Educational attainment was only queried from participants who declared themselves as caregivers. In total, 13 caregivers responded to this question, with a medium-low level of education (76%).

The results of the Delphi study show an overall high rating across all dimensions considered. In particular, dimensions related to needs, responses, clarity of information, and availability in case of need received very high scores, with averages exceeding 9 on a scale from 1 to 10. The results do not present statistically significant differences between the responses of caregivers (CG) and professionals (PR). Below is the summary table of the question "How important do you consider it in evaluating the end-of-life path to explore the following dimensions of the caregiver's experience?" with details for respondent groups.

Perceived importance of the dimension...		N.	Mean	SD	Min	Max	T-test
Needs	CG	18	9,33	1,03	7	10	0.7058
	PR	19	9,05	1,13	7	10	
	Tot	37	9,19	1,08	7	10	
Responses	CG	18	9,39	1,09	6	10	0.3757
	PR	19	8,79	1,36	6	10	
	Tot	37	9,08	1,26	6	10	
Clarity and adequacy of information	CG	18	9,44	1,34	5	10	0.0519
	PR	19	9,37	0,83	8	10	
	Tot	37	9,41	1,09	5	10	
Availability in case of need	CG	18	9,56	0,78	8	10	0.0636
	PR	19	9,11	1,24	6	10	
	Tot	37	9,32	1,06	6	10	
Responses in the Home Context	CG	18	9,17	0,78	8	10	0.3572
	PR	19	8,53	1,24	6	10	
	Tot	37	8,84	1,54	5	10	
Communication and involvement	CG	18	9,67	0,69	8	10	0.6107
	PR	19	9,58	0,61	8	10	
	Tot	37	9,62	0,64	8	10	

Regarding the analysis of the sub-dimensions of needs, it emerges that emotional needs were rated as particularly important by caregivers, with an overall average exceeding 9. Only the sub-dimension "information/training" received a statistically significant higher average score from the caregiver group compared to professionals (CG: mean 9.67, SD 0,69; PR: mean 9.11, SD 1,2; $p=0.0261$). Regarding the sub-dimensions of responses, an overall high rating is observed for all the dimensions considered, for both groups, with an average exceeding 9 out of 10. The analysis of sub-dimensions related to the home setting shows that the quality of care received at home was rated as particularly important, with an average score exceeding 9.5. However, evaluations concerning the frequency and timing of visits received slightly lower scores, although still high. No statistically significant differences were observed between the responses of caregivers and professionals regarding these sub-dimensions.

The sub-dimensions related to responsiveness in times of need received high ratings from both groups, with an overall average exceeding 9. In particular, 24-hour availability was rated as more important by providers than caregivers, with statistical significance (CG: mean 9.22, SD 2.13; PR: mean 9.26, SD 0.99; $p=0.0023$).

The sub-dimensions related to clarity and adequacy of information received high ratings from both groups. In particular, clarity of the program and actions was rated as particularly important. However, no statistically significant differences were observed between the responses of caregivers and professionals on these sub-dimensions.

The sub-dimensions of communication and involvement also received high ratings from both groups. In particular, the adequacy and congruence of communication were rated as particularly important. However, statistically significant

differences emerged between the responses of caregivers and professionals on this sub-dimension, with professionals attributing greater importance to the adequacy and congruence of communication (CG: mean 8.67, SD 1.75; PR: mean 9.63, SD 0.96; $p=0.0146$) and the caregivers' involvement (CG: mean 8.44, SD 1.92; PR: mean 9.26, SD 0.81; $p=0.0006$), compared to caregivers

The results of the ranking (1st place) of dimensions according to the order of priority indicate the preferences expressed by participants regarding the importance attributed to each dimension in the context of palliative care. Regarding the dimension of needs, both caregivers (CG) and professionals (PR) positioned this dimension as one of the main priorities, with a total of 24.32% of responses. The dimension of responses, on the other hand, was rated as less prioritized compared to all others, by both groups. However, the relatively low number of responses may indicate that it may not be considered one of the main areas for intervention.

For the dimension of Clarity and Adequacy of information, although caregivers positioned this dimension lower compared to professionals, it still remains a significant priority with 18.92% of the total responses.

The dimension of Communication and Engagement received the second highest number of overall votes, with 21.62% of the total responses. However, it is important to note that caregivers assigned a higher score than professionals on this dimension.

All comments left in the open-ended questions were read in detail, aiming to capture their meaning and lived experience, associating significant aspects that influence them. There were 28 comments left by respondents, 17 from caregivers and 11 from professionals. From an initial reading of the comments, three broad categories were identified to classify both professionals' and caregivers' comments. These categories relate to personal, professional, and organizational aspects.

About the personal aspects, caregivers highlighted the emotional and social impact of their role, emphasizing the complexity of managing the emotional and physical aspects associated with their loved ones' illness. The importance of psychological support in addressing these difficulties emerged.

With regard to the professional aspects, the main criticisms concern communication, with language barriers and inadequate information about the state of the illness. There was highlighted a contrast of information between palliative care specialists and other professionals, along with a lack of coordination among them.

Regarding the organizational aspects, professionals emphasized the need to increase the services offered, particularly the presence of professionals such as psychologists in palliative care. There was also a need highlighted to enhance support for caregivers and improve teamwork among the various professionals involved.

The results of the Delphi study were presented and discussed with professionals, who expressed their interest in the results with some aspects of novelty with respect to their daily-life experience on the field.

Discussion. The caregiver plays an essential role in palliative care pathways, representing a central point in providing support and assistance to patients in the terminal phase of their life. Behind the role of caregiver, there is a person whose wellbeing affects the outcomes for patients, the function of the services themselves, and the life of the same caregivers also in terms of productivity, ability to participate in the service delivery, co-produce value and contribute to the sustainability of the services. The preliminary results of this study clearly indicate that evaluating end-of-life journeys through the caregiver's experience requires a multidimensional approach that considers various aspects at different stages of the journey. The importance of addressing needs and the necessity of psychological support have emerged as fundamental in dealing with caregiving-related challenges. Additionally, the quality of care received at home has been assessed as particularly important, highlighting caregivers' desire to keep the patient in their familiar environment for as long as possible. Caregivers have highlighted the lack of clarity and consistency in the information received, as well as the lack of coordination among the various professionals involved in palliative care, emphasizing the need for improvement in communication among all stakeholders. Interestingly, the results have shown discrepancies between the evaluations of caregivers and professionals, especially regarding the importance attributed to communication and engagement. While professionals prioritize communication as a key dimension based on questionnaire responses, caregivers express concerns about the lack of communication or coordination among professionals, as highlighted in the analysis of open-ended responses.

Research limitations. The data presented in this article are from a small group of purposively enrolled professionals and caregivers. The results may not be generalizable. Therefore, they should be considered as a stimulus to further research and expand the available evidence, particularly regarding the role that palliative care services could play in promoting evidence-based support policies for caregivers.

In future research steps, it will be crucial to directly involve family caregivers in a final workshop and discuss the evidence that has emerged with them.

Managerial implications. In this study, we believe that the key to evaluation lies in understanding the dimensions relevant to the caregiver to develop tools capable of assessing the overall quality of services in their perspective. Given the crucial role of caregivers in palliative care pathways, it is necessary to understand their experience in order to improve the quality of care and responses provided not only for the patient but also for family caregivers. This is even more necessary in light of the transformative pressures stemming from the National Recovery and Resilience Plan (PNRR) and DM77. One useful tool for defining, measuring, and evaluating interventions could be a caregiver voice detection

system. There are some specific and non-continuous experiences of collecting Caregiver-Reported Measures (Desai et al., 2018), tools capable of monitoring and detecting further evidence for the improvement of care and support initiatives for caregivers. Such surveys could also be useful for reconstructing the actual healthcare and social network that supports both the patient and the caregiver, in order to identify best practices for integration.

In addition, the preliminary results of this study have clear managerial implications since they highlight important differences in the perception of providers and caregivers, which related also to the organization of end-of-life services: they regard the caregivers' preferences for domiciliary services and the less importance attributed to the 24 hours services with respect to coordinated and high-quality services in structured moments.

Originality of the paper. This is one of the first studies exploring the caregivers' experience with end-of-life services, by directly involving both caregivers themselves and professionals in a collaborative process of research. It provides insights for future study on the topic and initial suggestions on potential changes in the organizational models for addressing the caregivers' preferences and needs, and to increase their wellbeing in this critical phase of life.

References

- ABERNETHY A.P., CURROW D.C., FAZEKAS B.S., et al. (2008), "Specialized palliative care services are associated with improved short- and long-term caregiver outcomes", *Supportive Care in Cancer*, vol. 16, n. 6, pp. 585–597. Epub ahead of print Oct 25, 2007. Disponibile su <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2413096/>
- BRENNNA E., DI NOVI C. (2015), "Is caring for older parents detrimental to women's mental health? The role of the European North South gradient", *Review of Economics of the Household*, n. 14, pp. 745–778.
- BRENNNA E., DI NOVI C. (2016), Assistenza domiciliare: invecchiamento della popolazione e cure formali e informali, il gradiente Nord-Sud Europa. 12 Rapporto Crea Sanità, pp. 313–323.
- DALY D., MATZEL S.C. (2013), "Building a transdisciplinary approach to palliative care in an acute care setting", *OMEGA-Journal of Death and Dying*, vol. 67, n. 1-2, pp. 43–51.
- DESAI A.D., JACOB-FILES E.A., LOWRY S.J., OPEL D.J., MANGIONE-SMITH R., BRITTO M.T., HOWARD W.J. (2018), "Development of a caregiver-reported experience measure for pediatric hospital-to-home transitions", *Health Services Research*, n. 53, pp. 3084–3106.
- DY S.M., SHUGARMAN L.R., LORENZ K.A., et al. (2008), "A systematic review of satisfaction with care at the end of life", *Journal of the American Geriatrics Society*, vol. 56, n. 1, pp. 124–129. Epub ahead of print Nov 20, 2007.
- ESPING-ANDERSEN G. (1990), *The three worlds of welfare capitalism*. Princeton University Press.
- FAHLE S., MCGARRY K. (2017), *Caregiving and work: the relationship between labor market attachment and parental caregiving*. Michigan Retirement Research Centre Research Paper, (2017-356), Wright
- FUNK L.M., STAJDUHAR K.I., OUTCALT L. (2015), "What family caregivers learn when providing care at the end of life: A qualitative secondary analysis of multiple datasets", *Palliative & Supportive Care*, vol. 13, n. 3, pp. 425–433.
- GRUNFELD E., FOLKES A., URQUHART R. (2008), "Do available questionnaires measure the communication factors that patients and families consider important at end of life?", *Journal of Clinical Oncology*, vol. 26, n. 23, pp. 3874–3878.
- HUI D., NOORUDDIN Z., DIDWANIYA N., DEV R., DE LA CRUZ M., KIM S.H., BRUERA E. (2014), "Concepts and definitions for "actively dying," "end of life," "terminally ill," "terminal care," and "transition of care": a systematic review", *Journal of pain and symptom management*, vol. 47, n. 1, pp. 77–89.
- KIM K.A., PARK J.S., SEO K.W., CHOI E.Y., AHN J.A. (2022), Factors affecting the quality of life of family caregivers of patients with heart failure: A cross-sectional study. *Medicine*. DOI: 10.1097/MD.00000000000030042, disponibile online su questo link <https://pubmed.ncbi.nlm.nih.gov/36107616/> (ultimo accesso 20-4-2023).
- KRISTJANSON L.J. (1993), "Validity and reliability testing of the FAMCARE Scale: Measuring family satisfaction with advanced cancer care", *Social Science & Medicine*, vol. 36, n. 5, pp. 693–701
- PANATI G., GOLINELLI G.M. (1991), *Tecnica economica industriale e commerciale*, La Nuova Italia Scientifica, Roma.
- RINGDAL G.I., JORDHØY M.S., KAASA S. (2002), "Family satisfaction with end-of-life care for cancer patients in a cluster randomized trial", *Journal of Pain and Symptom Management*, vol. 24, n. 1, pp. 53–63
- SARACENO C., KECK W. (2010), "Can we identify intergenerational policy regimes in Europe?", *European Societies*, n. 12, pp. 675–696.
- SILVERMAN D., GOBO G. (2002), *Come fare ricerca qualitativa*. Roma: Carocci.
- TANG S.T., LIU L.N., LIN K.C., CHUNG J.H., HSIEH C.H., CHOU W.C., SU P.J. (2014), "Trajectories of the multidimensional dying experience for terminally ill cancer patients", *Journal of pain and symptom management*, vol. 48, n. 5, pp. 863–874.
- VELLONE E., RIEGEL B., ALVARO R. (2021), *The situation-specific theory of caregiver contributions to heart failure self-care*. Situation specific theories: Development, utilization, and evaluation in nursing, pp. 193–206.
- WILSON E., CASWELL G., TURNER N., POLLOCK K. (2018), "Managing medicines for patients dying at home: A review of family caregivers' experiences", *Journal of Pain & Symptom Management*, vol. 56, n. 6, pp. 962–974.
- ZHANG B., NILSSON M.E., PRIGERSON H.G. (2012), "Factors important to patients' quality of life at the end of life", *Archives of internal medicine*, vol. 172, n. 15, pp. 1133–1142.
- ZIMMERMANN C., SWAMI N., KRZYŻANOWSKA M., HANNON B., LEIGHL N., OZA A., LO C. (2014), "Early palliative care for patients with advanced cancer: a cluster-randomised controlled trial", *The Lancet*, vol. 383, n. 9930, pp. 1721–1730.

Websites

The National Hospice and Palliative Care Organization, www.nhpco.org

Balancing Act: The Impact of Product-Oriented Sustainability Information on Consumer Responses

VALENTINA MAZZOLI¹ LAURA GRAZZINI² AULONA ULQINAKU³

Abstract

Despite the emphasis on sustainability in corporate communications, fashion brands often fall short in integrating it into product-oriented messaging, especially in e-commerce platforms. This study draws upon signaling theory and information processing theory to investigate the impact of product-oriented sustainability information on consumer responses when purchasing online. We hypothesize that the presence of product-oriented sustainability information produces positive effects on consumer response. However, an increase in the amount of sustainability information may elicit negative consumer responses, thereby challenging the efficacy of sustainability signals. This phenomenon is attributed to information overload, wherein excessive information surpasses individuals' cognitive processing capacity, resulting in diminished information processing and potentially adverse outcomes. The study is based on a mixed method design. Through an exploratory content analysis, we examine actual product-oriented sustainability information across luxury and fast fashion brands' e-commerce platforms. Preliminary findings reveal variations in the presentation of sustainable product attributes, with certain brands allocating a substantial portion of product information to sustainability. Building upon content analysis' findings, ongoing research plans to conduct experiments to evaluate the effect of product-oriented sustainability information on consumer responses assessing also the mediating role of information overload. We anticipate that an excessive amount of sustainability information provided by fashion brands may lead to unfavorable consumer reactions due to higher information overload. Consequently, our study emphasizes the importance of carefully balancing sustainability information to prevent information overload and foster positive consumer responses. This research contributes to the understanding of sustainability communications in the fashion industry and consumer behavior research. Furthermore, it highlights the evolving landscape of sustainable fashion communications and its implications for industry stakeholders.

Key words: Product-oriented sustainability information; information overload; signaling theory; e-commerce; sustainable fashion communication.

Framing of the research. The fashion industry has faced scrutiny for its employment practices and labor standards across its extensive supply chains, along with the detrimental environmental effects stemming from the production, usage, and disposal of raw materials and finished goods (Crane and Glozer, 2016; Moretto et al., 2018). For instance, fashion manufacturing contributes to 10% of global carbon emissions, equivalent to the European Union's output, depletes water sources, contaminates rivers and streams, and results in 85% of textiles ending up in landfills annually. Even the act of laundering clothes releases 500,000 tons of microfibers into the ocean yearly, akin to 50 billion plastic bottles (Business Insider, 2019).

In response to these criticisms, the fashion industry is increasingly embracing eco-friendly practices, with companies continuously enhancing their sustainability approaches (Wang et al., 2019) and emphasizing their environmental or social credentials. The realm of sustainable fashion encompasses diverse practices, including environmental and social considerations, slow fashion, reuse, recycling, cruelty-free, and anti-consumption measures.

Luxury and fast fashion brands alike have been integrating sustainable measures into their operations. For instance, Stella McCartney, a leading sustainable luxury fashion brand, utilizes eco-friendly materials such as vegan leather, recycled synthetics, organic cotton, and faux fur (Vogue, 2021). Gucci has instituted the Gucci Equilibrium program, focusing on reporting corporate social responsibility (CSR) policies, environmental impacts, employee satisfaction, and structural innovations. Similarly, Primark recently launched Primark Cares, aimed at reshaping clothing production and sourcing practices to minimize fashion waste and enhance the well-being of those involved in Primark's product supply chain. Furthermore, consumers are increasingly mindful of the ethical implications of their purchases, adapting their buying behaviors to favor environmentally and socially responsible brands (Amatulli et al., 2021; Grazzini et al., 2021).

¹ University of Verona
e-mail: valentina.mazzoli@univr.it

² University of Firenze
e-mail: laura.grazzini@unifi.it

³ e-mail: a.ulqinaku@leeds.ac.uk

Sustainability initiatives are frequently well-described in specific sections of corporate websites or in sustainability and CSR reports. However, when it comes to the point of purchase, products often fail to provide sustainability information and details about the production process. Some brands limit themselves to displaying only the material composition of items, while others devote ample space to describing the production process and the product's impact on the environment or society. Due to these differences in product-oriented sustainability information practices among brands, we aim to investigate the impact of this information on consumer responses.

Purpose of the paper. Previous studies have extensively explored the engagement of fashion companies in corporate social responsibility (CSR) activities (e.g., Acuti et al., 2022), examining the primary communication channels they utilize to disseminate information about environmental and social initiatives (e.g., CSR reports, corporate websites). Many prominent global fashion brands have emphasized sustainability as a fundamental aspect of their mission through official communication channels. However, there appears to be a reluctance to integrate sustainability themes into product-oriented communication. For instance, while Gucci promotes a comprehensive, eco-friendly program aimed at reducing its environmental footprint, sustainability features are only highlighted in a limited number of product categories on the company's website.

This study explores the mechanisms and reasons behind the potential negative impact of the quantity of sustainable product information on consumer responses. Drawing upon signaling theory (Connelly et al., 2011; Spence, 1978), we aim to elucidate a possible pathway for understanding the relationship between the amount of sustainable product information and consumer perceptions.

Signaling theory. Signaling theory is a concept often used in economics and communication studies to explain how individuals or entities convey information to others (Spence, 1973). It suggests that in situations where one party possesses more information than the other, signaling becomes crucial for effective communication and decision-making. Two key parties are involved in the signaling process: the sender (e.g., the company) and the receiver (e.g., the consumer). The sender is the party with information to convey, and he must make decisions regarding whether and how to communicate the information they possess. This decision involves considerations such as what information to convey, how to convey it, and the potential consequences of signaling. On the other hand, the receiver is the party that receives the signal and he must interpret the signal provided by the sender. This involves assessing the credibility, reliability, and relevance of the signal to make informed decisions. Thus, signaling theory is concerned not only with the transmission of information but also with how that information is interpreted by the receiver (Connelly et al., 2011). In this study, signaling theory is employed to elucidate the relationship between the quantity of product-oriented sustainability information and consumer perceptions. In an online environment characterized by high information asymmetry, brands play a pivotal role in shaping consumer opinions and decisions through the signals they convey (Javornik et al., 2020). Signaling theory posits that brands utilize signals to convey latent quality attributes to consumers, thereby reducing information asymmetry (Connelly et al., 2011).

The presence of product-oriented sustainability information. Product oriented sustainability information refers to the communication of product attributes, such as the use of recycled materials (Grazzini et al., 2021). Communication of sustainable product attributes has been shown to enhance consumer satisfaction and purchase behaviors (e.g., Hernandez et al., 2015). Prior research across various industries, including fashion, has demonstrated the positive influence of sustainable product attributes on consumer behaviors (Joshi & Rahman, 2015; Kumar et al., 2017; Cervellon & Wernerfelt, 2012; Steinhart et al., 2013; Niinimäki, 2010). Moreover, signaling theory supports that the presence of product attributes reduces the information asymmetry between the consumer and the company leading to positive consumers' outcomes.

Thus, based on previous results and according to signaling theory, we expect that conveying product-oriented sustainability information leads to positive consumer responses.

The amount of product-oriented sustainability information. Literature presents conflicting findings regarding the impact of sustainability on luxury and fast fashion products, suggesting that sustainable product attributes alone may not ensure the success of fashion items (Bly et al., 2015; De Angelis et al., 2017; Fani et al., 2022; Janssen et al., 2017).

While existing research provides valuable insights into the communication of sustainable product attributes, there remains a gap in empirical research concerning the effect of the quantity of sustainable product information on consumer responses in the fashion industry (Amatulli et al., 2021). Information processing theory (Tybout et al., 1981) may help in the understanding of the effect of the quantity of information conveyed on consumer responses. The information processing theory explains consumer behavior by focusing on individual's cognitive processes. It suggests that behavior is influenced not only by what individuals think, but also by how they process information. Incoming information is usually stored in active memory and can trigger the retrieval of relevant thoughts associated with previously processed objects. However, since active memory has limited capacity, information needs to be transferred to long-term storage for future use. This consolidation process, known as rehearsal, involves actively linking attributes with objects. In this context, we assume that if the quantity of product-oriented sustainability information is too high, the active memory is not able to transfer the information to the long-term memory. The failure of this systematic pattern limits the benefits highlighted by previous literature coming from the association of sustainability attributes with products (e.g., Grazzini et al., 2021).

For these reasons, we expect a negative relationship between the amount of product-oriented sustainability information (high vs low) and consumer responses.

Information overload. The information processing model predicts that as information load increases, individuals may initially allocate more cognitive resources to process information, but eventually, their processing capacity may become overwhelmed, leading to decreased information processing and decision-making efficiency (Schroder, Driver, &

Streufert, 1967). In line with this, past research suggests that individuals have limited cognitive capacity and may experience cognitive overload when exposed to excessive information (Baddeley, 2000; Miller, 1956; Fox et al., 2007). This phenomenon of information overload can result in consumers becoming frustrated, confused, and less able to assimilate and elaborate on the information provided (Mitchell & Papavassiliou, 1999; Jacoby et al., 1984; Wilson, 1996; Turetken & Sharda, 2004; Maity et al., 2002).

In our context, we assume that information overload can further elucidate the negative relationship between the amount of product-oriented sustainability information and consumer responses, working as a mediator of this relationship.

Methodology. This study adopts a mixed-method design (Davis et al., 2011) to uncover the effect of the amount of product-oriented sustainability information on consumer responses. It considers two main phases: the exploratory phase and the Experimental phase.

Exploratory Phase: The initial phase of this research project involves conducting an exploratory content analysis of product-oriented sustainability information accessible on various brands' e-commerce platforms. This phase aims to gain a comprehensive understanding of the research subject/context (Bellucci et al., 2019) and to gather valuable insights for subsequent experiments. For this phase we consider all 250 brands included in the Fashion Transparency Index (FTI; Fashion Revolution, 2023). To ensure comparability of information obtained from brands' e-commerce platforms, we selected a prototype product (i.e., a white t-shirt). Data collection was conducted on the English version of the websites, and product information for the selected item from each brand was collected and stored in an Excel spreadsheet. The pdf of the website was downloaded and stored in Nvivo.

Content analysis involves systematically condensing extensive text into fewer content categories using explicit coding rules (Stemler, 2001). In accordance with Bell et al. (2018), the research team discussed and approved a coding schedule, which serves as a framework for coding all data related to an item. Additionally, the coding manual, a set of instructions for coders outlining categories and rules for text classification, was developed, discussed, and approved. To ensure consistent coding of the content, the coding manual includes a comprehensive list of dimensions, various categories under each dimension, corresponding codes for each category, and guidance on factors to consider when allocating a code to a specific dimension. The coding schedule embeds: i) the brand; ii) the industry (fast fashion vs Luxury); iii) the position of the brand in the FTI (low-medium vs medium-high); iv) the link to the webpage analysed; v) the product information available on the website; vi) the presence of sustainability signals (yes vs no) vii) the number of words embeds in the product information available on the website viii) the number of words related to sustainability ix) the dimension of sustainability (environmental vs social sustainability); x) the type of sustainability content.

Two researchers independently conducted the coding process to safeguard its internal validity, as suggested by Weber (1990). Subsequently, the results were compared to assess inter-rater reliability, following Cohen's approach (1960), and measured using Cohen's kappa coefficient, yielding a value of 0.80. To resolve any discrepancies, the researchers collaboratively discussed specific cases. In instances of persistent disagreement, a third researcher was consulted. After completing the coding process, comments were descriptively analysed, tallying categories derived from the coding process.

Experimental Phase (Ongoing): Building upon the insights gained from the exploratory study, a series of scenario-based experiments will be developed to test our assumptions.

In the first experiment, we will examine the direct effect of product-oriented sustainability information on consumer responses. A scenario-based experiment will manipulate the presence (versus absence) of sustainability attributes in the product description. Consumer responses will include attitude towards the product (Chae and Hoegg, 2013) and willingness to purchase the product (Dodds et al., 1991). These variables will be measured using previously validated scales, which respondents will rate on a scale from 1 to 7. A minimum of 100 participants will be recruited from the UK panel of Prolific Academic (Peer et al., 2017).

In the second experiment, we will investigate the effect of varying amounts of product-oriented sustainability information (high versus medium versus low) on consumer responses. The amount of information presented in this experiment will be determined through a pilot test to ensure that manipulations are perceived as intended. Consumer responses will be measured as in the first experiment. Similarly, participants will be recruited from the English panel of Prolific Academic, with a minimum sample size of 150 individuals.

In the third experiment, we will explore the mediating effect of information overload. An online experiment, based on the same manipulations as the second experiment, will be conducted. A minimum of 250 individuals will be recruited from the UK panel of Prolific Academic. The same measures as in the first two experiments will be used, with information overload being assessed using a seven-point Likert scale based on Hunter et al. (2022).

Results. Exploratory phase. The purpose of this exploratory analysis was to examine how different typologies of brands communicate sustainability related to the product. As the content analysis is still in progress, preliminary results refer to a sample of selected sixteen brands positioned across different tiers of the FTI. Specifically, we chose four luxury brands positioned in the low-medium segment of the index (Max Mara, Brunello Cucinelli, Hermès, and Chloé), and four luxury brands positioned in the medium-high segment (Gucci, Fendi, Balenciaga, and Saint Laurent). Similarly, we selected eight fast fashion brands from the low-medium segment (Primark, Zara, Shein, Abercrombie & Fitch) and the medium-high segment (OVS, H&M, Tezenis, Uniqlo).

The average number of words used to present and sell a product on its own e-commerce is 131 ($Min_{words}=39$, $Max_{words}=327$). Luxury brands usually use an average of 119 words ($Min_{words}=39$, $Max_{words}=188$), while fast fashion brands show an average of 143 words ($Min_{words}=48$, $Max_{words}=327$). The number of words referring to sustainability ranges from 3 to 162 words ($M_{s\_words} = 55$). In terms of words related to sustainability the difference between fast fashion and luxury brands is not significant ($M_{s\_words\_fastfashion} = 56$; $M_{s\_words\_luxury} = 53$). The highest rate of the words related to sustainability over the total number of words refer to Balenciaga (88%), who describes in depth the impact of the product on the environment and Balenciaga's sustainability projects. OVS and H&M, both positioned at the medium-high level of the sustainability index spend around 70% of the product information on sustainability issues. When talking about sustainability related to the product, brands usually refer to environmental sustainability. Some brands (five out sixteen brands) refer also to social sustainability mentioning work conditions, and product and suppliers' place of origin. In terms of type of content related to sustainability brands mention not only the impact of the product on the environment (i.e., product sustainability), but also general sustainability initiatives (i.e., general sustainability), sustainability throughout the supply chain in terms of place of origin and suppliers' localization and standards (i.e., transparency), and information regarding how consumers can take care of the environment by taking care of the product (consumer sustainability). Luxury brands mainly focus on transparency, while fast fashion brands focus on product sustainability and general sustainability initiatives.

Experimental designs (expected). From our experiments, we expect that the presence (vs. absence) of sustainable product-oriented information positively affects consumers' reactions. This result will be in line with previous studies that assume that the presence of sustainability information plays critical roles in shaping consumer decisions toward sustainable practices (De Pelsmacker & Janssens, 2007).

However, excessive information availability can lead to information overload, where consumers struggle to process the vast amount of information and may become overwhelmed (Bartiaux, 2008; Connolly & Prothero, 2008; Carrigan & Attalla, 2001; Longo et al., 2019). Thus, we expect that a high amount of product-oriented sustainability information negatively affects consumers' perceptions and behaviors towards fashion products, due to information overload.

Research limitations. The current ongoing study is not free from limitations. The first limitation refers to the use of scenario-based experiments. Further study should increase the external validity of these results with a field study. Moreover, other variables (e.g., consumer green identity) should be included in the model with the aim to ensure the robustness of the model.

Managerial implications. Managerially, the study helps fashion brands understand how they should communicate sustainability in the context of product information, by showing the potential impact on consumers' perceptions. This study also suggests the need for fashion brands to carefully balance the amount of sustainability information to avoid information overload to ensure positive consumer responses.

Originality of the paper. This study advances past research on sustainable communication in the fashion context, by investigating the role of the amount of product information on consumer responses, which remains overlooked in the literature (e.g., Amatulli et al., 2021). Moreover, the study suggests information overload as a potential underlying mechanism that explains the relationship between the amount of product-oriented sustainability information and potentially negative consumers' responses. This study thus aims to explore whether, how, and why the amount of product-oriented sustainability information might negatively influence consumer perceptions and behaviors.

References

- ACUTI D., PIZZETTI M., DOLNICAR S. (2022), "When sustainability backfires: A review on the unintended negative side-effects of product and service sustainability on consumer behavior", *Psychology & Marketing*, vol. 39, n. 10, pp. 1933-1945.
- AMATULLI C., DE ANGELIS M., DONATO C. (2021), "The atypicality of sustainable luxury products", *Psychology & Marketing*, vol. 38, n. 11, pp. 1990-2005.
- BADDELEY R., HANCOCK P.J., FÖLDIÁK P. (Eds.). (2000), *Information theory and the brain*. Cambridge: Cambridge University Press.
- BARTIAUX F. (2008), "Does environmental information overcome practice compartmentalisation and change consumers' behaviours?", *Journal of Cleaner Production*, vol. 16, n. 11, pp. 1170-1180.
- BELLUCCI M., SIMONI L., ACUTI D., MANETTI G. (2019), "Stakeholder engagement and dialogic accounting: Empirical evidence in sustainability reporting", *Accounting, Auditing & Accountability Journal*, vol. 32, n. 5, pp. 1467-1499.
- BLY S., GWOZDZ W., REISCH L.A. (2015), "Exit from the high street: An exploratory study of sustainable fashion consumption pioneers", *International Journal of Consumer Studies*, vol. 39, n. 2, pp. 125-135.
- CARRIGAN M., ATTALLA A. (2001), "The myth of the ethical consumer—do ethics matter in purchase behaviour?", *Journal of consumer marketing*, vol. 18, n. 7, pp. 560-578.
- CERVELLON M.C., WERNERFELT A.S. (2012), "Knowledge sharing among green fashion communities online: Lessons for the sustainable supply chain", *Journal of fashion marketing and management: An international journal*, vol. 16, n. 2, pp. 176-192.
- COHEN J. (1960), "A coefficient of agreement for nominal scales", *Educational and Psychological Measurement*, vol. 20 n. 1, pp. 37-46.
- CONNELLY B.L., CERTO S.T., IRELAND R.D., REUTZEL C.R. (2011), "Signaling theory: A review and assessment", *Journal of management*, vol. 37, n. 1, pp. 39-67.
- CONNOLLY J., PROTHERO A. (2008), "Green consumption: Life-politics, risk and contradictions", *Journal of consumer culture*, vol. 8, n. 1, pp. 117-145.

- CRANE A., GLOZER S. (2016), "Researching corporate social responsibility communication: Themes, opportunities and challenges", *Journal of management studies*, Vol. 53, n. 7, pp. 1223-1252.
- DAVIS D.F., GOLICIC S.L., BOERSTLER C.N. (2011), "Benefits and challenges of conducting multiple methods research in marketing", *Journal of the Academy of Marketing Science*, vol. 39 n. 3, pp. 467-479.
- DE ANGELIS M., ADIGÜZEL F., AMATULLI C. (2017), "The role of design similarity in consumers' evaluation of new green products: An investigation of luxury fashion brands", *Journal of Cleaner Production*, vol. 141, pp. 1515-1527.
- DE PELSMACKER P., JANSSENS W. (2007), "A model for fair trade buying behaviour: The role of perceived quantity and quality of information and of product-specific attitudes", *Journal of business ethics*, vol. 75, pp. 361-380.
- DODDS W.B., MONROE K.B., GREWAL D. (1991), "Effects of price, brand, and store information on buyers' product evaluations", *Journal of marketing research*, vol. 28, n. 3, pp. 307-319.
- FANI V., MAZZOLI V., ACUTI D. (2023), "'I wanna be sustainable, but I don't wanna show it!': The effect of sustainability cues on young adult consumers' preferences", *Business Strategy and The Environment*, vol. 32, n. 6, pp. 3344-3358.
- FOX J.R., PARK B., LANG A. (2007), "When available resources become negative resources: The effects of cognitive overload on memory sensitivity and criterion bias", *Communication Research*, vol. 34, n. 3, pp. 277-296.
- GRAZZINI L., ACUTI D., AIELLO G. (2021), "Solving the puzzle of sustainable fashion consumption: The role of consumers' implicit attitudes and perceived warmth", *Journal of Cleaner Production*, vol. 287, pp. 125579.
- HERNANDEZ R.R., HOFFACKER M.K., FIELD C.B. (2015), "Efficient use of land to meet sustainable energy needs", *Nature Climate Change*, vol. 5, n.4, pp. 353-358.
- HUNTER G.L., TAYLOR S.A., KALLEN P.H. (2024), "Shoppers' susceptibility to information overload: scale development and validation", *Journal of Marketing Theory and Practice*, vol. 32, n. 1, pp. 94-113.
- JACOBY J. (1984), "Perspectives on information overload", *Journal of Consumer Research*, vol. 10, n. 4, pp. 432-435.
- JANSEN D., LANGEN N. (2017), "The bunch of sustainability labels–Do consumers differentiate?", *Journal of Cleaner Production*, vol. 143, pp. 1233-1245.
- JAVORNIK A., FILIERI R., GUMANN R. (2020), "'Don't forget that others are watching, too!': The effect of conversational human voice and reply length on observers' perceptions of complaint handling in social media", *Journal of Interactive Marketing*, vol. 50, n. 1, pp. 100-119.
- JOSHI Y., RAHMAN Z. (2015), "Factors affecting green purchase behaviour and future research directions", *International Strategic management review*, vol. 3, n. 1-2, pp. 128-143.
- KUMAR B., MANRAI A.K., MANRAI L.A. (2017), "Purchasing behaviour for environmentally sustainable products: A conceptual framework and empirical study", *Journal of retailing and consumer services*, vol. 34, pp. 1-9.
- LONGO C., SHANKAR A., NUTTALL P. (2019), "It's not easy living a sustainable lifestyle": How greater knowledge leads to dilemmas, tensions and paralysis", *Journal of Business Ethics*, vol. 154, pp. 759-779.
- MAITY M., ZINKHAN G.M., KWAK H. (2002), "Consumer information search and decision making on the Internet: A conceptual model", In *American Marketing Association. Conference Proceedings* (Vol. 13, p. 31). American Marketing Association.
- MILLER G.A. (1956), "The magical number seven, plus or minus two: Some limits on our capacity for processing information", *Psychological review*, vol. 63, n. 2, pp. 81.
- MITCHELL V.W., PAPAVALASSIOU V. (1999), "Marketing causes and implications of consumer confusion", *Journal of Product & Brand Management*, vol. 8, n. 4, pp. 319-342.
- MORETTO A., MACCHION L., LION A., CANIATO F., DANESE P., VINELLI A. (2018), "Designing a roadmap towards a sustainable supply chain: A focus on the fashion industry", *Journal of cleaner production*, Vol. 193, pp. 169-184.
- NIINIMÄKI K. (2010). Eco-clothing, consumer identity and ideology. *Sustainable development*, vol. 18, n. 3, pp. 150-162.
- PEER E., BRANDIMARTE L., SAMAT S., ACQUISTI A. (2017), "Beyond the Turk: Alternative platforms for crowdsourcing behavioral research", *Journal of experimental social psychology*, vol. 70, pp. 153-163.
- SCHRODER H.M., DRIVER M.J., STREUFERT S. (1967), *Human information processing*. New York: Holt, Rinehart & Winston.
- SPENCE M. (1973), "Job market signaling", *Quarterly Journal of Economics*, vol. 87 n. 3, pp. 355-374.
- SPENCE M. (1978), "Job market signaling", In *Uncertainty in economics* (pp. 281-306). Academic Press.
- STEINHART Y., AYALON O., PUTERMAN H. (2013). The effect of an environmental claim on consumers' perceptions about luxury and utilitarian products", *Journal of Cleaner Production*, vol. 53, pp. 277-286.
- STEMLER S. (2001). *An Introduction to Content Analysis*. ERIC Digest.
- TURETKEN O., SHARDA R. (2004), "Development of a fisheye-based information search processing aid (FISPA) for managing information overload in the web environment", *Decision Support Systems*, vol. 37, n. 3, pp. 415-434.
- TYBOUT A.M., CALDER B.J., STERNTHAL B. (1981), "Using Information Processing Theory to Design Marketing Strategies", *Journal of Marketing Research*, vol. 18, n. 1, pp. 73-79.
- WANG H., LIU H., KIM S.J., KIM K.H. (2019), "Sustainable fashion index model and its implication", *Journal of Business Research*, Vol. 99, pp. 430-437.
- WEBER R.P. (1990), *Basic content analysis* (Vol. 49). Sage.
- WILSON P. (1996), *Interdisciplinary research and information overload*.

Websites

<https://www.businessinsider.in/science/news/the-fashion-industry-emits-more-carbon-than-international-flights-and-maritime-shipping-combined-here-are-the-biggest-ways-it-impacts-the-planet-/articleshow/71640863.cms>
<https://www.vogue.co.uk/fashion/article/stella-mccartney-autumn-2021>
<https://www.fashionrevolution.org/about/transparency/>

Catalysing Sustainability: Retailers as Driving Platforms in the Food Industry's Transition¹

ALBERTO MASSACCI * ELENA CASPRINI[▲] LORENZO ZANNI^{**}

Abstract

As societal and environmental challenges persist, industries face increasing pressure to transition towards more sustainable practices. In this context, the food industry is under scrutiny due to its pivotal role in addressing issues such as nutrition, food security, and the environmental, social, and economic impact of its productions. While technological advancements have shown promise in improving sustainability within agricultural production, economic viability remains a critical concern. The paper starts from conceptualizing the retailer as a mediating platform, physical or digital, of communication between supply and demand. By reviewing existing literature on the role of platforms in fostering sustainability, this work explores the potential of the retail industry in driving sustainability within the agri-food sector. Through a two-stage review process, we first examine the evolving landscape of platform literature as a driver for sustainability. Then, focusing on the agri-food retail industry, we attempt to identify potential gaps and opportunities. Our findings highlight opportunities for future research and underscore the importance of innovation and value generation in driving sustainable change. The paper offers valuable insights for academics and practitioners seeking to navigate the intersection of sustainability, platforms, and retail in the agri-food industry.

Key words: Food retail; Sustainability transition; platforms; business model

Framing of the research. While social and environmental issues related to production continue to damage our society, public attention and political commitment are leading all industrial sectors to initiate, or accelerate, the transition process towards more sustainable productions. The food industry is one of the most scrutinized sectors for several factors. On one hand, nutrition and food security continues to represent a worldwide plague, highlighting critical issues in today's production models. On the other hand, scholars point out how quest for food security (especially through intensification) may undermine transition towards sustainable agriculture and food production systems (El Bilali, 2019). The digital revolution and information technology systems have been shown to provide a great impact on agricultural production processes by improving their efficiency and the green growth in the sector (Shen et al., 2022). However, although technologies are significantly improving the environmental impact within production, it remains crucial to ensure the economic sustainability of the industry. In order to ensure a full commitment, on the production side, to the transition towards sustainable development, sustainability principles need to be integrated into the core of business design, operation, and strategy (Stubbs et al. 2008). Indeed, a business model for sustainability aims to generate social and environmental value, while preserving or improving the more traditional economic goal (Bohnsack et al., 2014). However, a wide stream of literature has emphasized how the evolution of a business model towards sustainable goals could be affected by several types of barriers, such as few financial incentives, low market acceptance or scarce legislative and political pressure (Laukkanen et al., 2014; Asswad et al., 2016).

Hence, firms must be able to transfer the value generated by their business model for sustainability to an audience that can value and appreciate it. The growing demand for socially and environmentally responsible behavior has heightened consumers' willingness to align with social norms. Yet, over the past two decades, a market-oriented literature on consumer behaviour has underscored the disparity between what individuals express and their real actions, leading to the conceptualization of the attitude-behavior gap (Boulstridge et al., 2000). Several studies have attempted to explain such phenomena and provide valuable justification or evidence within different context (Wiederhold et al., 2018; Juvan

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* University of Siena
e-mail: albertomassacci@hotmail.it

[▲] University of Siena.
e-mail: elena.casprini@unisi.it

^{**} University of Siena
e-mail: lorenzo.zanni@unisi.it

et al., 2014). Sultan et al. (2020) emphasize that communication, satisfaction, and trust exert a positive and significant influence on purchase behavior while simultaneously reducing the attitude-behavioral gap. Despite technology shrinking the concept of space in the market by facilitating global market interaction, it has concurrently bolstered the role of platforms in facilitating market mediation. Consequently, factors like communication, satisfaction, and trust are frequently intermediated by third parties, potentially impacting the interaction between businesses and end consumers. The concept of platform has gained prominence with the advent of Internet and globally recognized companies such as Airbnb, Amazon, and Alibaba to the point where the current economic landscape has been described as a “platform economy” by the popular business press (Rietveld et al., 2021). While in many sectors digital platforms are, nowadays, the major business model, other industries have remained tied to a less digitalized concept of platform. Indeed, its entrepreneurial meaning has been present for centuries and involves the active role in meeting and mediating supply and demand. Although the food industry has still been influenced by the arrival of new technologies, and the emergence of new entrepreneurship in this regard, it has maintained the traditional physical store as the main space for the meeting between supply and final demand.

Purpose of the paper. In such a framework, starting from the conceptualization of the retailer as a platform for exchange and interaction between demand and supply, this paper attempts to study the strategies that this organizational structure can exploit to push sustainability in the agri-food sector.

The paper will first review the main literature on the role of platform in driving the transition towards a more sustainable system (in its triple essence: environmental, social and economic). After providing a broad overview of the topic that allows us to get the overall picture about the state of the art of the literature about the main conceptual frameworks, special attention will be given to the applications in the retail food sector, aiming to comprehend its potential impact as an intermediary, particularly concerning cross-side network effects and the influence that the role of the retailer can have both on the consumer side and towards the entire supply chain. This will allow to identify specific industry characteristics and potential business opportunities for a sector that needs to converge the three dimensions of sustainability at an ever-increasing pace.

Methodology. In order to satisfy our research needs, we have used a two-stages literature review. The first stage involves the identification of the relevant literature aimed at identifying the contribution that platforms can provide to the sustainability transition. In the second phase, we will dig-in into the same literature to understand whether the food industry is proceeding in the same direction or if there are peculiarities compared to other sectors and potential opportunities that still have to be exploited.

The analysis will involve the study of academic communities through the identification of the common literature on which each article is founded [i.e. The higher the reference overlap between the two papers, the more these two papers were deemed to belong to the same community” (Casprini et al., 2020, p. 4)]. Further, the analysis will involve the identification of the main thematic clusters that emerge in this literature through the analysis of the keywords of each contribution; hence, the linkages is constructed based on the co-occurrence of the author’s keywords in the same paper. The higher the number of times in which the linkage occurs, the higher is the connection between the two themes. The research query keywords were excluded from the keywords analysis.

The analysis was conducted using VOSviewer 1.6.8 software (Van Eck e Waltman, 2010) as it allows to easily summarize and visualize our research needs and results.

We conducted the literature search on the SCOPUS database that allows to identify the relevant material based on the presence of keywords in the title, abstract or authors’ keywords.

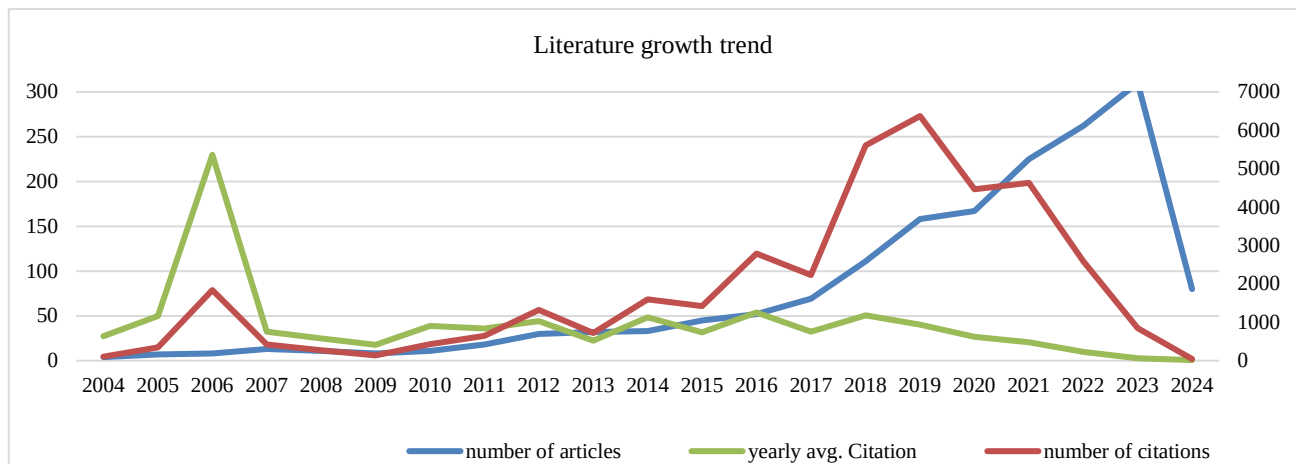
The string implemented to satisfy our research needs is: “TITLE-ABS-KEY (sustainab* AND (platform* OR "two-sided market*" OR "multi-sided market")) AND PUBYEAR > 2003 AND PUBYEAR < 2025 AND (LIMIT-TO (SUBJAREA, "BUSI")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English"))”. This should allow us to obtain all the main literature that has been written in the field of Management about concepts related to sustainability and platforms. In the second phase, we repeated the search by introducing an additional filter to narrow down the scope of analysis to the agri-food sector (The filter added to the main string is: “AND (agri* OR *food*)”).

The analysis was limited to the literature of the last 20 years, written in English in the form of journal’s article². The need to provide the most up-to-date view (including articles published in 2024) is due to the need to offer adequate support to the objectives of the agritech project within the National Recovery and Resilience Plan (PNRR), of which this research is part of.

Results. The main search (not just limited to the agri-food) on the SCOPUS has resulted in an overall number of publications equal to 1654. The descriptive analysis of the scientific literature has shown an increasing trend in both the number of publications and citations. Something to notice is the comparison between the trend of the number of publications, citations and their yearly average; despite, both citations and publications are increasing over time, the rising trend in the yearly average number of citations highlights a rapid decline of the scientific contribution after a few years (otherwise, older publications should have more citations due to the greater number of scientific contributions that followed them). On the other hand, the 4-year lag time between the peak in publications and citations which reflects the average publication period required for full dissemination may represent an issue in a field that evolves so rapidly. Indeed, a quick degree of obsolescence and a relatively slow level of dissemination could compromise the adequacy and usefulness of scientific contributions to the market and empirical applications, which, both in the digital and sustainability realms, are evolving at an exponential rate.

² Further, only documents with the availability of the DOI were kept in the analysis.

Fig. 1: Literature growth trend (all articles and citations)



The analysis on journal productivity shows that the *Journal of Cleaner Production* has a significantly higher number of scientific publications compared to all other journals. However, when we examine the average citations and the impact measure of each journal (measured as the weighted average citations per year), Tables 2 and 3 (in the appendix) demonstrate that the journal does not fall into either classification; the tables show that the most productive journals in terms of overall citations and yearly weighted citations are, respectively, the *MIS Quarterly: Management Information Systems* and *Group Decision and Negotiations*. However, while the former journal has 9 contributions in this journal, the latter only has one article³ with 197 citations included in the database. The only journals that count more than 5 articles within the top ten performer in the weighted citations list are the “*Journal of Business Research*” and “*Current Issues in Tourism*”.

Tab. 1: Most relevant Journals (in terms of number of articles) – Wide picture

Journal	Num. of articles	Tot. citations	Avg. citations	weighted impact ⁴
<i>Journal of Cleaner Production</i>	260	10015	38,5	1,35
<i>Technological Forecasting and Social Change</i>	34	2144	63,1	2,50
<i>Journal of Sustainable Tourism</i>	31	1331	42,9	2,18
<i>Emerald Emerging Markets Case Studies</i>	28	36	1,3	0,06
<i>International Journal of Production Economics</i>	23	1314	57,1	2,14
<i>Cities</i>	21	826	39,3	1,73
<i>Business Strategy and the Environment</i>	20	189	9,5	1,15
<i>International Journal of Production Research</i>	15	1284	85,6	2,21
<i>International Journal of Logistics Research and Applications</i>	15	339	22,6	2,82
<i>IEEE Transactions on Engineering Management</i>	15	125	8,3	1,22
<i>Journal of Retailing and Consumer Services</i>	13	329	25,3	1,61
<i>Journal of Business Research</i>	12	958	79,8	3,50
<i>Research in Transportation Business and Management</i>	11	143	13,0	0,67
<i>Transportation Research Part A: Policy and Practice</i>	10	178	17,8	1,62
<i>Technology in Society</i>	10	103	10,3	0,91

When we move to the thematic analysis constructed through the clustering methodologies identified in the previous sections, we see that the literature appears to be strongly interconnected.

Figure 1 provide a graphical overview of the main thematic clusters that emerged in the review. The reason why the keywords that would have emerged directly from the string that was used in SCOPUS were removed from the graphical analysis is to avoid trivial results; indeed, while it would be obvious to have platform and sustainability as the main outcome variable, the inclusion would have also altered the network interconnection due to the centrality and strength of their linkages.

The 5 most cited keywords, as highlighted in Table 2, are “Sharing Economy”, “Social Media”, “Innovation”, “Circular

³ Lai, L. S., & Turban, E. (2008). Groups formation and operations in the Web 2.0 environment and social networks. *Group Decision and negotiation*, 17, 387-402.

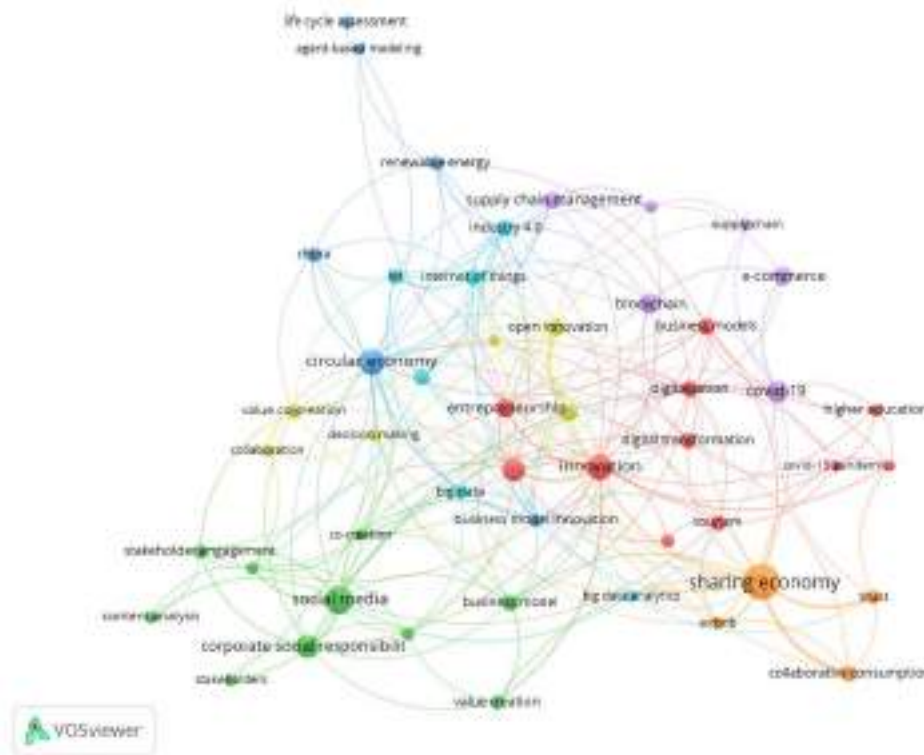
⁴ The weighted impact is constructed by dividing the average citation of the journal in the year by the overall average number of citations in the same year. Then, the final score is constructed as the simple mean of the values for every year.

$$\frac{\sum_{\text{year}} \text{Avg. citations of the journal in the year}}{\text{number of years}} / \text{Overall avg. citation in the year}$$

Economy” and “Crowdfunding”. While Innovation appears to be central in the network, highlighting the main research focus of this literature, the other keywords provide new organizational settings and tools that have gained prominence in the platform economy. The social media cluster is highly interconnected with the theory on stakeholder engagement, showing how this can contribute also to the sustainability field.

Sharing Economy, Circular Economy and Crowdfunding are business models and organizational that can contribute to the three sustainability goals since they contribute to the optimization of resources (financial and non) at different stages of the value chain.

Fig. 2: Keywords co-occurrence



Tab. 2: provides an overview of the most popular keywords

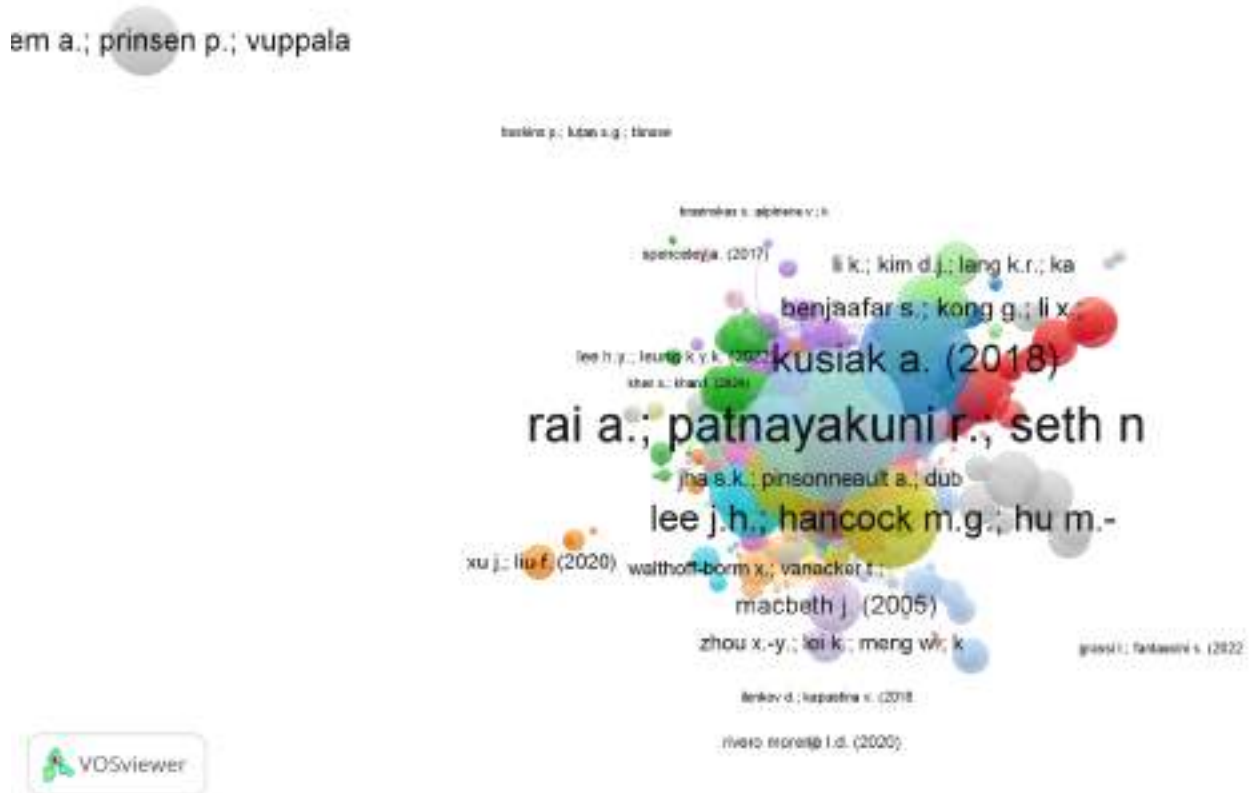
Keywords (all)	Occurrence	Keywords (agri-food)	Occurrence
Sharing Economy	79	Social media	6
Social media	48	Blockchain	5
Innovation	44	Communication	4
Circular Economy	43	Crowdfunding	4
Crowdfunding	34	Iot	4
Corporate Social Responsibility	33	Agent-Based Modelling	3
Covid-19	29	Retailing	3
Blockchain	27	Covid-19	3
Entrepreneurship	23	E-Commerce	3
E-commerce	22	Sharing Economy	3
Supply Chain Management	20	Innovation	3
Crowdsourcing	19	Life Cycle Assessment	3

The Bibliographic coupling analysis highlights a highly interconnected literature that, for obvious reasons, is held together by the concepts of sustainability and platform; however, within the identified clusters, it is possible to identify some themes of greater relevance that can summarize the core aspects of each group.

Within the major cluster (made by 83 articles), "Circular Economy" appears to be a crucial and overarching theme. The second largest group (made by 81 articles) mainly deepen the aspects related to “stakeholder engagement” and its role in fostering sustainable development and ensuring that the interests of various stakeholders are considered in decision-making processes. The third thematic cluster appears to be highly heterogeneous; however, two relevant aspects that emerge in the literature are related to the role of digital capabilities and institutional pressure in influencing sustainable development. The fourth group focuses on the development of digital platforms and the use of technologies for platform development. Several contributions provide empirical evidence on the topic of smart cities and the aid that technologies can bring to urban governance.

Focusing on the most relevant contributions that emerge in the remaining clusters, it is possible to provide further main research themes that are worth to mention. In relation to the relationship with the consumer, the marketing literature has leveraged platforms to create novel customer engagement models, focusing on enhancing environmental and social sustainability. This includes the growing adoption of the sharing economy across various sectors. Moreover, platforms can contribute to the economic sustainability of businesses by fostering consumer engagement and loyalty through initiatives like co-creation projects and crowdfunding.

Fig. 3: Bibliographic coupling



Focus on the agrifood sector

Digging the analysis into the agri-food industry, we find a relatively large literature as it comprehends 165 out of the overall number of publications (i.e. 10%). However, the literature appears to be highly disconnected, especially when we do not consider the string variable (Figure 4 in the Appendix).

If we consider that the overall literature is ten times larger than the one concerning the analysis of the agri-food industry, we can compare the relative relevance of the concept arising from the study.

While the role of “social media” and “Crowdfunding” appears to be relevant in both sectors, highlighting a proportional interest between the academic communities, the “Sharing Economy” appears to be relatively unexplored within the agri-food sector. Hence, despite some efforts has been made (Michellini et al., 2020; Asian et al., 2019; Moncef et al., 2021), there is space for further debate and opportunities in the agri-food sector in relation to this concept. Further, future research could focus on the role of retailers since none of the literature; indeed, even looking outside the database of analysis, only few and very recent contribution have tried to disentangle some aspects connected to this topic (Mai et al., 2022; Barykin et al., 2021).

Finally, focusing into the more specific task of this research, we analyse the academic contributions that, in this framework, have contributed to the retail industry. Saarijärvi et al. (2024) provides a similar conceptualization of the retailer as a driving force for the sustainable change by looking from a different perspective; indeed, differently from us, the authors use the literatures on reverse use of customer data, gamification, and customer experience to provide the wide context of their study. Another stream of literature focus on the consumer side by

looking at how to influence consumers consumption towards more sustainable standards (Xu et al., 2021; Samoggia et al., 2021). A larger stream of literature provides theoretical and empirical evidence on the potential in the optimization of the logistics and the supply chain management (Paciarotti et al., 2022; Cramer et al., 2023)

Finally, there are contributions aimed at investigating the implementation of the main business model grown throw the intensification of the platform economy in the retail industry; while Konhäusner (2021) provides some evidence on the use of crowdsourcing, Jo et al. (2024) and Mullick et al. (2021) provides insights on the economic, social and environmental efficacy of the digitalization of the retail store through the use of platforms.

Despite the cited literature provides several interesting insights, the relevance of the thematic under study requires a

greater effort in terms of innovation and value generation. For this reason, we believe that this research represents a useful step towards the development of future research lines that, as demonstrated, are currently underdeveloped and could lead to the achievement of the motivating objectives.

Research limitations. The paper has several research limitations. From a technical perspective the dataset could be expanded with additional data sources that could increase the size of the relevant literature and the methodology could be deepened with the systematic analysis, at least for the agri-food area. From a theoretical standpoint, while restricting the research to the confines of the platform concept aligns with our goal of exploring potential value-generating solutions within the currently absent realms of the food supply chain, particularly in relation to the retailer's role, this approach may have overlooked certain specificities associated with the food sector that extend beyond the platform concept. For this reason, future research will be focusing on the specific role of the retailer in driving the sustainable change. However, we believe it is prudent to start with the broader concept to identify unexplored opportunities that might otherwise be missed by narrowing the research focus solely to the specific context of interest.

Managerial implications. The paper provides interesting academic and managerial implications. First, of all, starting from the analysis of the literature on the role of platform as drivers for sustainability, it highlights some differences between the agrifood sector and the other industries. Furthermore, by providing a valuable overview of the potential role of platforms in the transition towards a more sustainable society, it may provide useful business opportunities that the agri-food industry, as well as in other sectors that have not been analysed in this context, could explore.

Originality of the paper. The paper is the first attempt to summarize and identify potential gap in the generation of sustainable value in the platform, and retail, industry. Furthermore, the utilization of a broad-spectrum approach to identify opportunities within a specific niche, although already employed in literature, synthesizes the potentialities of the retail sector that had not been explored from the platform perspective.

References

- ARGYRES N.S., BIGELOW L., NICKERSON J.A. (2015), "Dominant designs, innovation shocks, and the follower's dilemma", *Strategic Management Journal*, vol. 36, n. 2, pp. 216-234.
- ASIAN S., HAFEZALKOTOB A., JOHN J.J. (2019), "Sharing economy in organic food supply chains: A pathway to sustainable development", *International Journal of Production Economics*, vol. 218, pp. 322-338.
- ASSWAD J., HAKE G., MARX GÓMEZ J. (2016), "Overcoming the barriers of sustainable business model innovations by integrating open innovation. In Business Information Systems: 19th International Conference, BIS 2016, Leipzig, Germany, July, 6-8, 2016, Proceedings 19 (pp. 302-314)", Springer International Publishing.
- ATTRI R., BAIRAGI R. (2023), "Marketing organic products: challenges and opportunities for a sustainable living", *Emerald Emerging Markets Case Studies*, vol. 13, n. 1, pp. 1-30.
- BARYKIN S.Y., KAPUSTINA I.V., KALININA O.V., DUBOLAZOV V.A., ESQUIVEL C.A.N., ALYAROVNA N.E., SHARAPAEV P. (2021), "The sharing economy and digital logistics in retail chains: Opportunities and threats", *Academy of Strategic Management Journal*, vol. 20, pp. 1-14.
- BOHNSACK R., PINKSE J., KOLK A. (2014), "Business models for sustainable technologies: Exploring business model evolution in the case of electric vehicles", *Research Policy*, vol. 43, n. 2, pp. 284-300.
- BOULSTRIDGE E., CARRIGAN M. (2000), "Do consumers really care about corporate responsibility? Highlighting the attitude—behaviour gap", *Journal of communication management*, vol. 4, n. 4, pp. 355-368.
- CASPRINI E., DABIC M., KOTLAR J., PUCCI T. (2020), "A bibliometric analysis of family firm internationalization research: Current themes, theoretical roots, and ways forward", *International Business Review*, vol. 29, n. 5, pp. 1-18
- CRAMER F., FIKAR C. (2023), "Investigating crowd logistics platform operations for local food distribution", *International Journal of Retail & Distribution Management*.
- EL BILALI H. (2019), "Research on agro-food sustainability transitions: where are food security and nutrition? Food Security: The Science, Sociology and Economics of Food Production and Access to Food", *The International Society for Plant Pathology*, vol. 11, n. 3, pp. 559-577.
- GUPTA R., SINHA P.K., SAHU A., SOOD V. (2021), "Success drivers of urban haats selling craft products", *International Journal of Rural Management*, vol. 17, n. 1, pp. 120-139.
- JO H., SHIN J. (2024), "Evidence-based equilibrium analysis of two-sided market in food delivery industry", *Journal of Retailing and Consumer Services*, vol. 77, 103646.
- JUVAN E., DOLNICAR S. (2014), "The attitude—behaviour gap in sustainable tourism", *Annals of tourism research*, vol. 48, pp. 76-95.
- KONHÄUSNER P. (2021), "Crowdsourcing in Sustainable Retail—A Theoretical Framework of Success Criteria", *Journal of Risk and Financial Management*, vol. 14, n. 2, pp. 87.
- LAUKKANEN M., PATALA S. (2014), "Analysing barriers to sustainable business model innovations: Innovation systems approach", *International Journal of Innovation Management*, vol. 18, n. 06, pp. 1440010.
- MAI E.S., KETRON S. (2022), "How retailer ownership of vs. collaboration with sharing economy apps affects anticipated service quality and value co-creation", *Journal of Business Research*, vol. 140, pp. 684-692.
- MICHELINI L., GRIECO C., CIULLI F., DI LEO A. (2020), "Uncovering the impact of food sharing platform business models: a theory of change approach", *British Food Journal*, vol. 122, n. 5, pp. 1437-1462.
- MONCEF B., MONNET DUPUY M. (2021), "Last-mile logistics in the sharing economy: sustainability paradoxes", *International Journal of Physical Distribution & Logistics Management*, vol. 51, n. 5, pp. 508-527.
- MULLICK S., RAASSENS N., HAANS H., NIJSSEN E.J. (2021), "Reducing food waste through digital platforms: A quantification of cross-side network effects", *Industrial Marketing Management*, vol. 93, pp. 533-544.

- PACIAROTTI C., MAZZUTO G., TORREGIANI F., FIKAR C. (2022), “Locally produced food for restaurants: a theoretical approach for the supply chain network design”, *International Journal of Retail & Distribution Management*, vol. 50, n. 13, pp. 164-183.
- RIETVELD J., SCHILLING M.A. (2021), “Platform competition: A systematic and interdisciplinary review of the literature”, *Journal of Management*, vol. 47, n. 6, pp. 1528-1563.
- SAMOGGIA A., BERTAZZOLI A., RUGGERI A. (2019), “Food retailing marketing management: social media communication for healthy food”, *International Journal of Retail & Distribution Management*, vol. 47, n. 9, pp. 928-956.
- SHEN Z., WANG S., BOUSSEMART J.P., HAO Y. (2022), “Digital transition and green growth in Chinese agriculture”, *Technological Forecasting and Social Change*. 10.1016/j.techfore.2022.121742.
- SAARIJÄRVI H., SPARKS L., NÄRVÄNEN E., ERKKOLA M., FOGELHOLM M., NEVALAINEN J. (2024), “From transactions to transformations: exploring transformative food retailing”, *The International Review of Retail, Distribution and Consumer Research*, vol. 34, n. 1, pp. 104-121.
- STUBBS W., COCKLIN C. (2008), “Conceptualizing a “sustainability business model”. *Organization & environment*, vol. 21, n. 2, pp. 103-127.
- SULTAN P., TARAFDER T., PEARSON D., HENRYKS J. (2020), “Intention-behaviour gap and perceived behavioural control-behaviour gap in theory of planned behaviour: Moderating roles of communication, satisfaction and trust in organic food consumption”, *Food Quality and Preference*, vol. 81, 103838.
- WIEDERHOLD M., MARTINEZ L.F. (2018), “Ethical consumer behaviour in Germany: The attitude-behaviour gap in the green apparel industry”, *International journal of consumer studies*, vol. 42, n. 4, pp. 419-429.
- XU Z., ISLAM T., LIANG X., AKHTAR N., SHAHZAD M. (2021), “‘I’m like you, and I like what you like’ sustainable food purchase influenced by vloggers: A moderated serial-mediation model”, *Journal of Retailing and Consumer Services*, vol. 63, 102737.

Appendix

Tab. 2: 10 most impactful journals (counted as average number of citations)

Journal	Number of articles	Tot. citations	Avg. citations	weighted impact
MIS Quarterly: Management Information Systems	9	1999	222,1	2,33
Group Decision and Negotiation	1	197	197,0	7,91
Journal of Interactive Marketing	1	178	178,0	4,04
Supply Chain Management	3	480	160,0	4,02
Business Ethics Quarterly	1	119	119,0	0,52
International Journal of Information Management	3	340	113,3	4,46
Academy of Management Annals	1	104	104,0	5,06
Annals of Tourism Research	2	202	101,0	2,02
Management Science	5	504	100,8	2,38
Journal of Supply Chain Management	1	99	99,0	1,84

Tab. 3: 10 most impactful journals (counted as weighted average number of citations per year)

Journal	Number of articles	Tot. citations	Avg. citations	weighted impact
Group Decision and Negotiation	1	197	197,0	7,91
Academy of Management Annals	1	104	104,0	5,06
International Journal of Productivity and Performance Management	3	13	4,3	4,75
Journal of Facilities Management	2	26	13,0	4,73
International Journal of Information Management	3	340	113,3	4,46
Journal of Interactive Marketing	1	178	178,0	4,04
Supply Chain Management	3	480	160,0	4,02
Innovation and Green Development	1	10	10,0	3,64
Journal of Business Research	12	958	79,8	3,50
Current Issues in Tourism	5	184	36,8	3,40

Fig. 4: Keywords Co-occurrence without the use of the string variable used on SCOPUS for the literature search

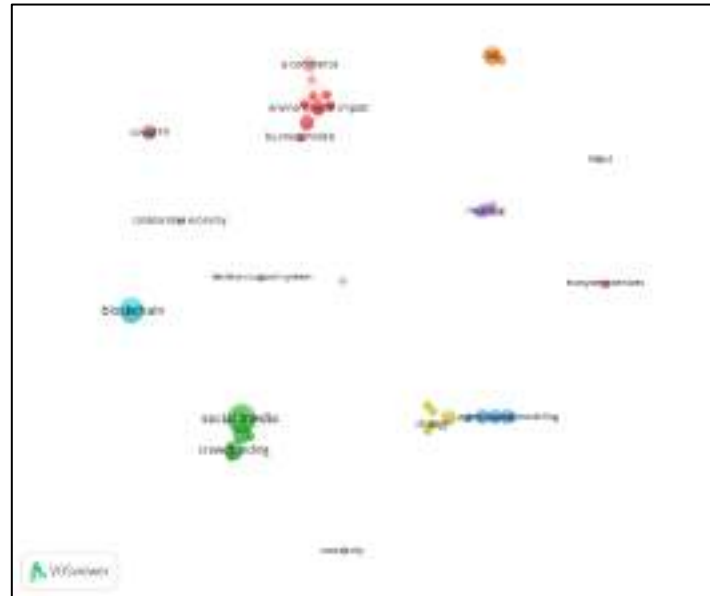
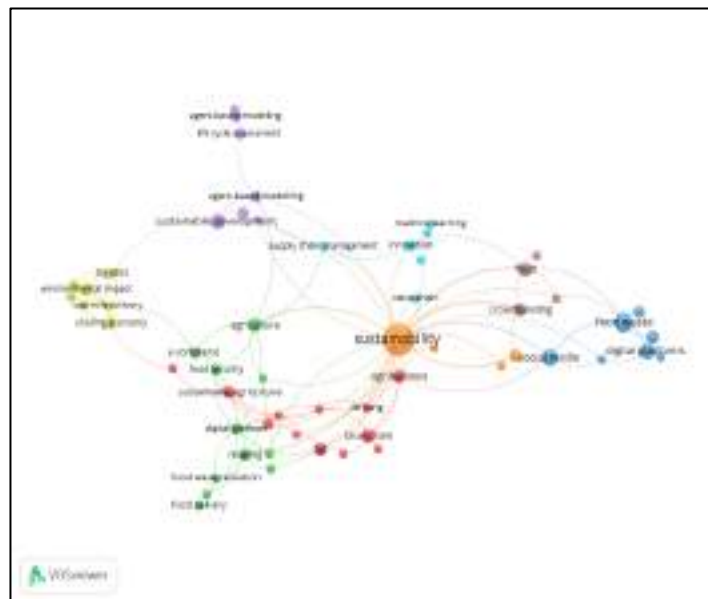


Fig. 5: Keywords Co-occurrence with the use of the string variable used on SCOPUS for the literature search



The right kiosk across different generations!

A quantitative study in the retailing food sector

LUCA CORINALDESI¹ GENNARO IASEVOLI² CHIARA OTTOLENGHI³

Abstract

The aim of this paper is to understand, through a quantitative study, the motivations underlying the use of kiosks while purchasing retailing food products. The study may be interesting because kiosks in the retailing food industry can increase brand loyalty and make a phygital experience more enjoyable.

Methodologically, the study was conducted by carrying out quantitative research with 874 valid surveys. The analysis revealed some significant diversities; in particular, customers positively would use kiosks when ordering food products in order to save time, have personalized discounts and have product combinations. The analysis also reveals generational diversities in terms of use's preferences: the younger segment (Generation Z and Y) is interested in using them in order to speed up the purchase process, while the consumers born in Generation X prefer to have suggestions on product combinations and specific promotions when using kiosks.

From a managerial standpoint, our findings suggest that businesses should undertake precise customer segmentation to identify and cater to the diverse needs of consumers who are inclined to use kiosks during their retailing food purchasing journey. This strategy is imperative for companies aiming to leverage kiosk technology to enhance customer satisfaction and loyalty effectively.

The study opens the door for future research to examine the effects of varying kiosk designs on consumer purchase motivation, advocating for a deeper qualitative exploration into the attitudes of those engaged with phygital experiences. This investigation not only contributes to the academic literature by offering novel insights into consumer motivations for using food purchasing kiosks but also provides practical guidance for businesses looking to adapt to and capitalize on the evolving retail landscape.

Key words: *Phygital; Kiosk; Generational study; Quantitative analysis; Customer experience; Self-service technology.*

Framing of the research. *In recent years, numerous studies have highlighted a marked increase in the velocity of various industries, attributing a significant portion of this growth to the emergence of the phygital concept. This concept exemplifies the merging of physical and digital realms, evident in practices such as online ordering with subsequent in-store pickup or home delivery (Wu and Wu, 2015). Research conducted in Italy (IlSole24Ore, 2021) reveals that a considerable 74% of consumers have engaged in phygital purchasing activities in recent times.*

Present-day businesses are actively pursuing the creation of integrated customer experiences that bridge the digital and physical domains, thereby enriching the quality of the shopping journey. The phygital phenomenon mirrors the current consumer dilemma-balancing the allure of traditional shopping with the efficiencies of digital channels. This shift represents a significant transformation in socio-economic practices (IlSole24Ore, 2021), driven by the digital sphere's capacity to cater to consumer needs with innovative services and practices that have become indispensable. A majority of Italian shoppers are of the opinion that digital innovations could significantly enhance the retail experience, through in-store promotions, product discovery, and navigation assistance, along with the provision of personalized service offerings. The essence of a phygital customer experience transcends mere dissatisfaction resolution, aiming instead to discover and orchestrate moments of profound significance and delight in the consumer journey.

Despite the scarcity of scholarly attention towards the phygital impact on the retailing food industry, a growing body of businesses within this realm are adopting phygital strategies in response to escalating consumer demand. Recent findings indicate that 37% of individuals express interest in experiencing a phygital culinary venture (IlSole24Ore, 2024a), leveraging virtual and augmented reality to enrich the dining ambiance with customized lighting, fragrances, and auditory elements, thus enhancing the engagement with culinary heritage. The retailing industry is increasingly gravitating towards phygital engagements to captivate a broader audience. According to further studies (IlSole24Ore,

¹ LUMSA University
e-mail: l.corinaldesi.dottorati@lumsa.it

² Lumsa University
e-mail: iasevoli@lumsa.it

³ LUMSA University
e-mail: c.ottolenghi@lumsa.it

2024b), an anticipated 70% of restaurateurs in 2024 will expand their use of chatbots and content generation tools for more personalized customer interactions. The cornerstone of contemporary restaurant success lies in technological innovation, encompassing advanced digital menus, social media platforms, booking and payment applications, and notably, kiosks that offer multifaceted assistance to patrons (IlSole24Ore, 2024b).

The introduction of interactive kiosks in retailing demonstrates the dual benefits of increased sales and improved customer experiences. These interactive kiosks offer greater control and customization of orders to customers, reduce waiting times, and enable retailers to serve more customers during peak hours, thereby easing the workload on staff and enhancing overall customer satisfaction (Akcamlar, 2020). Moreover, the research emphasizes the necessity of balancing efficiency with the enjoyment aspects of shopping, underlining the importance of a phygital strategy that transcends mere transactional interactions to deeply understand and cater to the real reasons' customers utilize kiosks (Kim et al., 2023).

Building on these premises and the fact that consumers are increasingly interested in the phygital world, digital advancements could enhance the in-store shopping experience by spotlighting offers and promotions within the physical store, facilitating product search and navigation, it was decided to delve deeper from a general perspective and then specifically investigate the generational differences in the motivations behind consumers' use of phygital tools like kiosks when purchasing retailing food products. Therefore, the objective of this study is to understand, through a quantitative analysis, the motivations underlying the use of kiosks in the purchase of retailing food products.

Purpose of the paper. Interactive kiosks are key to phygital retailing, which is designed to provide a seamless customer experience by integrating multiple online and offline retail channels (Batat, 2022). They enhance the shopping experience by directly engaging consumers, offering them autonomy, reducing their waiting time, and boosting their satisfaction and sense of empowerment (Del Vecchio et al., 2023). For example, at a kiosk, customers have the ability to place a physical item onto a digital display to access comprehensive details such as the item's features, available stock, color options, and sizes, and to make comparisons with other products on the same screen (Banik, 2021). The effectiveness of phygital kiosks in retail is further underscored by their role in mitigating risk issues and engaging customers more deeply with the retail environment, promoting a positive attitude towards technology acceptance, enriching the overall phygital retail experience. By providing adequate information and ample trial options, phygital retail stores encourage customers to spend more time evaluating products, thereby improving their knowledge and decision-making confidence (Banik, 2021). Interactive kiosks are also utilized as self-checkout stations in retail, streamlining the checkout experience. These kiosks are designed to eliminate the need for manual barcode scanning by consumers. Instead, customers can place their items on a specific part of the kiosk, where a radio-frequency identification (RFID) tag attached to the product is automatically read, seamlessly gathering price and product information. This approach not only reduces in-store queues but also significantly cuts down on wait times, enhancing the efficiency and overall quality of the shopping journey (Bonfanti et al., 2023).

Phygital technologies are employed to optimize the efficiency of the shopping experience. Yet, the research conducted by Guzzetti et al. (2024) points out that focusing solely on practical features may diminish the entertaining aspects of shopping, which indicates the importance of striking a balance between functionality and enjoyment to boost customer satisfaction and involvement in retail environments. In the luxury sector, empirical findings confirm that interactive storefronts can enhance hedonic value in luxury retail stores, supporting the idea that luxury brands may create multiplatform storytelling experiences (Lawry, 2022). For instance, the "Next Era" experience by Valentino and the "My Gommio" interface from Tod's demonstrate how interactive kiosks not only allow customers to instantly browse and buy products from global inventories but also to participate actively in designing their own custom (Newman, 2017). This evolution turns retail spaces into venues where luxury fashion consumers can display their knowledge and dominate the luxury shopping scene, all in pursuit of fulfilling their desires for enjoyment (Lawry, 2022). Smart mirrors in Thom Browne's fitting rooms represent another innovative example. These mirrors enhance the shopping experience by identifying products, suggesting merchandise pairings, and proposing customized looks (Kansara, 2017). They provide shoppers with instant satisfaction, allowing them to define their style on their own terms, without waiting for feedback from a salesperson or relying on them to fetch more items from the sales floor (Lawry, 2022).

In the food service industry, the adoption of on-site self-service technologies, such as tablets and kiosks, has transformed the way services are delivered, enhancing efficiency and customer satisfaction (Pai et al., 2022). Between 2018 and 2021, the adoption of self-service kiosks in restaurants rose significantly from 1.7% to 5.5%, indicating a broader trend towards automation and technology adoption within the retailing food service industry. This shift led to a greater reliance on touchless services (Yoon, 2023). Interactive kiosks in quick-service restaurants present menu options for customers to choose from, offer deals based on the customer's selections, and process payments. Similar to a traditional register manned by a cashier, the kiosk forwards the completed order to the kitchen's computer system once payment has been made. At establishments like McDonald's, the introduction of interactive kiosks combined with mobile ordering apps has led to an increase in sales, improved customer experience by offering greater control and customization of orders and has helped reduce waiting times. Furthermore, these technologies have enabled restaurants to serve more customers during peak hours, easing the workload on staff and enhancing overall customer satisfaction (Akcamlar, 2020). Restegar et al. (2021) investigated customer perceptions of self-service kiosks in quick-service restaurants. Their study aimed to understand factors driving customer use and developed a model integrating the Technology Acceptance Model (TAM) and satisfaction models to analyze customers' behavioral intentions. Using an online survey of McDonald's customers, they found that perceived usefulness and trust significantly affect user enjoyment and satisfaction (Restegar et al., 2021). In the study made by Na et al. (2021) it has been extended the inquiry to the realm of demographic influences, specifically gender, on the adoption and continued use of self-service kiosks. Their research scrutinizes different aspects

of the Technology Readiness Index (TRI) aspects (optimism, innovativeness, discomfort, insecurity) and the intention to continue using self-service kiosks in restaurants. They found that innovativeness and optimism enhance, while discomfort decreases, the intention to keep using kiosks. Insecurity didn't significantly affect usage intentions. Importantly, gender was a key factor, with men more likely to continue using kiosks than women, especially regarding the impact of innovativeness on usage intentions, suggesting gender-specific considerations in kiosk design and implementation. Furthermore, Marinakou et al. (2023) conducted an investigation into the factors affecting customer satisfaction and their willingness to reuse self-service kiosks in Bangkok's fast-food industry. Utilizing a quantitative method, the study gathered data through an online survey, reaching a diverse demographic in terms of age and prior kiosk experiences. The findings indicated a significant acceptance and satisfaction with kiosk technology, suggesting that users are inclined to use it again. However, the study did not specifically examine how customer experiences and satisfaction with self-ordering kiosks differ across age groups (Marinakou et al., 2023). Moreover, Kim et al. (2023) research, which aimed to explore how self-service kiosks affect customer experiences and intentions to revisit quick-service restaurants, provides crucial insights into the factors driving consumer use of self-service kiosks. Gender-specific analysis indicates a disparity in attribute weighting for kiosks between men and women. Men are shown to favor customization to a greater extent, whereas design holds more significance for women. However, the outcome of the analysis suggests that enjoyment is valued by both men and women alike. Despite restaurants being praised for their health security measures, they were criticized for lacking in design and enjoyment aspects, with a notable impact on improving the kiosk experience for female customers (Kim et al., 2023). This research suggests that the retailing food sector, akin to the luxury sector, should adopt a phygital strategy that transcends efficiency by deeply understanding the real reasons customers utilize kiosks.

The current body of literature highlights significant interest in incorporating kiosks into phygital strategies, appealing to a broad audience. Although some studies suggest variations in technology adoption, it is important to note that there is not sufficient research to conclusively determine preferences across different age groups. Exploring the factors that impact customer loyalty towards quick-service retail outlets, particularly through the use of kiosks, and examining the variation in these motivational factors across different generations are essential for acquiring a more profound understanding of how phygital strategies can be effectively implemented within the retailing food industry. Basing on these premises, we developed the research questions as follows:

RQ1: Does the degree of interest in kiosks vary across different generations?

RQ2: To what extent does a positive attitude towards technology influence customers' motivation to use kiosks for purchasing retailing food products?

RQ3: How does the motivation for using kiosks to buy retailing food products vary across different generations?

Methodology. To better explore the phenomenon and address the research questions, a quantitative analysis was conducted by administering a questionnaire to 874 respondents. This analysis was performed using SPSS v. 28 software and involved first conducting an independent sample T Test to compare the means of two distinct groups to determine if significant differences exist between them. Additionally, a repeated-measures ANOVA analysis was conducted, as this method allows for the examination of differences between means within pairs using a single inferential test, thereby revealing which variable is most influential and where significant differences may be found. Finally, a regression analysis was performed to understand the relationship between a dependent variable and one or more independent variables. Methodologically, this quantitative study has been conducted through the administration of a survey in December 2023 through Google Forms. Participants were not incentivized and were contacted by social platforms. For data collection, a 20 questions' survey organized into different sections was administered. In order to offer an easier way to answer to questions, we used for some of them a Likert-type scale with a range of 1 to 7 where 1: Strongly disagree and 7: Strongly agree (Ayyıldız et al., 2022).

Following there are the details of the questions we are going to analyze in this paper. In order to understand the degree of interest of using technologies, we asked respondents how much they would be interested in using technology to ease their purchase; they had the possibility to answer based on the Likert scale mentioned above.

The survey construction was undertaken subsequent to a careful review of the pertinent literature, with a focus on identifying analyses deemed interesting from the authors' perspective. To comprehend the motivations toward the use of kiosks when ordering or buying in retailing food shop, we conducted additionally an empirical analysis on retailing companies offering kiosk experiences and a literature analysis on papers regarding this topic (Banik, 2021; Baratta et al., 2022). Building upon this empirical and literature analyses it was asked (on the 7-leven Likert scale) which motivations would respondents be interested when using kiosks: 1. Speed up the ordering process; 2. Speed up the combination of products; 3. Calculate calories; 4. Offer additional products; 5. Show QR codes with personalized information; 6. Show QR codes with personalized discounts; 7. Offer specific product combinations; 8. Offer specific promotions.

The survey's questions were tested by three academic experts and two managers who had experience in phygital research.

Participants were contacted, initially through LinkedIn, Facebook, WhatsApp, and email, to provide information about the research project and invite completion of a questionnaire administered online. This means that we reached people from different socio demographic backgrounds. Each respondent was more than 18 years old. The survey was sent with the information about the purpose of the research and an introductory message was used to assure respondents of the anonymity of all data and the confidentiality of the study (Chang et al., 2010). All individuals who, at the time of

the survey, were of legal age and had utilized a kiosk in the last 6 months in the retailing, were considered ideal respondents.

Totally, 1000 surveys were collected of which 126 were discarded because they were not complete. Thus, the total number of valid answers was 874.

The sociodemographic characteristics of the investigated sample are shown in Table 1.

Table 1: Sociodemographic characteristics of the sample

	Characteristics	Number of times (n=874)	Percentage (%)
Gender	Female	558	64%
	Male	316	36%
Age	1996-2004 (GEN Z)	641	73%
	1981-1995 (GEN Y)	100	12%
	1965-1980 (GEN X)	133	15%

Results. To address the first research question, and understand if the degree of interest in kiosks vary across different generations, we have done a T independent test considering as variable of the test the degree of interest in using kiosks and as grouping variables the different generations (Generation Z, Generation Y and Generation X). As showed in table 2, there is a significant difference only between the Generation Z and Generation X respondents. Meaning that between the other generation cohorts there were not important difference.

Table 2: T Test of the degree of interest in kiosks across different generations

Variables	F	Sign.
Gen Z Vs. Gen Y	1.698	0.193
Gen Y Vs. Gen X	0.223	0.637
Gen Z Vs. Gen X	4.483	0.035

In order to answer the second research question, and understand to what extent a positive attitude towards technology influences customers' motivation to use kiosks for purchasing retailing food products, it is pertinent to identify the motivations driving customers to seek a phygital experience through the use of kiosks when purchasing retailing food products. Therefore, a repeated-measures ANOVA has been made to control and test the differences between the following 8 variables (Speed up the ordering process; Speed up the combination of products; Calculate calories; Offer additional products; Show QR codes with personalized information; Show QR codes with personalized discounts; Offer specific product combinations; Offer specific promotions), with the dependent variable regarding the appreciation of the use of technology for making purchases. Each variable considered, as shown in table 3, is significant.

Table 3: Motivations toward using kiosks

Variables	F	Sign.
Speed up the ordering process	34.554	<.001
Speed up the combination of products	24.800	<.001
Calculate calories	9.971	<.001
Offer additional products	21.866	<.001
Show QR codes with personalized information	22.311	<.001
Show QR codes with personalized discounts	28.729	<.001
Offer specific product combinations	23.888	<.001
Offer specific promotions	23.364	<.001

To determine to what extent a positive attitude towards technology influences customers' motivation to use kiosks for purchasing food products and therefore answer deeper to RQ2, we carried out a linear regression analysis where the appreciation of the use of technology for making purchases is the dependent variable and the 8 variables are the independent ones. The regression model is significant, $F(8;865) = 32.987$; $p < .001$, with an R^2 equal to .234. Furthermore, as shown in the left part of table 4, three ("Speed up the ordering process", "Show QR codes with personalized discounts" and slightly significant "Offer additional products") out of the eight variables have a positive and significant Beta value on the appreciation of the use of technology for making purchases, indicating that they positively would use kiosks in order to first of all save time, have personalized discounts and have additional products offered.

To answer RQ3, we thought it intriguing to ascertain whether, based on different generations, any variable stood out as particularly noteworthy. Thus, we conducted a regression analysis across various generational cohorts. All the regressions are significant. For the Generation Z, specifically those born between 1996-2004, the regression model is significant, $F(8;632) = 22.534$; $p < .001$, with an R^2 of .222. Moving to Generation Y, born from 1981-1995, the regression model is significant, $F(8;91) = 13.257$; $p < .001$, with an R^2 of .255; Generation X, born between 1965-1980, also shows a significant regression model, $F(8;124) = 9.172$; $p < .001$, with an R^2 of .372.

As it can be observed in table 4, each generation exhibits distinct preferences regarding their motivations for using kiosks when making a food product purchase. The Generation Z demonstrates a preference for “Speed up the ordering process,” “Offer additional products.” and “Show QR codes with personalized information”. Generation Y, on the other hand, reaffirms the interest in “Speed up the ordering process” and also exhibits interest in “Show QR codes with personalized discounts”. Finally, it is noteworthy that those born in Generation X “Offer specific product combinations” and “Offer specific promotions”.

Table 4: Regression model between technology’s appreciation and motivation variables based on different generation

Variables	General			1996-2004			1981-1995			1965-1980		
	Beta	F	Sign.	Beta	F	Sign.	Beta	F	Sign.	Beta	F	Sign.
Costant		10.703	<.001		7.898	<.001		3.602	<.001		5.388	<.001
Speed up the ordering process	0.250	5.305	<.001	0.249	4.734	<.001	0.302	2.285	0.025	0.289	1.718	0.088
Speed up the combination of products	0.031	0.626	0.531	-0.008	-0.139	0.890	0.121	0.838	0.404	0.129	0.741	0.460
Calculate calories	-0.062	-1.638	0.102	-0.066	-1.545	0.123	-0.093	-0.781	0.437	0.095	0.771	0.442
Offer additional products	0.087	1.923	0.055	0.119	2.295	0.022	0.075	0.522	0.603	-0.107	-0.859	0.392
Show QR codes with personalized information	0.075	1.590	0.112	0.103	1.976	0.049	-0.236	-1.338	0.184	0.052	0.380	0.705
Show QR codes with personalized discounts	0.128	2.314	0.021	0.074	1.206	0.228	0.394	2.185	0.031	0.077	0.465	0.642
Offer specific product combinations	0.089	1.721	0.086	0.043	0.736	0.462	0.066	0.380	0.705	0.416	3.014	0.003
Offer specific promotions	-0.041	-0.735	0.463	0.040	0.659	0.510	-0.136	-0.665	0.507	-0.314	-2.114	0.037

Significant diversity emerged from the analyses. Regarding the degree of interest in using kiosks across different generations, there is a significant difference only between the Generation Z and Generation X respondents. Concerning motivation toward using phygital devices, all variables considered in the ANOVA analysis were found to be significant for respondents; moreover, as resulted from the regression analysis three out of the eight variables have a positive and significant Beta value on the appreciation of the use of technology for making purchases, indicating that they positively would use kiosks when ordering food products in order to save time, have personalized discounts and have additional products offered. In addition, in terms of how generations exhibit distinct preferences regarding their motivations for using kiosks when making a retailing product purchase, Generation Z and Y are interested in using them in order to speed up the purchase process, while Generation x does not exhibit interest in saving time. This means that as age decreases, the interest in using kiosks to save time increases. Regarding other motivations, Generation Z demonstrates a preference also for having additional products offered and have personalized information. Generation Y, on the other hand, exhibits interest in having personalized discounts. Finally, Generation X would like to have offers with specific product combinations and specific promotions.

Research limitations. The study has the merit of contributing to the advancement of knowledge related to the topic of phygital, specifically kiosks, in the retailing food industry, a topic that is still under-researched in the literature. However, the interpretation and generalization of the results presented must take into account some limitations. First, the sample may not be representative of the Italian population, and the analysis did not take a cross-sectoral approach. Moreover, some types of motivations to use kiosks were tested only by few academic experts and managers who had experience in phygital research.

Managerial implications. In terms of managerial implications, the consistency of findings and the data collection methods underscore the necessity for food retailing companies to strategically comprehend and harness consumer motivations for utilizing kiosks in purchasing their food products.

Key insights reveal that consumers are primarily motivated by the willingness to buy other related products, the possibility to save time and to offer customer personalized discounts, while the methods of phygital often affect both the cost and time of supply as well as generate new challenges related to the management of a more complex and changing environment. These factors not only enhance the customer experience but also serve as pivotal elements in driving sales and fostering brand loyalty. Through these results, enterprises can develop and offer additional products, personalized discounts, and promotions that appeal to different generational preferences. Retailers can consider integrating kiosk technology in their stores, especially targeting younger generations, to enhance the shopping experience and increase customer engagement.

Originality of the paper. Phygital experiences are developing very fast in the last years among businesses, including in the retailing food industry. The adoption of interactive kiosks has led to significant benefits, including increased sales, improved customer experiences, and enhanced operational efficiency. Moreover, studies such as those by Rastegar et al. (2021) and Na et al. (2021) underscore the importance of understanding customer perceptions and demographic influences on technology adoption to maximize the effectiveness of kiosks.

However, especially in the retailing food industry, the use of kiosks by consumers often concerns the possibility to save time, have personalized discounts and have product combinations. Kiosks thus become instrumental in creating customer value and for this reason they are increasingly developed by retailing food restaurants, especially when they are point of a chain

References

- AYYILDIZ F., ŞAHİN G. (2022), "Effect of social media addiction on eating behavior, body weight and life satisfaction during pandemic period", *British Food Journal*.
- AKCAM B.K. (2020), "Improving order processes with information technology: McDonald's case", *Journal of Information Technology Teaching Cases*, vol. 10, n. 2, pp. 102-107.
- BANIK S. (2021), "Exploring the involvement-patronage link in the phygital retail experiences", *Journal of Retailing and Consumer Services*, 63, 102739.
- BARATTA R., BONFANTI A., CUCCI M.G., SIMEONI F. (2022), "Enhancing cultural tourism through the development of memorable experiences: the "Food Democracy Museum" as a phygital project", *Sinergie Italian Journal of Management*, vol. 40, n. 1, pp. 153-176.
- BATAT W. (2022), "What does phygital really mean? A conceptual introduction to the phygital customer experience (PH-CX) framework", *Journal of Strategic Marketing*, pp. 1-24.
- BONFANTI A., VIGOLO V., VANNUCCI V., BRUNETTI F. (2023), "Creating memorable shopping experiences to meet phygital customers' needs: evidence from sporting goods stores", *International Journal of Retail and Distribution Management*, vol. 51, n. 13, pp. 81-100.
- CHANG S., VAN WITTELOOSTUIJN A., EDEN L. (2010), "From the editors: Common Method Variance in International Business Research", *Journal of International Business Studies*, vol. 41, n. 2, pp. 178-184.
- DEL VECCHIO P., SECUNDO G., GARZONI A. (2023), *Phygital technologies and environments for breakthrough innovation in customers' and citizens' journey. A critical literature review and future agenda*. Technological Forecasting and Social Change, 189.
- GUZZETTI A., CRESPI R., BELVEDERE V. (2024), "Phygital luxury experiences. A correspondence analysis on retail technologies", *International Journal of Consumer Studies*, vol. 48, n. 2.
- KANSARA V.A. (2017), *Inside Farfetch's Store of the Future | BoF*. <https://www.businessoffashion.com/articles/technology/inside-farfetchs-store-of-the-future/>
- KIM J.K., YANG J.J., LEE Y.K. (2023), "How Do Self-Service Kiosks Improve COVID-19 Pandemic Resilience in the Restaurant Industry?", *Sustainability* (Switzerland), vol. 15, n. 13, pp. 10168.
- ILSOLE24ORE (2021), *L'esperienza di acquisto è sempre più "phygital": ecco perché l'incontro fra i canali tradizionali e il digitale può essere un vantaggio per i consumatori*. www.ilsole24ore.it
- ILSOLE24ORE (2024)a, *Ecco come l'intelligenza artificiale rivoluziona i ristoranti (e fa crescere gli affari)*, www.ilsole24ore.it
- ILSOLE24ORE (2024)b, *Alla scoperta delle tradizioni culinarie. Anche in forma digitale*. www.ilsole24ore.it
- LAWRY C.A. (2022), "Futurizing luxury: an activity-centric model of phygital luxury experiences", *Journal of Fashion Marketing and Management*.
- MARINAKOU E., GIOUSMPASOGLU C., SAKULRUNGSAP K. (2023), "Customer Intention To Reuse Self-Ordering Kiosks In Fast-Food Restaurants: The Case Of Bangkok, Thailand", *Tourism and Hospitality Management*, vol. 29, n. 4, pp. 545-559.
- NA T.K., LEE S.H., YANG J.Y. (2021), "Moderating effect of gender on the relationship between technology readiness index and consumers' continuous use intention of self-service restaurant kiosks", *Information* (Switzerland), vol. 12, n. 7, pp. 280.
- NEWMAN J. (2017), *Custom-order Tod's iconic Gommino Driving Shoe - Robb Report*. <https://robbreport.com/style/fashion/custom-tods-gommino-shoes-2724171/>
- PAI C.K., WU Z.T., LEE S., LEE J., KANG S. (2022), "Service Quality of Social Media-Based Self-Service Technology in the Food Service Context", *Sustainability* (Switzerland), vol. 14, n. 20, pp. 13483.
- RASTEGAR N., FLAHERTY J., LIANG L.J., CHOI H.S.C. (2021), "The adoption of self-service kiosks in quick-service restaurants", *European Journal of Tourism Research*, vol. 27, pp. 1-23.
- YOON C. (2023), "Technology adoption and jobs: The effects of self-service kiosks in restaurants on labor outcomes", *Technology in Society*, vol. 74.
- WU I.L., WU S.M. (2015), "A strategy-based model for implementing channel integration in e-commerce: An empirical examination", *Internet Research*, vol. 25, n. 2, pp. 239-261.

Retail Internationalization and Innovation: A systematic literature review

MICHELE BADOLATO¹

Abstract

Retail internationalization (RI) has garnered significant scholarly attention since the late 1980s, yet a comprehensive systematic review of the literature remains lacking. Building upon previous efforts, this paper undertakes an exhaustive examination of RI literature spanning three decades. Through bibliographic, network, and cluster analyses, we aim to elucidate key themes, trends, and gaps within the discourse. Notably, our study tries to extend beyond summarization to explore the underexplored potential link between retail internationalization and innovation. Addressing three central research questions, we interrogate the current state of RI literature, assess the integration of innovation therein, and propose future research directions. Our methodological framework, informed by established systematic review protocols, ensures rigor and comprehensiveness. The findings highlight temporal patterns, influential authors, leading journals, and thematic clusters within the RI literature. Moreover, the analysis identifies a burgeoning interest in digital commerce and innovation, underscoring a crucial area for future inquiry. Ultimately, this paper contributes to advancing understanding and guiding future research endeavors in the dynamic field of retail internationalization, with few managerial implications.

Please note that this paper is still a work in progress and the results are not definitive. Future work around the link between internationalization and innovation is needed.

Key words: Retail internationalization; literature review; bibliometric analysis; network analysis; cluster analysis; innovation

Framing of the research. Retail internationalization (RI) has been a subject of extensive discussion in academic literature since the late 1980s and early 1990s. Despite this prolonged interest, only a limited number of papers have undertaken a systematic review of the literature in this specific domain. Notably, Dimitrova et al. (2018) made a commendable attempt at such a review, focusing on a pre-selected sample of 89 papers spanning from the 1970s to 2016. By doing this study they focused their attention primarily in the following research areas: retail internationalization drivers and impediments, strategies, and performance.

However, to gain a comprehensive understanding of the evolution and nuances within the RI discourse, it is imperative to conduct a thorough and exhaustive review of the existing literature. By doing so, we can mitigate initial biases in paper selection and subsequently identify clusters that encapsulate the main areas of investigation within the RI literature.

Moreover, our interest extends beyond merely summarizing the existing literature. We aim to delve deeper into recent developments, particularly focusing on the role of innovation in the retail internationalization strategy. Innovation has emerged as a critical factor shaping the dynamics of global retail operations, yet its integration into the discourse of RI remains underexplored.

Therefore, this study endeavors to address the following research questions:

RQ1. What is the current state of the literature on retail internationalization, and what key themes and trends have emerged over time?

RQ2. To what extent has the literature explored the relationship between retail internationalization and innovation? What gaps exist in this area of research?

RQ3. What are the potential future directions for research in the field of retail internationalization, particularly concerning the integration of innovation into strategic frameworks?

Purpose of the paper. By addressing the aforementioned research questions, our aim is to make a meaningful contribution to the ever-evolving landscape of retail internationalization, thereby providing valuable insights into potential avenues for further exploration and development in this field.

The ultimate objective of this paper is twofold: firstly, to deepen understanding of the research topic by delving into its key areas of study and focusing on its evolution over the past three decades through bibliographic, network, and cluster analyses. Secondly, we endeavor to uncover potential connections between retail internationalization and innovation, while also surveying existing literature to ascertain what has already been explored and documented in this realm.

¹ University of Genova
e-mail: michele.badolato@edu.unige.it

Methodology. In accordance with the seminal work "Systematic Reviews and Meta-Analysis" by Littel et al. (2008), our systematic literature review was conducted following a meticulously organized, transparent, and replicable process. This methodological framework consisted of a structured 5-step program, designed to ensure methodological rigor and comprehensiveness in our review:

1. *Database and Keywords Selection:* We began by selecting Scopus as our primary database, a choice informed by its extensive coverage across various disciplines and journals. Employing Boolean operators and wildcards, we meticulously curated a set of keywords to capture the essence of our research inquiry. Notably, we leveraged wildcard symbols (*) to encompass variations of key terms, such as "retail*" and "international*," ensuring inclusivity of relevant literature across article titles, abstracts, and keywords.
2. *Database Search:* Our initial database search involved amalgamating selected keywords using the Boolean operator "AND," coupled with additional criteria specifying English language articles published within the past three decades (1994 to 2024). This broad search yielded a considerable volume of 4,309 papers. However, upon preliminary assessment, it became evident that the scope was overly expansive and heterogeneous.
3. *Filtering Articles per Keywords and Area:* Recognizing the need for refinement, we conducted a second, more targeted search. This involved refining our search parameters to exclusively retrieve articles featuring the keyword "retail*" in their titles, while replacing the wildcard-enhanced "international*" with the precise term "internationalization." We focused our attention on the specific subject area Business, Management and Accounting. Consequently, this approach yielded a more manageable subset of 223 documents.
4. *Selecting Articles by Reviewing Titles/Abstracts:* To further streamline our dataset, we meticulously scrutinized the titles and abstracts of retrieved articles. Through this process of meticulous review and exclusion, we distilled our dataset to 193 papers deemed most pertinent to our research objectives.
5. *Final Selection by Reading Articles in Full:* The final stage of our literature review entailed a thorough examination of the full texts of the selected articles. By engaging in comprehensive reading and analysis, we identified and retained 170 documents that offered the most relevant insights and empirical findings pertaining to our research focus.

We proceeded to create a database with these 170 articles and for each of them we collected title, authors, year of publication, publication journal, abstract, number of citations, and keywords. For simplicity the number of citations were collected from Scopus (on February 28th). Higher values in terms of number of citations could be find if we look at the same articles on Google Scholars.

Armed with this curated dataset, facilitated by the Zotero reference management program, we proceeded to conduct a comprehensive bibliometric analysis. This analysis encompassed both descriptive, network and cluster-based approaches, aimed at uncovering key trends, patterns, and interrelationships within the literature on retail internationalization (RI).

For the descriptive analysis, we utilized a combination of Microsoft Excel and PowerBI to explore various facets of RI research, including prominent journals, publication trends over time, influential papers, and prolific authors. Additionally, we employed network analysis techniques, employing software such as VOSViewer, to visualize co-authorship networks and co-occurrence of keywords.

Building upon the work of Dimitrova et al. (2018), we adopted a clustering approach to categorize RI literature into distinct thematic clusters. Through meticulous examination of article content, we delineated four primary clusters focusing on RI Process, RI Strategy, RI Performance, and RI Success/Failure. This nuanced analysis not only elucidated the prevailing themes within the literature but also shed light on potential research gaps and avenues for future inquiry. Additional information was extracted from the papers about the sectors and countries studied.

Results. This section presents the results of the descriptive, network, and cluster analyses conducted to fulfill the objectives of this study.

Descriptive Analysis

Publication Distribution Across Journals

Out of the final sample of 170 articles on retail internationalization, an examination of publication distribution across journals provides valuable insights. Figures 1 and 2 depict the distribution of publications and citations per journal, respectively.

Figure 1 illustrates the dominance of the "International Review of Retail, Distribution and Consumer Research" journal, which boasts the highest number of publications with 28 distinct papers. This prominence is notably ahead of the second-ranked "International Journal of Retail and Distribution," which published only 14 papers.

Figure 1 - Main Journals per n. of publications.

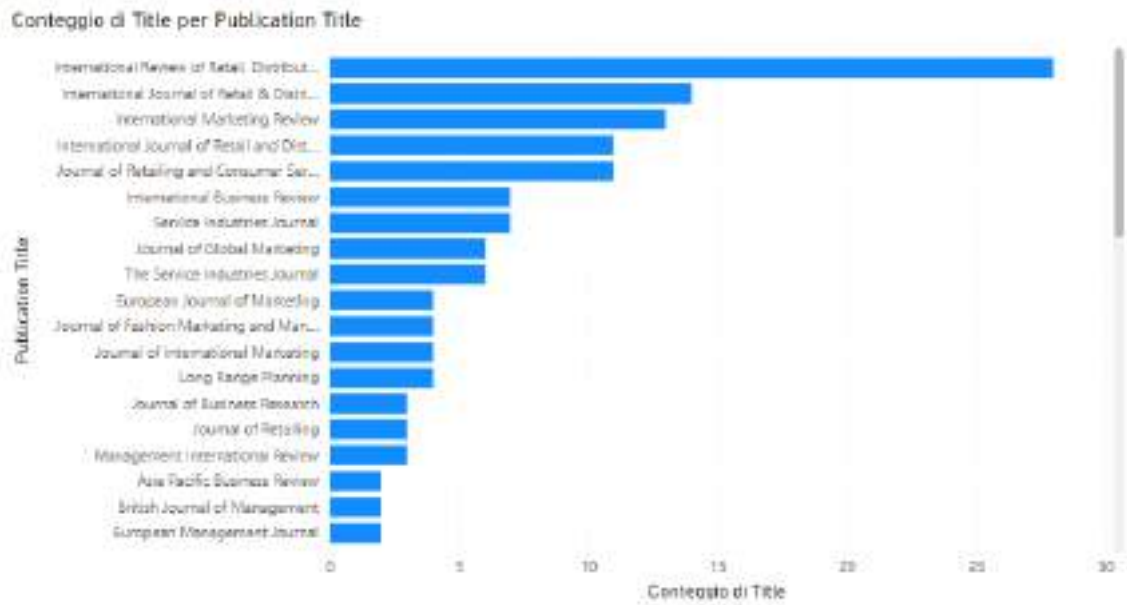
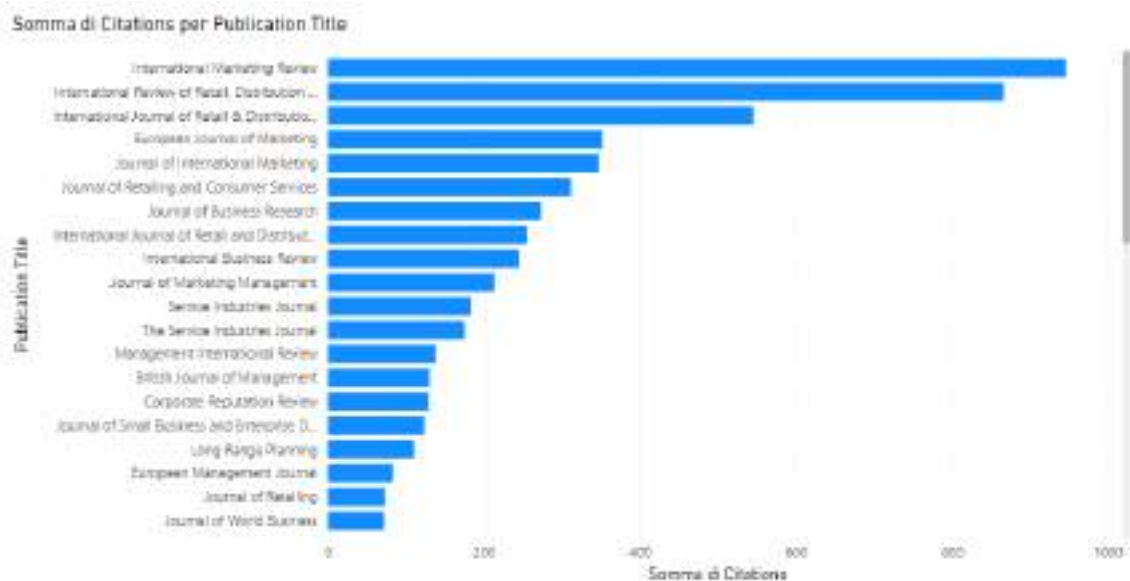


Figure 2 showcases the citation performance of these journals. Despite its lower publication count, the "International Marketing Review" journal emerges as a leader in citations, accumulating 947 citations across 13 published articles. Following closely behind is the "International Review of Retail, Distribution and Consumer Research," with 868 citations.

Figure 2 - Main Journals per n. of citations.

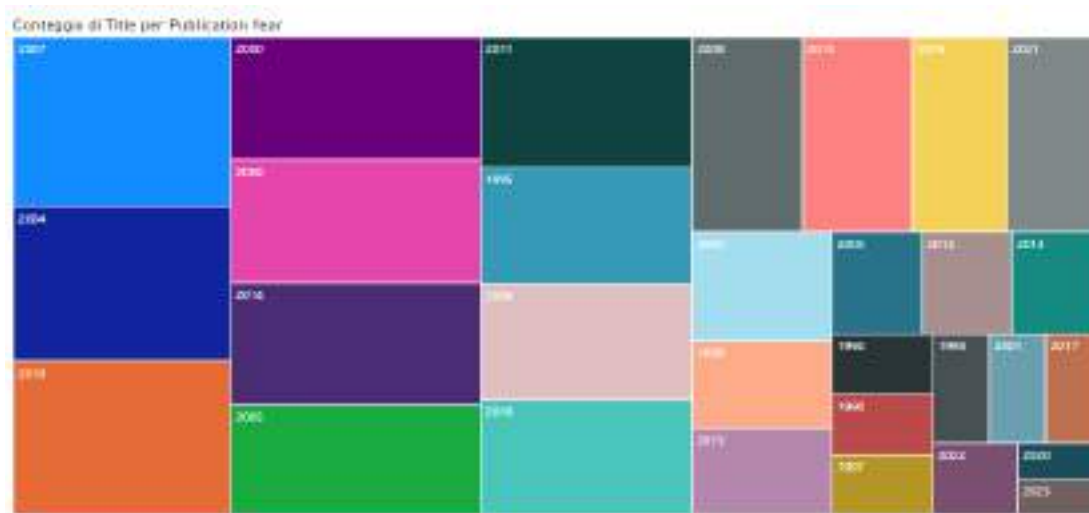


The top five journals, ranked by the number of citations, are the "International Marketing Review," "International Review of Retail, Distribution and Consumer Research," "International Journal of Retail & Distribution Management," "European Journal of Marketing," and "Journal of International Marketing."

Temporal Trends in Publication

A temporal analysis of publication trends sheds light on the evolving interest in retail internationalization. As depicted in Figure 3, the distribution of publications over the years reveals notable patterns.

Figure 3 - Number of Publications per Year



The data indicates that recent years have not witnessed a surge in publications on retail internationalization, with only 10 out of 170 papers published since 2020. Similarly, the 1990s saw relatively modest activity in this research domain, with 20 articles published between 1994 and 1999.

The most prolific period in retail internationalization research occurred between 2004 and 2014, during which 94 out of 170 papers were published. Notably, 2007 emerged as a standout year in terms of publications, with 12 articles contributing to the scholarly discourse in this field.

To fulfill the aim of the paper, the results of the descriptive, network and cluster analysis are presented in the following section.

Leading research in Retail Internationalization

Following the selection criteria of articles with more than one hundred citations, our analysis narrowed down to thirteen articles out of the initial pool of 170. These significant contributions represent pivotal works that have garnered substantial scholarly attention within the field of retail internationalization. The complete list of these influential articles is provided in Table 1 below.

Table 1 - Top Articles per n. citations

Article Title	Citations
Internationalization of retailing operations	214
The retail internationalisation process	155
Psychic distance: Antecedents, retail strategy implications, and performance outcomes	153
Failure in international retailing: Research propositions	145
Lessons learned from unsuccessful internationalization attempts: Examples of multinational retailers in Chile	137
Brands without boundaries – The internationalisation of the designer retailer's brand	134
Psychic distance and the performance of international retailers: A suggested theoretical framework	133
Corporate Branding, Retailing, and Retail Internationalization	130
Flagship stores as a market entry method: The perspective of luxury fashion retailing	130
The role of store image in retail internationalisation	126
Power and control in international retail franchising: Evidence from theory and practice	123
International expansion of retail firms: a theoretical approach for future investigations	116
Retail internationalization and retail failure: Issues from the case of Marks and Spencer	115

Among the selected articles, one standout piece is "Internationalization of Retailing Operations" by Dawson, J.A., published in 1994. This seminal work has surpassed 200 citations, solidifying its status as a foundational pillar in the theoretical development of the retail internationalization process. Dawson's paper delineates the definition of international retail operations, emphasizing its operational scope across multiple countries. Furthermore, Dawson delves into the underlying motives driving internationalization, drawing upon Dunning's seminal work (1981, 1988) to elucidate the key factors: owner-specific advantages, location-specific advantages, and internationalization advantages. Additionally, the paper critically evaluates various mechanisms of internationalization, including internal expansion, mergers or takeovers, and franchising, while also tracing the trajectory of major retailers' internationalization efforts from the 1970s to the 1990s.

Another noteworthy contribution is the work of Evans, J. et al. (2008), titled "Psychic Distance: Antecedents, Retail Strategy Implications, and Performance Outcomes." In this study, the authors present a comprehensive conceptual model elucidating the intricate relationship between psychic distance and organizational performance within the retail sector. Integrating organizational factors such as international experience and decision-making centralization, alongside entry strategy considerations and retail strategy implications, the model offers valuable insights for retailers navigating psychically distant markets. The findings underscore the importance of adopting low-cost/low-control entry strategies and adapting retail strategies to align with market dynamics in psychically distant environments. However, the study also highlights the potential performance implications associated with such strategic responses.

Network Analysis

Co-authorship analysis

To conduct the co-authorship analysis, we utilized the Zotero program to generate RIS files, facilitating the integration of all 170 articles into the VOSviewer software. The following configurations were applied in VOSviewer to generate visual maps, as depicted in Figure 4 below:

1. Map Based On: Bibliographic Data
2. Read Data From: Reference Manager Files RIS
3. Type of Analysis: Co-authorship
4. Unit of Analysis: Authors
5. Counting Method: Full Counting
6. Minimum Number of Documents of an Author: 2 and 3
7. Number of Authors Selected: Total Number of Authors
8. Show: All Items

Among the 232 authors included in the analysis, 66 and 30 authors met the specified thresholds of 2 and 3, respectively.

The co-authorship analysis unveils a robust core of research activity in retail internationalization primarily concentrated between 2000 and 2010. Within this network, certain authors emerge as particularly influential, notably Alexander, N., Burt, S., and Hutchinson, K.

Figure 4 - Co-Authorship analysis



As just mentioned, Nicholas Alexander, a Professor of Marketing at Lancaster University (England, UK), stands out as a prominent figure in this domain. As of March 13, 2024, his Google Scholar profile reflects an impressive citation count of 6,209, with an h-index of 41 and an i10-index of 66. Alexander's research interests predominantly revolve around international retailing and retail marketing. Noteworthy collaborations include strong research ties with Barry Quinn from Ulster University (Northern Ireland, UK) and Annie Marie Doherty from the University of Strathclyde (Scotland, UK).

Ulterior emerging networks have surfaced in recent years, driven by authors such as Mccoll, J., Moore, C., and Kim, S. However, these networks are relatively small and closed, indicating the potential for further collaboration to enhance the dissemination, application, and advancement of knowledge in this field.

Keywords analysis

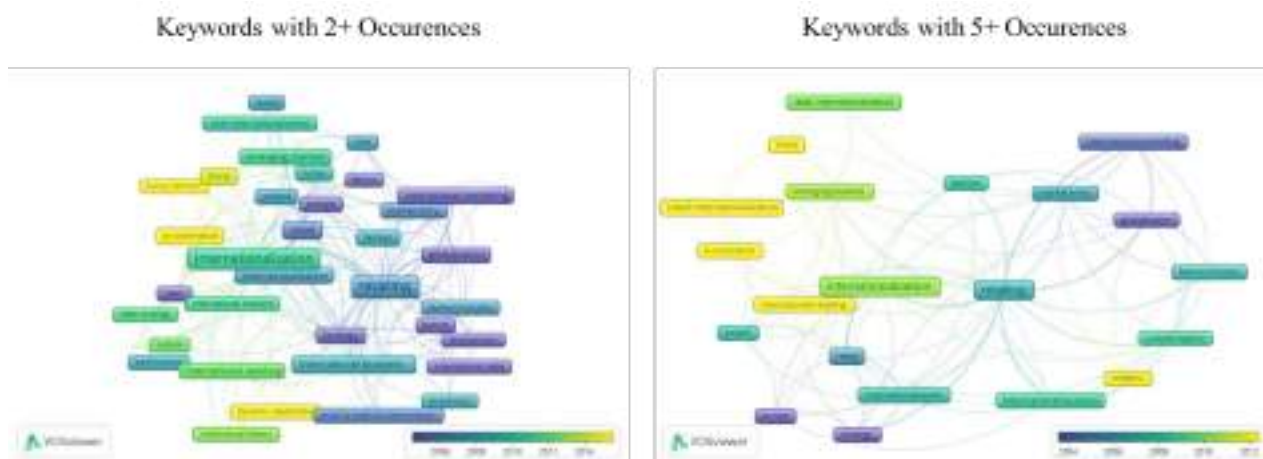
In parallel to the co-authorship analysis, we conducted a keyword analysis utilizing the VOSviewer software, which help us in the creation of the visual maps illustrated in Figure 5. The following settings were applied:

1. Map Based On: Bibliographic Data
2. Read Data From: Reference Manager Files (RIS)

3. Type of Analysis: Co-occurrence
4. Unit of Analysis: Keyword
5. Counting Method: Full Counting
6. Minimum Number of Occurrences of a Term: 2 and 5
7. Number of Terms Selected: Total Number of Items
8. Show: All Items

Among the 403 terms analyzed, 91 and 21 terms were selected based on the thresholds of 2 and 5 occurrences, respectively.

Figure 5 - Keywords analysis



Beyond the expected keywords such as "internationalization" and "retailing," our analysis reveals the presence of different countries or regions as significant focal points. Notably, terms such as "Europe," "Poland," "United Kingdom," "China," and "emerging markets" emerge as prominent co-occurring keywords. A nuanced examination of the most frequently occurring terms reveals distinct temporal trends. For instance, the focus on European regions is evident primarily during the early 2000s, whereas research interest in China and emerging markets becomes pronounced only after 2010.

Furthermore, keywords such as "performance," "divestment," "market entry," "globalization," and "strategy" feature prominently in the analysis, indicating key thematic areas within the literature on retail internationalization. Notably, the last three terms mentioned above also emerge from the network analysis of keywords with five or more occurrences, underscoring their significance within the scholarly discourse.

Of particular interest for our systematic literature review in retail internationalization is the emergence of the keyword "e-commerce." This term, appearing predominantly in recent years, particularly after 2014, reflects a growing scholarly interest in the intersection of retail internationalization and digital commerce. Interestingly, only this term stands out as a keyword potentially correlated with innovation, highlighting a notable gap in the current literature. While this analysis provides just a high-level overview of the thematic focus of various papers, it suggests that innovation remains relatively underexplored within the context of retail internationalization.

Cluster Analysis

Following the process made by Dimitrova et al. (2018), we have developed a cluster analysis in which we have divided our sample of articles in 4 different groups: RI Process, RI Strategy, RI Performance and RI Success/Failure

The clusterization is very broad in order to comprehend almost all of the documents gathered, in fact we proceeded in excluding just two papers which are literature reviews of the argument. A complete list of papers analysed and grouped in the different categories can be found in the Appendix.

RI Process

51 papers out 170 falls in this category. The cluster of retail internationalization process comprehend all the documents that want to:

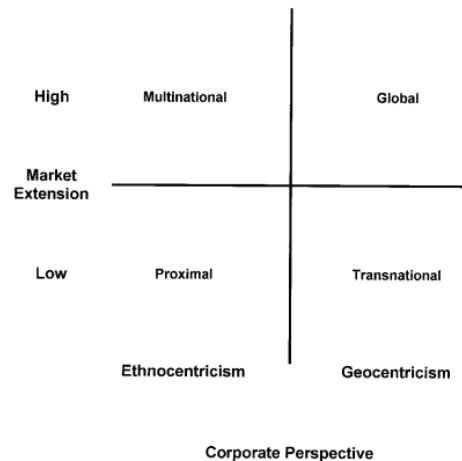
1. Give a theoretical approach or framework to the topic; or
2. Study the whole internationalization process for a specific geographical region or industry; or
3. Discuss drivers or impediment to the internationalization process.

We can say that this cluster represent the base of the research, considering that contains all the papers that try to give a broader overview of the topic and are not focused specifically on some firms or strategies.

Besides the already cited paper by Dawson J.A. "Internationalization of Retailing Operations", another works from the same authors falls in this group, titled "Strategy and Opportunism in European Retail Internationalization", in which expose the retail internationalization process in Europe and focus his attention on the opportunism of the large retailer international activity.

Another very important article in this cluster is the one written by Nicholas Alexander “The Retail Internationalization Process”. This paper develops a very important framework for the retail internationalization process dividing it in two separate terms: market extension and company perspective. By these two different points of view, the author elaborates a matrix that is now very used in internationalization studies (see fig.7); and he additionally state that conceptual frameworks developed in non-retail or non-service environments do not explain the process of retail internationalization.

Figure 6 - Matrix of RI Process; Source: The Retail Internationalization Process by Nicholas Alexander (2000)



In terms of study of RI Process in a specific area or sector, the literature shows a large interest in the European Countries. Additional studies have been conducted for Asian countries (China and Japan); USA and South America. Considering the sector analysed, grocery, fashion and pharma were the industries in which the literature focus its attention the most.

RI Strategy

The second group of articles is represented by the cluster of RI Strategy, which is the largest with 78 papers out 170. When we talk about RI strategy, we focus our attention on documents that study the way international firms operate, via particular case studies or analysing a specific possible strategy attainable by them. However, inside this cluster we find also paper that research drivers and impediments that could influence in several way the internationalization strategy of firms. The most present focuses in this cluster are analysis of strategies connected to entry methods, business models, retail formats, time of entry, market e location analysis, motives of internationalization, standardization versus adaptation, and few others. Overall, we can say that, in respect to the RI Process cluster, this one is more pragmatic and concentrated on the behaviours of firms instead of analysing more at a macro-level the internationalization process. This cluster is particularly interesting for our study on the link between internationalization and innovation. We find that few papers talk about innovation in the internationalization strategies, focusing primarily on online channel and business model innovation.

While e-commerce and online channel research is broad and vary and, even in this particular area of retail internationalization, several papers are focused on this topic, a more interesting approach to the innovation is related to business model innovation, and we find particularly interesting the article of Cao et Al. (2018) in which they aim to identify different patterns of business model innovation which enables international retailers to rebuild their core business logic in new host countries. Focusing their attention to China as the single host country, they compare business model changes of 15 international retailers from various home countries. The findings of the study suggest six routes of retail business model innovations, categorized under three patterns in terms of firms organizational learning capability (exploitation vs. exploration) and resources to which they deploy (home-based vs. host-based). This paper could be an important starting point toward a deeper understanding of the link between retail internationalization strategies and innovation.

RI Performance and RI Success/Failure

The last two clusters, notably RI Performance and RI Success/Failure are similar in terms of when the analysis presented in the papers within the groups have been made. Both of these clusters, in fact, focuses their attention on the analysis of firms after their internationalization process and application of their strategies.

RI Performance cluster contains 23 articles and comprehend the analysis of the economic performance of the internationalization operations. Interesting papers are focused on the study of performance influenced by different factors, such as physical distance (Evans, J. et al., 2000, 2008), speed of internationalization (Mohr, A. et al, 2014, 2017) up to the recent study of the impact of digitalization (Batsakis, G. et al. 2023).

This last paper, interesting also for our innovation focus, examine the relationship between retailer internationalization and performance (I-P relationship), and how this relationship is correlated upon both grocery and non-grocery sectors. In their analysis they found that the I-P relationship is U-shaped, because internationalizing retailers initially incur greater costs in their international expansion owing to their unfamiliarity with foreign markets, but as their foreign presence increases, they benefit from greater market power, experience, and scale economies. Then, they exclaim that as grocers suffer from higher levels of liability of foreignness due to increased requirements for host country embeddedness, non-grocers benefit more from internationalization with any gains and losses further amplified by digitalization.

Moving now into the last cluster of papers, RI Success/Failure contains 16 documents and the main difference, if compared with the cluster of RI Performance, is that the articles present in this group are less focused on quantitative analysis of retailers' performance, and more interested in studying cases and motives of successful and unsuccessful attempts in internationalization. Particular attention is dedicated to the matter of divestment after failing the internationalization process.

RI and Innovation

Apart from few papers discussed above, the link between RI and innovation is weak and not very well developed. Thanks to this literature review we can say that exist an important gap in the literature of the possible leading role of innovation in the RI process, and even more importantly, RI strategies.

A retailer can consider different methods of innovation, the most important methods linkable with RI strategies could be related to product and service innovation, store design and layout innovation, technological and supply chain innovation, or even marketing innovation.

The most important paper about the impact of innovation applied into a RI strategy is the article titled "Innovation in retail internationalisation: Tesco in the USA" by Lowe and Wrigley (2009) in which they examine the market entry of the UK's largest retailer (Tesco) into the USA. Tesco's launch of a new brand - Fresh & Easy Neighborhood Markets - is a innovative market entry strategy and this unusual attempt has been examined by the authors in terms of ten 'dimensions of innovation', like some generical dimension such as product innovation, service innovation, accompanied by more specific ones such as innovative locational strategies, and Physical market entry preceded by online entry.

This article and more specifically, this framework given by the ten dimension of innovation could be an interesting starting point for the expansion of this research area.

Research limitations. While striving for a comprehensive analysis, this study acknowledges few limitations, for instance:

- **Scope of Literature Review:** Despite efforts to be exhaustive, limitations in database coverage, search terms, and inclusion criteria may have led to the inadvertent exclusion of relevant articles, potentially biasing the findings.
- **Publication Bias:** Focusing primarily on peer-reviewed journal articles may introduce publication bias, overlooking valuable insights from gray literature, conference papers, and unpublished works.
- **Language Limitation:** Restricting the search to English-language articles may have overlooked significant contributions published in other languages, particularly in regions with active retail internationalization, for example Chinese-speaking countries.
- **Methodological Constraints:** While following established protocols, variations in search strategies, inclusion criteria, and data extraction methods could introduce inconsistencies or biases. Additionally, reliance on citation counts from Scopus may not fully capture article impact.
- **Interpretation Bias:** Despite efforts for objectivity, qualitative analyses may be subject to interpretation bias influenced by researcher subjectivity and preconceptions.

Addressing these limitations requires transparent reporting, robust methodologies, and cautious interpretation. Future research should aim to overcome these constraints for a nuanced understanding of retail internationalization dynamics.

Managerial implications. The findings of this paper offer valuable managerial implications for businesses involved in or contemplating retail internationalization. Managers can utilize insights from thematic clusters (RI Process, RI Strategy, RI Performance, and RI Success/Failure) to inform strategic decision-making. Understanding drivers, challenges, and strategies aids in formulating effective market entry and expansion plans.

In addition, analysis of publication trends helps identify promising markets, like the growing attention the Asian region, and determine suitable entry strategies, especially by looking at the RI Strategy cluster which can offer insight of existing case studies.

Case of unsuccessful internationalization attempts are present in the RI success/failure clusters, so manager can look at the main articles in this group and try to understand the main reasons behind the failures of RI.

Finally, recognizing innovation's role, managers should prioritize its integration into their strategic frameworks. Understanding how innovation enhances competitiveness guides the development of innovative products, services, and business models for international markets, but there is much more to develop in this area.

Originality of the paper. The originality of this paper lies in several key aspects. While previous studies have examined retail internationalization, this paper offers a comprehensive and systematic review spanning three decades. By synthesizing a large body of literature using rigorous methodologies, the paper provides a nuanced understanding of the evolution, trends, and gaps within the field.

In addition, unlike other literature reviews focusing solely on retail internationalization, this paper extends its analysis to explore the relationship between retail internationalization and innovation. By identifying and analyzing trends related

to innovation within the context of retail internationalization, the paper contributes novel insights into an emerging area of research interest. We have found that this link is largely unexplored and further empirical and theoretical research could be needed.

Finally, the paper employs a multi-dimensional analytical approach, combining bibliometric, network, and cluster analyses to uncover patterns, relationships, and clusters within the literature. This holistic approach not only enhances the depth and breadth of the analysis but also provides a more comprehensive understanding of the research landscape.

Appendix

Title	Area
Internationalization of retailing operations	RI Process
The retail internationalisation process	RI Process
Psychic distance: Antecedents, retail strategy implications, and performance outcomes	RI Performance
Failure in international retailing: Research propositions	RI Success/Failure
Lessons learned from unsuccessful internationalization attempts: Examples of multinational retailers in Chile	RI Success/Failure
Brands without boundaries - The internationalisation of the designer retailer's brand	RI Process
Psychic distance and the performance of international retailers: A suggested theoretical framework	RI Performance
Channel power, conflict and conflict resolution in international fashion retailing	RI Strategy
Towards a Taxonomy of International Retail Alliances	RI Strategy
Business model innovation: How the international retailers rebuild their core business logic in a new host country	RI Strategy
Power and control in international retail franchising: Evidence from theory and practice	RI Process
International expansion of retail firms: a theoretical approach for future investigations	RI Process
Retail internationalization and retail failure: Issues from the case of Marks and Spencer	RI Success/Failure
International retail divestment	RI Success/Failure
Retail internationalisation: From formats to implants	RI Strategy
Strategy and Opportunism in European Retail Internationalization	RI Process
A case study on the internationalization process of a 'born-global' fashion retailer	RI Strategy
Business distance and global retailing: A model for analysis of key success/failure factors	RI Success/Failure
SME retailer internationalisation: Case study evidence from British retailers	RI Process
Tchibo Goes Global: Implementing a Hybrid Franchising Strategy at Germany's Leading Coffee Retailer	RI Strategy
An institutional perspective on retail internationalization success: Home depot in chile	RI Success/Failure
Retailers' foreign market entry decisions: An institutional perspective	RI Process
Product and brand. Critical success factors in the internationalisation of a fashion retailer	RI Strategy
International expansion and strategies of discount grocery retailers: The winning models	RI Strategy
The role of management characteristics in the internationalisation of SMEs. Evidence from the UK retail sector	RI Process
Business networks and retail internationalization: A case analysis in the fashion industry	RI Strategy
Explaining international retailers' market entry mode strategy: Internalization theory, agency theory and the importance of information asymmetry	RI Process
Internationalization and Performance of Retail Firms: A Bayesian Dynamic Model	RI Performance
Cultural influence on loyalty tendency and evaluation of retail store attributes: An analysis of Taiwanese and American consumers	RI Strategy
The relevance of retailer country-of-origin to consumer store choice: Evidence from China	RI Strategy
Corporate Branding, Retailing, and Retail Internationalization	RI Strategy
Internationalization Speed and Firm Performance: A Study of the Market-Seeking Expansion of Retail MNEs	RI Performance
An empirical inquiry into international expansion of US retailers	RI Process
The international divestment activities of European grocery retailers	RI Success/Failure
Flagship stores as a market entry method: The perspective of luxury fashion retailing	RI Strategy
International retail franchising: A conceptual framework	RI Process
Internationalization in retailing: Modeling the pattern of foreign market entry	RI Strategy
Explaining the effect of rapid internationalization on horizontal foreign divestment in the retail sector: An extended Penrosean perspective	RI Success/Failure
An exploratory framework for analysing international retail learning	RI Literature Review
International retail divestment activity	RI Success/Failure
An investigation into the initial barriers to internationalization: Evidence from small UK retailers	RI Process
The nature of international retail divestment: Insights from Ahold	RI Success/Failure
Determinants of international retail operation mode choice: Towards a conceptual framework based on evidence from French specialised retail chains	RI Strategy
Categorizing patterns and processes in retail grocery internationalisation	RI Process
How do past mode choices influence subsequent entry? A study on the boundary conditions of preferred entry modes of retail firms	RI Strategy
Factors influencing international fashion retailers' entry mode choice	RI Strategy
Foreign Market Entry Strategies in Retail Banking: Choosing an Entry Mode in a Landscape of Constraints	RI Strategy
The outlook for european grocery retailing: Competition and format development	RI Process
Internationalization of emerging market firms: The case of Turkish retailers	RI Process
La mode sans frontieres? The internationalisation of fashion retailing	RI Strategy
Revisiting retail internationalisation: Drivers, impediments and business strategy	RI Process
Shutting up shop: Understanding the international exit process in retailing	RI Success/Failure
Internationalization of retail strategies	RI Strategy
Post-entry internationalisation activity of retailers: An assessment of dynamic capabilities	RI Process
Americans in London: The internationalisation of fashion designer retailing	RI Strategy
Testing the Regional Performance of Multinational Enterprises in the Retail Sector: The Moderating Effects of Timing, Speed and Experience	RI Performance
An empirical study on the timing of big retailers' initial internationalization: Influence of the target market and entry-mode choice	RI Strategy
Retailers[U+05F3] expansion mode choice in foreign markets: Antecedents for expansion mode choice in the light of internationalization theories	RI Strategy
Emerging markets and the internationalisation of retailing: The Brazilian experience	RI Process
Retailing in Europe: 20 years on	RI Process
Regional business networks and the multinational retail sector	RI Strategy

The internationalization of retailing: Factors influencing the choice of franchising as a market entry strategy	RI Strategy
Alternatives for growth and internationalization in retailing	RI Strategy
International retailers' strategic responses to institutional environment of emerging market: Multiple case studies in China	RI Strategy
Internationalisation of large-format retailers and leisure providers in western Europe: Planning and property impacts	RI Strategy
Globalisation, international configurations and strategic implications: The case of retailing	RI Strategy
Determinants of international retail involvement: The case of large U.S. retail chains	RI Strategy
Internationalization of retail banks: a micro-level study of the multinationality-performance relationship	RI Performance
A Conceptual Model of Strategic Considerations for International Retail Expansion	RI Strategy
A specialty store's perspective on retail internationalization: a case study	RI Strategy
Internationalization motives and facilitating factors: Qualitative evidence from smaller specialist retailers	RI Strategy
Integrating embeddedness with dynamic capabilities in the internationalisation of fashion retailers	RI Process
International value chain processes by retailers and wholesalers - A general approach	RI Process
Developing a Framework for the Study of the Internationalisation of Retailing	RI Process
The temporal context of UK retailers' motives for international expansion	RI Strategy
The role of retail internationalisation in the establishment of a European retail structure	RI Process
Intangible assets, international experience and the internationalisation speed of retailers	RI Strategy
Country and firm level factors in international retail expansion	RI Performance
Internationalization Speed of Online Retailers: A Resource-Based Perspective on the Influence Factors	RI Strategy
Paths of the least resistance: Understanding how motives form in international retail joint venturing	RI Strategy
Problems encountered within international retail joint ventures: UK retailer case study evidence	RI Strategy
Equity ownership and control of international joint ventures in the retail sector	RI Strategy
Knowledge and knowledge sharing in retail internationalization: IKEA's entry into Russia	RI Strategy
Internationalization of SME retailer: Barriers and the role of public support organizations	RI Process
The key elements of strategic leadership capabilities to the latecomer firm: the case of RT Mart's success in the Chinese retail industry	RI Strategy
Retail internationalisation from emerging markets: Case study evidence from Chile	RI Strategy
The Internationalisation of Retailing in the Czech and Slovak Republics	RI Process
International expansion and retail sales: An empirical study	RI Performance
The anatomy of retail internationalisation: Daimaru decision to invest in Melbourne, Australia	RI Strategy
European food retailers' evaluation of global markets	RI Process
The growing permanence of pop-up outlets within the international location strategies of fashion retailers	RI Strategy
Internationalization of the biggest Finnish and Swedish retailers in the Baltic States and Russia	RI Strategy
The Impact of Market Orientation on the Internationalization of Retailing Firms: Tesco in Eastern Europe	RI Strategy
A tactical retreat? Conceptualising the dynamics of European grocery retail divestment from East Asia	RI Success/Failure
Foreign market selection of online retailers - A path-dependent perspective on influence factors	RI Strategy
Towards a conceptual model of country market selection: Selection processes of retailers and C&C wholesalers	RI Strategy
Retailer internationalization: Overcoming barriers to expansion	RI Process
First foreign grocery retailer enters the Finnish market -a stakeholder model	RI Strategy
New directions for international retail joint venture research	RI Process
Costco and the Aussie Shopper: a case study of the market entry of an international retailer	RI Strategy
UK retail expansion in North America and Europe A strategic dilemma	RI Process
Measuring the performance of retail managers in Australia and Singapore	RI Performance
Conception and test of a comprehensive model of international strategy for retail companies	RI Process
The development of international e-commerce in retail SMEs: An effectuation perspective	RI Strategy
"It's a new game out there": e-commerce in internationalising retail SMEs	RI Strategy
The influence of a retail firms geographic scope of operations on its international online sales	RI Strategy
The internationalisation of European retailers in America: The US experience	RI Process
The role of e-commerce in the internationalization of Spanish luxury fashion multi-brand retailers	RI Strategy
Supporting retailers to exploit online settings for internationalization: The different role of trust and compensation	RI Strategy
Disentangling the effects of domestic corporate political activity and political connections on firms' internationalisation: Evidence from US retail MNEs	RI Strategy
Foreign retailers in post-WTO China: Stories of success and setbacks	RI Performance
The role of store image in retail internationalisation	RI Strategy
Reciprocal Retail Internationalisation: The Southland Corporation, Ito-Yokado and 7-Eleven Convenience Stores	RI Strategy
Internationalization patterns in fashion retail distribution: Implications for firm results	RI Performance
Retail companies' internationalization behavior and the 2008 crisis	RI Process
Foreign retailers in China: The first ten years	RI Process
Internationalisation of Hypermarket Retailing in Poland: West European Investment and Its Implications	RI Process
The pop-up store as a foreign operation mode (FOM) for retailers	RI Strategy
Internationalization in the process of the Czech retail development	RI Process
Looking back at the 20 years of retailing change in Poland	RI Process
Expansion of Japanese retailers overseas	RI Process
A Study of the Internationalization-Performance Relationship in Global Retailing: The Moderating Role of Brand Standardization and Cultural Diversity	RI Performance
Core competences, strategy and performance: The case of international retailers in China	RI Performance
Innovation in retail internationalisation: Tesco in the USA	RI Strategy
Critical success factors for international fashion retailers entering foreign markets	RI Success/Failure
Consumer co-operatives and retail internationalisation: Problems and prospects	RI Success/Failure
The Planning Implications of New Retail Format Introductions in Canada and Britain	RI Strategy
Does the degree of retailer international involvement affect retailer performance?	RI Performance
The role of business support organisations in the process of retailer internationalisation	RI Process
Internationalisation of pharmaceutical retail sector: Growth opportunities in emerging markets	RI Process
Japanese retailers in Southeast Asia: Strong local partners, shopping malls, and aiming for comprehensive internationalization	RI Process
Retail heaven in a half-pipe: How SMEs can internationalize too	RI Strategy
Firm factors that influence internationalisation and subsequent financial performance of fashion retailers	RI Performance
Identifying the characteristics of small specialist international retailers	RI Strategy
The Effects of Retail Banner Standardization on the Performance of Global Retailers	RI Performance
The standardization-localization dilemma of brand communications for luxury fashion retailers' internationalization into China	RI Strategy
Globalization of food retailing: The case of Latin America	RI Process
Standardized marketing strategies in retailing? IKEA's marketing strategies in Sweden, the UK and China	RI Strategy
Magnitude and intensity of the internationalization of the large distribution retailer: An international comparison	RI Performance

Factors of success and failure for international retailers in Poland	RI Success/Failure
The strategic importance of retail investment in Asia and its implications for the metro group in Asia	RI Performance
Retail internationalisation in practice: Per una in the UK and Taiwan	RI Strategy
The internationalisation of retailing	RI Process
How does the global retailer localize its format?: The case of toys "R" Us and Carrefour in Japan	RI Strategy
The growth and international expansion of an emerging market retailer in Latin America	RI Performance
Developing fashion retail operations to growth in emerging markets	RI Process
Supply chain capabilities for facilitating the internationalisation of retailers-a multiple case study of three Swedish retail companies	RI Strategy
Is Uppsala model valid to fashion retailers? An analysis from internationalisation patterns of fast fashion retailers	RI Strategy
The Internationalisation of Retail Banking: Banco Santander's Journey towards Globalisation	RI Strategy
Coordinating the international retailing firm: Exploratory models and evaluations of structural, systemic, and cultural options	RI Process
A comparative report on the profiles of retailing in the emerging markets of Europe: Turkey, Poland, Hungary, Portugal, and Greece	RI Process
Electronic commerce-based internationalisation of small, niche-oriented retailing companies: The case of Blue Tomato and the Snowboard industry	RI Strategy
Retail internationalization: A review and directions for future research	RI Literature Review
International retail joint venture learning	RI Strategy
Exporting firms and retail internationalization: Evidence from France	RI Process
Internationalization of retail in Poland and Croatia	RI Process
Italian luxury fashion brands in China: A retail perspective	RI Strategy
Direction of luxury fashion retailers' post-entry expansion - the evidence from China	RI Process
Performance implications of Retail Format diversification for international retailers	RI Performance
Exploring brand identity and entrepreneurship as drivers of small specialist retailer internationalisation: a German case study	RI Strategy
Some reasons why foreign retailers have difficulties in succeeding in the Japanese market	RI Success/Failure
Internationalization and digitalization: Their differing role on grocer and non-grocer retailer performance	RI Performance
Performance of International Retailers: Empirical Evidence of an S-Curve Relationship	RI Performance
Motives behind retailers' post-entry expansion - Evidence from the Chinese luxury fashion market	RI Strategy
Luxury fashion retailers' localised marketing strategies in practice - evidence from China	RI Strategy
Internationalization strategies of emerging market multinationals in luxury fashion retailing-Case study of Shandong Ruyi Group	RI Strategy
Traces of foreign retailers-local knowledge-spillovers and strategy adaption within retail internationalization	RI Process
Determinants of website traffic: The case of European fashion apparel retailers	RI Process
Hering, from a global production network player to a regional retail leader	RI Strategy
Factors Affecting European Food Retailers' Internationalisation: An Eclectic Paradigm Application in the Greek Market	RI Performance

References

- AKEHURST G., ALEXANDER N. (1995a), "Developing a Framework for the Study of the Internationalisation of Retailing", *The Service Industries Journal*, vol. 15, n. 4, pp. 204-209.
- AKEHURST G., ALEXANDER N. (1995b), "The internationalisation of retailing", *Service Industries Journal*, vol. 15, n. 4.
- EXANDER B., NOBBS K., VARLEY R. (2018), "The growing permanence of pop-up outlets within the international location strategies of fashion retailers", *International Journal of Retail and Distribution Management*, vol. 46, n. 5, pp. 487-506.
- ALEXANDER N. (1995), "UK retail expansion in North America and Europe A strategic dilemma", *Journal of Retailing and Consumer Services*, vol. 2, n. 2, pp. 75-81.
- ALEXANDER N., DE LIRA E SILVA M. (2002), "Emerging markets and the internationalisation of retailing: The Brazilian experience", *International Journal of Retail & Distribution Management*, vol. 30, n. 6, pp. 300-314.
- ALEXANDER N., MYERS H. (2000), "The retail internationalisation process", *International Marketing Review*, vol. 17, n. 4-5, pp. 334-353.
- ALEXANDER N., QUINN B. (2002), "International retail divestment", *International Journal of Retail & Distribution Management*, vol. 30, n. 2, pp. 112-125.
- ALEXANDER N., QUINN B., CAIRNS P. (2005), "International retail divestment activity", *International Journal of Retail & Distribution Management*, vol. 33, n. 1, pp. 5-22.
- ALON I., LATTEMANN C. (2016), "Tchibo Goes Global: Implementing a Hybrid Franchising Strategy at Germany's Leading Coffee Retailer", *Global Business and Organizational Excellence*, vol. 35, n. 2, pp. 18-30.
- ASSAF A.G., JOSIASSEN A., RATCHFORD B.T., BARROS C.P. (2012), "Internationalization and Performance of Retail Firms: A Bayesian Dynamic Model", *Journal of Retailing*, vol. 88, n. 2, pp. 191-205.
- BAEK J. (2004), "How does the global retailer localize its format?: The case of toys «R» Us and Carrefour in Japan", *Journal of Global Marketing*, vol. 18, n. 1-2, pp. 151-166.
- BAI H., HE W., SHI J., MCCOLL J., MOORE C. (2021), "Internationalization strategies of emerging market multinationals in luxury fashion retailing-Case study of Shandong Ruyi Group", *Thunderbird International Business Review*, vol. 63, n. 3, pp. 319-327.
- BAI H., MCCOLL J., MOORE C. (2021), "Motives behind retailers' post-entry expansion-Evidence from the Chinese luxury fashion market", *Journal of Retailing and Consumer Services*, vol. 59.
- BAI H., MCCOLL J., MOORE C. (2022), "Luxury fashion retailers' localised marketing strategies in practice - evidence from China", *International Marketing Review*, vol. 39, n. 2, pp. 352-370.
- BAI H., MCCOLL J., MOORE C., HE W., SHI J. (2021), "Direction of luxury fashion retailers' post-entry expansion - the evidence from China", *International Journal of Retail and Distribution Management*, vol. 49, n. 2, pp. 223-241.
- BAILEY J., CLARKE-HILL C. M., ROBINSON T. M. (1995), "Towards a Taxonomy of International Retail Alliances", *The Service Industries Journal*, vol. 15, n. 4, pp. 25-41.
- BATSAKIS G., THEOHARAKIS V., LI C., KONARA P. (2023), "Internationalization and digitalization: Their differing role on grocer and non-grocer retailer performance", *Journal of Retailing*, vol. 99, n. 3, pp. 400-419.
- BHARDWAJ V., EICKMAN M., RUNYAN R.C. (2011), "A case study on the internationalization process of a «born-global» fashion retailer", *International Review of Retail, Distribution and Consumer Research*, vol. 21, n. 3, pp. 293-307.

- BIANCHI C. (2009), "Retail internationalisation from emerging markets: Case study evidence from Chile", *International Marketing Review*, vol. 26, n. 2, pp. 221-243.
- BIANCHI C. (2011), "The growth and international expansion of an emerging market retailer in Latin America", *Journal of Global Marketing*, vol. 24, n. 4, pp. 357-379.
- BIANCHI C.C., ARNOLD S.J. (2004), "An institutional perspective on retail internationalization success: Home depot in chile", *International Review of Retail, Distribution and Consumer Research*, vol. 14, n. 2, pp. 149-169.
- BIANCHI C.C., OSTALE E. (2006), "Lessons learned from unsuccessful internationalization attempts: Examples of multinational retailers in Chile", *Journal of Business Research*, vol. 59, n. 1, pp. 140-147.
- BONETTI F. (2014), "Italian luxury fashion brands in China: A retail perspective", *International Review of Retail, Distribution and Consumer Research*, vol. 24, n. 4, pp. 453-477.
- BOURLAKIS M.A. (2003), "Factors Affecting European Food Retailers' Internationalisation: An Eclectic Paradigm Application in the Greek Market", *Journal of International Food and Agribusiness Marketing*, vol. 13, n. 2-3, pp. 7-28.
- BURT S. (2010), "Retailing in Europe: 20 years on", *International Review of Retail, Distribution and Consumer Research*, vol. 20, n. 1, pp. 9-27.
- BURT S., CARRALERO-ENCINAS J. (2000), "The role of store image in retail internationalisation", *International Marketing Review*, vol. 17, n. 4-5, pp. 433-453.
- BURT S., COE N.M., DAVIES K. (2019), "A tactical retreat? Conceptualising the dynamics of European grocery retail divestment from East Asia", *International Business Review*, vol. 28, n. 1, pp. 177-189.
- BURT S., DAVIES K., DAWSON J., SPARKS L. (2008), "Categorizing patterns and processes in retail grocery internationalisation", *Journal of Retailing and Consumer Services*, vol. 15, n. 2, pp. 78-92.
- BURT S., DAVIES K., MCAULEY A. (2005), "Retail internationalisation: From formats to implants", *European Management Journal*, vol. 23, n. 2, pp. 195-202.
- BURT S., DAWSON J., SPARKS L. (2003), "Failure in international retailing: Research propositions", *International Review of Retail, Distribution and Consumer Research*, vol. 13, n. 4, pp. 355-373.
- BURT S., DAWSON J., SPARKS L. (2004), "The international divestment activities of European grocery retailers", *European Management Journal*, vol. 22, n. 5, pp. 483-492.
- BURT S., JOHANSSON U., THELANDER Å. (2011), "Standardized marketing strategies in retailing? IKEA's marketing strategies in Sweden, the UK and China", *Journal of Retailing and Consumer Services*, vol. 18, n. 3, pp. 183-193.
- BURT S.L., MELLAHI K., JACKSON T.P., SPARKS L. (2002), "Retail internationalization and retail failure: Issues from the case of Marks and Spencer", *International Review of Retail, Distribution and Consumer Research*, vol. 12, n. 2, pp. 191-219.
- BURT S.L., SPARKS L. (2002), "Corporate Branding, Retailing, and Retail Internationalization", *Corporate Reputation Review*, vol. 5, n. 2-3, pp. 194-212.
- CAI R., WANG Y. (2010), "An empirical study on the timing of big retailers' initial internationalization: Influence of the target market and entry-mode choice", *Frontiers of Business Research in China*, vol. 4, n. 4, pp. 608-629.
- CAO L.L., DUPUIS M. (2009), "Core competences, strategy and performance: The case of international retailers in China", *International Review of Retail, Distribution and Consumer Research*, vol. 19, n. 4, pp. 349-369.
- CAO L., NAVARE J., JIN Z. (2018), "Business model innovation: How the international retailers rebuild their core business logic in a new host country", *International Business Review*, vol. 27, n. 3, pp. 543-562.
- CAO L., PEDERZOLI D. (2013), "International retailers' strategic responses to institutional environment of emerging market: Multiple case studies in China", *International Journal of Retail and Distribution Management*, vol. 41, n. 4, pp. 289-310.
- CHAN P., FINNEGAN C., STERNQUIST B. (2011), "Country and firm level factors in international retail expansion", *European Journal of Marketing*, vol. 45, n. 6, pp. 1005-1022.
- CHEPTEA A., EMLINGER C., LATOUCHE K. (2019), "Exporting firms and retail internationalization: Evidence from France", *Journal of Economics and Management Strategy*, vol. 28, n. 3, pp. 561-582.
- CHILDS M.L., JIN B. (2014), "Is Uppsala model valid to fashion retailers? An analysis from internationalisation patterns of fast fashion retailers", *Journal of Fashion Marketing and Management*, vol. 18, n. 1, pp. 36-51.
- CHILDS M.L., JIN B. (2015), "Firm factors that influence internationalisation and subsequent financial performance of fashion retailers", *Journal of Service Theory and Practice*, vol. 25, n. 1, pp. 95-114.
- CHRISTMANN H., ALEXANDER A., WOOD S. (2016), "Exploring brand identity and entrepreneurship as drivers of small specialist retailer internationalisation: A German case study", *International Review of Retail, Distribution and Consumer Research*, vol. 26, n. 2, pp. 137-153.
- CLARKE I., RIMMER P. (1997), "The anatomy of retail internationalisation: Daimarus decision to invest in Melbourne, Australia", *Service Industries Journal*, vol. 17, n. 3, pp. 361-382.
- COLEMAN R.W. (2004), "Globalization of food retailing: The case of Latin America", *Latin American Business Review*, vol. 4, n. 4, pp. 23-41.
- COLLA E. (2003), "International expansion and strategies of discount grocery retailers: The winning models", *International Journal of Retail & Distribution Management*, vol. 31, n. 1, pp. 55-66.
- COLLA E. (2004), "The outlook for european grocery retailing: Competition and format development", *International Review of Retail, Distribution and Consumer Research*, vol. 14, n. 1, pp. 47-69.
- DAVIES K., BURT S. (2007), "Consumer co-operatives and retail internationalisation: Problems and prospects", *International Journal of Retail and Distribution Management*, vol. 35, n. 2, pp. 156-177.
- DAWSON J. (2001), "Strategy and Opportunism in European Retail Internationalization", *British Journal of Management*, vol. 12, n. 4, pp. 253-266.
- DAWSON J.A. (1994), "Internationalization of retailing operations", *Journal of Marketing Management*, vol. 10, n. 4, pp. 267-282.
- DAWSON J., HENLEY J. (2000), "Internationalisation of Hypermarket Retailing in Poland: West European Investment and Its Implications", *Journal of East-West Business*, vol. 5, n. 4, pp. 37-52.
- DIMITROVA B.V., KIM S., SMITH B. (2019), "Performance of International Retailers: Empirical Evidence of an S-Curve Relationship", *Journal of Global Marketing*, vol. 32, n. 3, pp. 154-176.
- DIMITROVA B.V., ROSENBLOOM B., ANDRAS T.L. (2014), "Does the degree of retailer international involvement affect retailer performance?", *International Review of Retail, Distribution and Consumer Research*, vol. 24, n. 3, pp. 243-277.

- DIMITROVA B.V., ROSENBLOOM B., LARSEN ANDRAS T., KIM S. (2018), "Retail internationalization: A review and directions for future research", *Journal of Marketing Channels*, vol. 25, n. 1-2, pp. 1-21.
- DIMITROVA B.V., SMITH B., KIM S. (2018), "Performance implications of store format diversification for international retailers", *Journal of Marketing Channels*, vol. 25, n. 3, pp. 117-136.
- DOHERTY A. M. (1999), "Explaining international retailers' market entry mode strategy: Internalization theory, agency theory and the importance of information asymmetry", *International Review of Retail, Distribution and Consumer Research*, vol. 9, n. 4, pp. 379-402.
- DOHERTY A.M. (2007), "The internationalization of retailing: Factors influencing the choice of franchising as a market entry strategy", *International Journal of Service Industry Management*, vol. 18, n. 2, pp. 184-205.
- DRTINA T. (1995), "The Internationalisation of Retailing in the Czech and Slovak Republics", *The Service Industries Journal*, vol. 15, n. 4, pp. 191-203.
- DUPUIS M., PRIME N. (1996), "Business distance and global retailing: A model for analysis of key success/failure factors", *International Journal of Retail & Distribution Management*, vol. 24, n. 11, pp. 30-38.
- EREN-ERDOGMUS I., COBANOGLU E., YALCIN M., GHOURI P.N. (2010), "Internationalization of emerging market firms: The case of Turkish retailers", *International Marketing Review*, vol. 27, n. 3, pp. 316-337.
- ETGAR M., RACHMAN-MOORE D. (2008), "International expansion and retail sales: An empirical study", *International Journal of Retail & Distribution Management*, vol. 36, n. 4, pp. 241-259.
- EVANS J., BRIDSON K., BYROM J., MEDWAY D. (2008), "Revisiting retail internationalisation: Drivers, impediments and business strategy", *International Journal of Retail and Distribution Management*, vol. 36, n. 4, pp. 260-280.
- EVANS J., MAVONDO F.T., BRIDSON K. (2008), "Psychic distance: Antecedents, retail strategy implications, and performance outcomes", *Journal of International Marketing*, vol. 16, n. 2, pp. 32-63.
- EVANS J., TREADGOLD A., MAVONDO F.T. (2000), "Psychic distance and the performance of international retailers: A suggested theoretical framework", *International Marketing Review*, vol. 17, n. 4-5, pp. 373-391.
- FELDMANN F. (2016), "Factors of success and failure for international retailers in Poland", *Journal of Management and Business Administration. Central Europe*, vol. 24, n. 3, pp. 2-22.
- FOSCHT T., SWOBODA B., MORSCHETT D. (2006), "Electronic commerce-based internationalisation of small, niche-oriented retailing companies: The case of Blue Tomato and the Snowboard industry", *International Journal of Retail and Distribution Management*, vol. 34, n. 7, pp. 556-572.
- FRASER C., ZARKADA-FRASER A. (2000), "Measuring the performance of retail managers in Australia and Singapore", *International Journal of Retail & Distribution Management*, vol. 28, n. 6, pp. 228-243.
- FRASQUET M., DAWSON J., CALDERÓN H., FAYOS T. (2018), "Integrating embeddedness with dynamic capabilities in the internationalisation of fashion retailers", *International Business Review*, vol. 27, n. 4, pp. 904-914.
- FRASQUET M., DAWSON J., MOLLÁ A. (2013), "Post-entry internationalisation activity of retailers: An assessment of dynamic capabilities", *Management Decision*, vol. 51, n. 7, pp. 1510-1527.
- GARDÓ T.F., GARCÍA H.C., DESCALS A.M. (2015), "Internationalization of SME retailer: Barriers and the role of public support organizations", *International Journal of Retail and Distribution Management*, vol. 43, n. 2, pp. 183-200.
- GEHRKE G.A., DO NUNES LINS H., BORBA J.A. (2016), "Hering, from a global production network player to a regional retail leader", *Progress in International Business Research*, vol. 11, pp. 295-315.
- GERSCH I. (2018), "Traces of foreign retailers-local knowledge-spillovers and strategy adaption within retail internationalization", *International Review of Retail, Distribution and Consumer Research*, vol. 28, n. 5, pp. 455-471.
- GIROD S.J.G., RUGMAN A.M. (2005), "Regional business networks and the multinational retail sector", *Long Range Planning*, vol. 38, n. 4, pp. 335-357.
- GRIPSRUD G., BENITO G.R.G. (2005), "Internationalization in retailing: Modeling the pattern of foreign market entry", *Journal of Business Research*, vol. 58, n. 12, pp. 1672-1680.
- GUERCINI S., RUNFOLA A. (2010), "Business networks and retail internationalization: A case analysis in the fashion industry", *Industrial Marketing Management*, vol. 39, n. 6, pp. 908-916.
- GUERCINI S., RUNFOLA A. (2019), "Developing fashion retail operations to growth in emerging markets", *Journal of Global Fashion Marketing*, vol. 10, n. 2, pp. 145-162.
- GUY C. (2001), "Internationalisation of large-format retailers and leisure providers in western Europe: Planning and property impacts", *International Journal of Retail & Distribution Management*, vol. 29, n. 10, pp. 452-461.
- HAAG L., SALLNÄS U., SANDBERG E. (2019), "Supply chain capabilities for facilitating the internationalisation of retailers-a multiple case study of three Swedish retail companies", *International Review of Retail, Distribution and Consumer Research*, vol. 29, n. 3, pp. 321-339.
- HALLSWORTH A.G., JONES K.G., MUNCASTER R. (1995), "The Planning Implications of New Retail Format Introductions in Canada and Britain", *The Service Industries Journal*, vol. 15, n. 4, pp. 148-163.
- HÅNEL S.M., ROVIRA NORDMAN E., TOLSTOY D., ÖZBEK N. (2020), "“It's a new game out there”: E-commerce in internationalising retail SMEs", *International Marketing Review*, vol. 37, n. 3, pp. 515-531.
- HUANG Y., STERNQUIST B. (2007), "Retailers' foreign market entry decisions: An institutional perspective", *International Business Review*, vol. 16, n. 5, pp. 613-629.
- HUTCHINSON K., ALEXANDER N., QUINN B., DOHERTY A.M. (2007), "Internationalization motives and facilitating factors: Qualitative evidence from smaller specialist retailers", *Journal of International Marketing*, vol. 15, n. 3, pp. 96-122.
- HUTCHINSON K., FLECK E., LLOYD/REASON L. (2009), "An investigation into the initial barriers to internationalization: Evidence from small UK retailers", *Journal of Small Business and Enterprise Development*, vol. 16, n. 4, pp. 544-568.
- HUTCHINSON K., FLECK E., LLOYD-REASON L. (2009), "The role of business support organisations in the process of retailer internationalisation", *International Review of Retail, Distribution and Consumer Research*, vol. 19, n. 4, pp. 371-388.
- HUTCHINSON K., QUINN B. (2012), "Identifying the characteristics of small specialist international retailers", *European Business Review*, vol. 24, n. 2, pp. 106-119.

- HUTCHINSON K., QUINN B., ALEXANDER N. (2006a), "SME retailer internationalisation: Case study evidence from British retailers", *International Marketing Review*, vol. 23, n. 1, pp. 25-53.
- HUTCHINSON K., QUINN B., ALEXANDER N. (2006b), "The role of management characteristics in the internationalisation of SMEs. Evidence from the UK retail sector", *Journal of Small Business and Enterprise Development*, vol. 13, n. 4, pp. 513-534.
- HUTCHINSON K., QUINN B., ALEXANDER N., DOHERTY A.M. (2009), "Retailer internationalization: Overcoming barriers to expansion", *International Review of Retail, Distribution and Consumer Research*, vol. 19, n. 3, pp. 251-272.
- JACKSON P., MELLAHI K., SPARKS L. (2005), "Shutting up shop: Understanding the international exit process in retailing", *Service Industries Journal*, vol. 25, n. 3, pp. 355-371.
- JONSSON A., ELG U. (2006), "Knowledge and knowledge sharing in retail internationalization: IKEA's entry into Russia", *International Review of Retail, Distribution and Consumer Research*, vol. 16, n. 2, pp. 239-256.
- KARASIEWICZ G., NOWAK J. (2010), "Looking back at the 20 years of retailing change in Poland", *International Review of Retail, Distribution and Consumer Research*, vol. 20, n. 1, pp. 103-117.
- KARHU A., YLÄ-KOJOLA A.M. (2010), "Internationalisation of pharmaceutical retail sector: Growth opportunities in emerging markets", *International Journal of Business Excellence*, vol. 3, n. 3, pp. 363-382.
- KNEZEVIC B., SZARUCKI M. (2013), "Internationalization of retail in Poland and Croatia", *International Business and Management*, vol. 29, vol. 1-18.
- LARIMO J., HUUHKA A. (2007), "Internationalization of the biggest Finnish and Swedish retailers in the Baltic States and Russia", *Journal of East-West Business*, vol. 13, n. 1, pp. 63-91.
- LARKE R. (2004), "Expansion of Japanese retailers overseas", *Journal of Global Marketing*, vol. 18, n. 1-2, pp. 99-120.
- LEKNES H.M., CARR C. (2004), "Globalisation, international configurations and strategic implications: The case of retailing", *Long Range Planning*, vol. 37, n. 1, pp. 29-49.
- LESSASSY L., JOLIBERT A. (2007), "Internationalization of retail strategies", *Journal of Euromarketing*, vol. 16, n. 3, pp. 27-36.
- LIU S., PERRY P., MOORE C., WARNABY G. (2016), "The standardization-localization dilemma of brand communications for luxury fashion retailers' internationalization into China", *Journal of Business Research*, vol. 69, n. 1, pp. 357-364.
- LITTLE H.J., CORCORAN J., PILLAI V. (2008), *Systematic Reviews and Meta-Analysis*, Oxford University Press.
- LOWE M., WRIGLEY N. (2009), "Innovation in retail internationalisation: Tesco in the USA", *International Review of Retail, Distribution and Consumer Research*, vol. 19, n. 4, pp. 331-347.
- LU Y., KARPOVA E.E., FIORE A.M. (2011), "Factors influencing international fashion retailers' entry mode choice", *Journal of Fashion Marketing and Management*, vol. 15, n. 1, pp. 58-75.
- MARUYAMA M., WU L. (2014), "The relevance of retailer country-of-origin to consumer store choice: Evidence from China", *International Marketing Review*, vol. 31, n. 5, pp. 462-476.
- MEYER-OHLE H. (2014), "Japanese retailers in Southeast Asia: Strong local partners, shopping malls, and aiming for comprehensive internationalization", *International Review of Retail, Distribution and Consumer Research*, vol. 24, n. 5, pp. 500-515.
- MINAHAN S.M., HUDDLESTON P., BIANCHI C. (2012), "Costco and the Aussie Shopper: A case study of the market entry of an international retailer", *International Review of Retail, Distribution and Consumer Research*, vol. 22, n. 5, pp. 507-527.
- MIR-BERNAL P., GUERCINI S., SÁDABA T. (2018), "The role of e-commerce in the internationalization of Spanish luxury fashion multi-brand retailers", *Journal of Global Fashion Marketing*, vol. 9, n. 1, pp. 59-72.
- MOHR A., BATSAKIS G. (2014), "Intangible assets, international experience and the internationalisation speed of retailers", *International Marketing Review*, vol. 31, n. 6, pp. 601-620.
- MOHR A., BATSAKIS G. (2017), "Internationalization Speed and Firm Performance: A Study of the Market-Seeking Expansion of Retail MNEs", *Management International Review*, vol. 57, n. 2, pp. 153-177.
- MOHR A., BATSAKIS G., STONE Z. (2018), "Explaining the effect of rapid internationalization on horizontal foreign divestment in the retail sector: An extended Penrosean perspective", *Journal of International Business Studies*, vol. 49, n. 7, pp. 779-808.
- MOHR A., FASTOSO F., WANG C., SHIRODKAR V. (2014), "Testing the Regional Performance of Multinational Enterprises in the Retail Sector: The Moderating Effects of Timing, Speed and Experience", *British Journal of Management*, vol. 25, n. SUPPL.1, pp. S100-S115.
- MOLLÁ-DESCALS A., FRASQUET M., RUIZ-MOLINA M.E. (2011), "Magnitude and intensity of the internationalization of the large distribution retailer: An international comparison", *Innovar*, vol. 21, n. 39, pp. 53-65.
- MOLLÁ-DESCALS A., FRASQUET M., RUIZ-MOLINA M.E., NAVARRO-SANCHEZ E. (2014), "Determinants of website traffic: The case of European fashion apparel retailers", *International Review of Retail, Distribution and Consumer Research*, vol. 24, n. 4, pp. 411-430.
- MOLLÁ-DESCALS A., FRASQUET-DELTORO M., RUIZ-MOLINA M.E. (2011), "Internationalization patterns in fashion retail distribution: Implications for firm results", *Service Industries Journal*, vol. 31, n. 12, pp. 1979-1993.
- MOORE C.M. (1997), "La mode sans frontières? The internationalisation of fashion retailing", *Journal of Fashion Marketing and Management*, vol. 1, n. 4, pp. 345-355.
- MOORE C.M., BIRTWISTLE G., BURT S. (2004), "Channel power, conflict and conflict resolution in international fashion retailing", *European Journal of Marketing*, vol. 38, n. 7, pp. 749-769.
- MOORE C.M., DOHERTY A.M., DOYLE S.A. (2010), "Flagship stores as a market entry method: The perspective of luxury fashion retailing", *European Journal of Marketing*, vol. 44, n. 1-2, pp. 139-161.
- MOORE C.M., FERNIE J. (2000), "Americans in London: The internationalisation of fashion designer retailing", *Journal of Fashion Marketing and Management*, vol. 4, n. 3, pp. 263-270.
- MOORE C.M., FERNIE J., BURT S. (2000), "Brands without boundaries - The internationalisation of the designer retailer's brand", *European Journal of Marketing*, vol. 34, n. 8, pp. 919-937.
- MOSTAGHEL R., OGHAI P., PARIDA V., SOHRABPOUR V. (2022), "Digitalization driven retail business model innovation: Evaluation of past and avenues for future research trends", *Journal of Business Research* 146, vol. 134-145.
- MUÑIZ-MARTÍNEZ N. (1998), "The internationalisation of European retailers in America: The US experience", *International Journal of Retail & Distribution Management*, vol. 26, n. 1, pp. 29-37.
- MYERS H., ALEXANDER N. (1996), "European food retailers' evaluation of global markets", *International Journal of Retail & Distribution Management*, vol. 24, n. 6, pp. 34-43.

- MYERS H., ALEXANDER N. (2007), "The role of retail internationalisation in the establishment of a European retail structure", *International Journal of Retail & Distribution Management*, vol. 35, n. 1, pp. 6-19.
- NATH P., KIRCA A.H., KIM S. (2021), "A Study of the Internationalization-Performance Relationship in Global Retailing: The Moderating Role of Brand Standardization and Cultural Diversity", *Journal of International Marketing*, vol. 29, n. 1, pp. 57-76.
- NATH P., KIRCA A.H., KIM S., ANDRAS T.L. (2019), "The Effects of Retail Banner Standardization on the Performance of Global Retailers", *Journal of Retailing*, vol. 95, n. 3, pp. 30-46.
- OWENS M. (2010), "Equity ownership and control of international joint ventures in the retail sector", *International Review of Retail, Distribution and Consumer Research*, vol. 20, n. 5, pp. 559-581.
- OWENS M., QUINN B. (2007), "Problems encountered within international retail joint ventures: UK retailer case study evidence", *International Journal of Retail & Distribution Management*, vol. 35, n. 10, pp. 758-780.
- PALMER M. (2005a), "International retail joint venture learning", *Service Industries Journal*, vol. 26, n. 2, pp. 165-187.
- PALMER M. (2005b), "Retail multinational learning: A case study of Tesco", *International Journal of Retail and Distribution Management*, vol. 33, n. 1 SPEC. ISS., pp. 23-48.
- PALMER M., OWENS M. (2006), "New directions for international retail joint venture research", *International Review of Retail, Distribution and Consumer Research*, vol. 16, n. 2, pp. 159-179.
- PALMER M., OWENS M., DE KERVENOAEEL R. (2010), "Paths of the least resistance: Understanding how motives form in international retail joint venturing", *Service Industries Journal*, vol. 30, n. 6, pp. 965-989.
- PALMER M., QUINN B. (2005), "An exploratory framework for analysing international retail learning", *International Review of Retail, Distribution and Consumer Research*, vol. 15, n. 1, pp. 27-52.
- PALMER M., QUINN B. (2007), "The nature of international retail divestment: Insights from Ahold", *International Marketing Review*, vol. 24, n. 1, pp. 26-45.
- PARADA P., ALEMANY L., PLANELLAS M. (2009), "The Internationalisation of Retail Banking: Banco Santander's Journey towards Globalisation", *Long Range Planning*, vol. 42, n. 5-6, pp. 654-677.
- PEDERZOLI D. (2006), "Conception and test of a comprehensive model of international strategy for retail companies", *International Review of Retail, Distribution and Consumer Research*, vol. 16, n. 4, pp. 415-431.
- PEDERZOLI D., KUPPELWIESER V.G. (2015), "Retail companies' internationalization behavior and the 2008 crisis", *International Journal of Retail and Distribution Management*, vol. 43, n. 9, pp. 870-894.
- PELLEGRINI P.L. (1994), "Alternatives for growth and internationalization in retailing", *The International Review of Retail, Distribution and Consumer Research*, vol. 4, n. 2, pp. 121-148.
- PETROU A.P. (2009), "Foreign Market Entry Strategies in Retail Banking: Choosing an Entry Mode in a Landscape of Constraints", *Long Range Planning*, vol. 42, n. 5-6, pp. 614-632.
- PICOT-COUPPEY K. (2006), "Determinants of international retail operation mode choice: Towards a conceptual framework based on evidence from French specialised retail chains", *International Review of Retail, Distribution and Consumer Research*, vol. 16, n. 2, pp. 215-237.
- PICOT-COUPPEY K. (2014), "The pop-up store as a foreign operation mode (FOM) for retailers", *International Journal of Retail and Distribution Management*, vol. 42, n. 7, pp. 643-670.
- PICOT-COUPPEY K., BURT S.L., CLIQUET G. (2014), "Retailers[U+05F3] expansion mode choice in foreign markets: Antecedents for expansion mode choice in the light of internationalization theories", *Journal of Retailing and Consumer Services*, vol. 21, n. 6, pp. 976-991.
- PREMAZZI K., CASTALDO S., GROSSO M., HOFACKER C. (2010), "Supporting retailers to exploit online settings for internationalization: The different role of trust and compensation", *Journal of Retailing and Consumer Services*, vol. 17, n. 3, pp. 229-240.
- QUINN B. (1999), "The temporal context of UK retailers' motives for international expansion", *Service Industries Journal*, vol. 19, n. 2, pp. 101-116.
- QUINN B., ALEXANDER N. (2002), "International retail franchising: A conceptual framework", *International Journal of Retail & Distribution Management*, vol. 30, n. 5, pp. 264-276.
- QUINN B., DOHERTY A.M. (2000), "Power and control in international retail franchising: Evidence from theory and practice", *International Marketing Review*, vol. 17, n. 4-5, pp. 354-372.
- RETAIL HEAVEN IN A HALF-PIPE: HOW SMES CAN INTERNATIONALIZE TOO. (2007), *Strategic Direction*, vol. 23, n. 1, pp. 16-18.
- ROGERS H., GHOURI P.N., GEORGE K.L. (2005), "The Impact of Market Orientation on the Internationalization of Retailing Firms: Tesco in Eastern Europe", *International Review of Retail, Distribution and Consumer Research*, vol. 15, n. 1, pp. 53-74.
- SATO Y. (2004), "Some reasons why foreign retailers have difficulties in succeeding in the Japanese market", *Journal of Global Marketing*, vol. 18, n. 1-2, pp. 21-44.
- SCHMEKEL V. (2004), "The strategic importance of retail investment in Asia and its implications for the metro group in Asia", *Journal of Global Marketing*, vol. 18, n. 1-2, pp. 133-150.
- SCHU M., MORSCHEIT D. (2017), "Foreign market selection of online retailers-A path-dependent perspective on influence factors", *International Business Review*, vol. 26, n. 4, pp. 710-723.
- SCHU M., MORSCHEIT D., SWOBODA B. (2016), "Internationalization Speed of Online Retailers: A Resource-Based Perspective on the Influence Factors", *Management International Review*, vol. 56, n. 5, pp. 733-757.
- SEOCK Y.K., LIN C. (2011), "Cultural influence on loyalty tendency and evaluation of retail store attributes: An analysis of Taiwanese and American consumers", *International Journal of Retail & Distribution Management*, vol. 39, n. 2, pp. 94-113.
- SHIRODKAR V., BATSAKIS G., KONARA P., MOHR A. (2022), "Disentangling the effects of domestic corporate political activity and political connections on firms' internationalisation: Evidence from US retail MNEs", *International Business Review*, vol. 31, n. 1.
- SIEBERS L.Q. (2011), "Foreign retailers in China: The first ten years", *Journal of Business Strategy*, vol. 33, n. 1, pp. 27-38.

- SIMOVÁ J. (2010), "Internationalization in the process of the Czech retail development. E a M: Ekonomie a Management, vol. 13, n. 2, pp. 78-91.
- SIMPSON E.M., THORPE D.I. (1995), "A Conceptual Model of Strategic Considerations for International Retail Expansion", *The Service Industries Journal*, vol. 15, n. 4, pp. 16-24.
- SIMPSON E.M., THORPE D.I. (1999), "A specialty store's perspective on retail internationalization: A case study", *Journal of Retailing and Consumer Services*, vol. 6, n. 1, pp. 45-53.
- SPARKS L. (1995), "Reciprocal Retail Internationalisation: The Southland Corporation, Ito-Yokado and 7-Eleven Convenience Stores", *The Service Industries Journal*, vol. 15, n. 4, pp. 57-96.
- SWOBODA B., ANDERER M. (2008), "Coordinating the international retailing firm: Exploratory models and evaluations of structural, systemic, and cultural options", *Journal of Retailing and Consumer Services*, vol. 15, n. 2, pp. 104-117.
- SWOBODA B., ELSNER S., OLEJNIK E. (2015), "How do past mode choices influence subsequent entry? A study on the boundary conditions of preferred entry modes of retail firms", *International Business Review*, vol. 24, n. 3, pp. 506-517.
- SWOBODA B., FOSCHT T., CLIQUET G. (2008), "International value chain processes by retailers and wholesalers-A general approach", *Journal of Retailing and Consumer Services*, vol. 15, n. 2, pp. 63-77.
- SWOBODA B., SCHWARZ S., HÄLSIG F. (2007), "Towards a conceptual model of country market selection: Selection processes of retailers and C&C wholesalers", *International Review of Retail, Distribution and Consumer Research*, vol. 17, n. 3, pp. 253-282.
- TOKATLI N. (1999), "A comparative report on the profiles of retailing in the emerging markets of Europe: Turkey, Poland, Hungary, Portugal, and Greece", *Journal of Euromarketing*, vol. 8, n. 4, pp. 75-105.
- TOLSTOY D., JONSSON A., SHARMA D.D. (2016), "The influence of a retail firms geographic scope of operations on its international online sales", *International Journal of Electronic Commerce*, vol. 20, n. 3, pp. 293-318.
- TOLSTOY D., NORDMAN E.R., HÄNEL S.M., ÖZBEK N. (2021), "The development of international e-commerce in retail SMEs: An effectuation perspective", *Journal of World Business*, vol. 56, n. 3. <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85096182225&doi=10.1016%2fj.jwb.2020.101165&partnerID=40&md5=0c04f37bdbc16bc44a77c65a2e1a64e7>
- UUSITALO O., RÖKMAN M. (2004), "First foreign grocery retailer enters the Finnish market -a stakeholder model", *Journal of Retailing and Consumer Services*, vol. 11, n. 4, pp. 195-206.
- VENZIN M., KUMAR V., KLEINE J. (2008), "Internationalization of retail banks: A micro-level study of the multinationality-performance relationship", *Management International Review*, vol. 48, n. 4, pp. 463-485.
- VIDA I. (2000), "An empirical inquiry into international expansion of US retailers", *International Marketing Review*, vol. 17, n. 4-5, pp. 454-475.
- VIDA I., FAIRHURST A. (1998), "International expansion of retail firms: A theoretical approach for future investigations", *Journal of Retailing and Consumer Services*, vol. 5, n. 3, pp. 143-151.
- VIDA I., REARDON J., FAIRHURST A. (2000), "Determinants of international retail involvement: The case of large U.S. retail chains", *Journal of International Marketing*, vol. 8, n. 4, pp. 37-60.
- WANG S. (2009), "Foreign retailers in post-WTO China: Stories of success and setbacks", *Asia Pacific Business Review*, vol. 15, n. 1, pp. 59-77.
- WIGLEY S., CHIANG C.L.R. (2009), "Retail internationalisation in practice: Per una in the UK and Taiwan", *International Journal of Retail and Distribution Management*, vol. 37, n. 3, pp. 250-270.
- WIGLEY S.M., MOORE C.M., BIRTWISTLE G. (2005), "Product and brand. Critical success factors in the internationalisation of a fashion retailer", *International Journal of Retail and Distribution Management*, vol. 33, n. 7, pp. 531-544.
- YOON J., SUH M.G. (2021), "The key elements of strategic leadership capabilities to the latecomer firm: The case of RT Mart's success in the Chinese retail industry", *Asia Pacific Business Review*, vol. 27, n. 1, pp. 29-52.
- ZAVRŠNIK B. (2007), "Critical success factors for international fashion retailers entering foreign markets", *Fibres and Textiles in Eastern Europe*, vol. 15, n. 4, pp. 13-17.

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Track 9
Small & Family Business

Dynamics of Change: A Comparative Analysis of Commitment in Family vs. Non-Family Businesses

ROBERTA PINNA¹ MICHELA FLORIS² FABIO CORONA³ GIANFRANCO CICOTTO⁴
CINZIA DESSI⁵

Abstract

The challenge of insufficient employee commitment to organizational change significantly impedes management's ability to successfully implement new strategies, a hurdle notably pronounced in family businesses due to a strong adherence to tradition. This study investigates the impact of psychological ownership and effective internal communication-or communication satisfaction-on bolstering commitment to change. This research will suggest propositions to test subsequently with statistical analysis after the collection and analysis of 501 employees' interviews across Italian family and non-family businesses. Our propositions are built on the roots of psychological ownership, and commitment to change. The study also explains how the dynamics between communication, psychological ownership, and commitment vary between family and non-family businesses. This will underscore the critical role of fostering psychological ownership and communication satisfaction in enhancing employee commitment to organizational change initiatives.

Keywords: *Change management, Commitment to change, Communication, Psychological Ownership, family and non-family business*

Framing of the research. *In organizational studies, Moran and Brightman (2001) emphasize the importance of change management for businesses to adapt and thrive amid external pressures. Change management involves rejuvenating an organization's direction, structure, and capabilities to meet stakeholder needs, necessitating updates to procedures, job content, and skills. This adaptability leads to organizational ambidexterity, as described by Tushman and O'Reilly (1996), which is crucial for maintaining stability while promoting innovation. It entails balancing exploitation (optimizing current operations) and exploration (seeking new ideas), enabling companies to manage ongoing operations efficiently while innovating for future success.*

Balancing exploitation, crucial for current success, and exploration, necessary for future sustainability, presents a significant dilemma in change management (Schwarz et al., 2021). This balance is particularly relevant in family enterprises, which represent a significant segment of the global business landscape and are defined by familial ownership, management, and a vision for intergenerational transfer. Despite perceptions of their aversion to change compared to non-family firms (Dessi et al., 2023), family businesses encounter unique challenges, especially during succession, requiring a reevaluation of roles and structures (Dettori and Floris, 2023). Succession is a delicate phase where logical and emotional factors intertwine, significantly impacting business continuity. The challenge of instigating change is underscored by high attrition rates across generations, with only 30% of businesses surviving into the second generation and 10% into the third. Research indicates an innovation gap in family businesses due to their focus on long-term goals and preservation of familial legacy (Casillas & Moreno, 2010; Jell et al., 2015), a trend towards conservatism (Kraczy et al., 2015; Naldi et al., 2007; Zahra, 2005), and lower adaptability to change (Lubatkin et al., 2007). Failure to implement change can lead to financial losses, decreased market share, and increased costs from cultural disintegration and turnover (Kromah et al., 2024).

There is a consensus in the literature that employee commitment to change is crucial for supporting management innovation; the challenge lies in deciphering the evolution of this commitment over time. This subject's centrality has propelled researchers to investigate the critical factors at both individual (Cunningham, 2006; Herscovitch & Meyer,

¹ University of Cagliari
e-mail: pinnar@unica.it

² University of Cagliari
e-mail: micfloris@unica.it

³ e-mail: fabio.corona21@gmail.com

⁴ e-mail: dott.cicotto@gmail.com

⁵ University of Cagliari
e-mail: cdesi@unica.it

2002; Judge et al., 1999; Wanberg & Banas, 2000) and organizational levels (Cunningham et al., 2002) that significantly influence employee behavior towards supporting management innovation.

In this study, we argue that Psychological Ownership (PO) serves as a crucial perspective for understanding how possessive feelings towards objects bolster individuals' commitment to change. Specifically, this research delves into the effects of PO and transparent internal communication (from now on called CS as "communication satisfaction") on commitment to change (CT from now on)⁶.

The interplay between CS, PO, and CT remains underexplored despite extensive examination of communication's role in change processes,

Purpose of the paper. CT is vital in organizational transformations, guiding individuals' adaptation. The absence of commitment often leads to the failure of change initiatives. Recognized for promoting supportive behaviors, CT involves coping strategies to handle change-related stress and uncertainty. Such strategies are critical for maintaining psychological well-being and facilitating effective change navigation, highlighting the significance of commitment in managing organizational change impacts. The construct of CT is articulated as a motivational state (a mindset) binding an individual to a particular course of action deemed essential for the fruitful execution and realization of a change initiative (Herscovitch & Meyer, 2002). This motivational state manifests in three distinct forms (Meyer, Allen, & Smith, 1993): affective commitment (AC from now on), normative commitment (NC from now on), and continuance commitment (CC from now on).

Employees' support for change is influenced by their commitment type, AC, driven by a positive attitude towards change, enhances proactive support and effective coping with stress related to change. In contrast, CC, stemming from a lack of alternatives, can lead to stress and negatively affect the change process. Contextual factors such as organizational tenure, change frequency, previous change experiences, self-efficacy, participation levels, quality of information, and interpersonal relationships significantly impact CT, according to studies by Rafferty & Griffin (2006) and Wanberg & Banas (2000). The relationship between PO and CT introduces a new dimension to understanding organizational change, emphasizing the importance of employees' feelings of ownership over the change process and outcomes (Pierce et al., 2001; 2009; Dawkins et al., 2015).

Employee commitment is pivotal for adapting to and implementing change, with the absence of commitment being a major failure point for change initiatives. This commitment fosters supportive behaviors and coping mechanisms for dealing with the stress of organizational transitions (Cunningham, 2006; Parish et al., 2008). Recent studies suggest that PO, the emotional and proprietary feelings employees have towards their work and organization, contributes significantly to CT, impacting their support for change initiatives. PO functions at individual and collective levels, affecting workplace motivations, attitudes, and behaviors, and is linked to positive organizational outcomes such as job satisfaction, organizational identification, and commitment (Dawkins et al., 2015; Liu et al., 2012; Mayhew et al., 2007; Sieger et al., 2011).

Organizational change introduces uncertainty and stress, which can be mitigated by effective communication. Communication satisfaction enhances PO by deepening employees' connection to their roles and the organization, crucial for reducing resistance and fostering inclusivity during change. Based on these insights, the study hypothesizes a positive relationship between PO and CT (proposition 1). CS is positively related to commitment to change CT (Proposition 2a), and CS is positively related to PO (proposition 2b). This framework underscores the critical role of employee commitment types, PO, and CS in navigating organizational change, suggesting that fostering a sense of ownership and ensuring clear, inclusive communication are key to successful change implementation.

Methodology. This study is still in progress, and we will test our propositions through statistical analysis to investigate the dynamics among PO, CS and CT. Furthermore, we will examine how the nature of the company, whether family-owned or non-family, impacts the intensity of these relationships.

The study involved 501 questionnaires. Within the sample, 63.5% (N = 318) were men and 36.5% (N = 183) were women. They belonged both to family (N = 320, 63.9%) and non-family (N = 181; 36.1%) companies. Sociodemographic data on age were collected and expressed as intervals. Based on this, the 53% of the sample consisted of participants with "18 to 30" and "31 to 40" years old (N = 131, 26.2% and N = 134, 36.8% respectively).

Will be analyze data using IBM SPSS Statistics software, version 25. The initial steps will include exploring socio-demographic characteristics and key research variables. Analysis of Variance (ANOVA) will be utilized to identify any statistically significant variances among the research variables, specifically to factors such as the type of company (family-owned vs. non-family) and participant gender. Additionally, we will investigate linear correlations to determine significant associations between the variables.

The data collection process will employ a separated questionnaire. The initial segment will solicit socio-demographic details from participants, while the latter will be devoted to evaluating key research constructs through three distinct scales. Each scale will be subjected to reliability analysis via Cronbach's alpha to affirm their dependability.

⁶ For easier reading, the legend of acronyms used in this paper is given here:

- PO psychological ownership
- CS Communication satisfaction
- CT commitment to change
- AC affective commitment
- NC normative commitment
- CC continuance commitment

PO: To assess *PO*, a 10-item scale derived from Avey et al.'s (2009) research will be utilized, categorizing items into five key factors of *PO*: Territoriality, Self-efficacy, Accountability, Belongingness, and Self-identity.

CS: This dimension will be measured using a scale adapted from Zijlstra-Koning & de Jong (2007) and the CSQ (Downs & Hazen, 1977), comprising 24 items across six sub-dimensions that include aspects like superior-subordinate relationships and interdepartmental communications.

CT: Employing a scale developed by Herscovitch and Meyer (2002), this construct will be quantified using 18 items divided evenly among three facets: Affective, Continuance, and Normative commitment to change. Responses will be captured on a 5-point Likert scale ranging from strong disagreement to strong agreement.

Through this methodological approach, the study aims to rigorously evaluate the interplay between *PO*, *CS*, and *CT*, underpinned by a reliable metric assessment.

Results. Our study is ongoing, and we anticipate the following outcomes based on preliminary analyses:

The ANOVA models are expected to reveal significant differences in the average scores of *AC* based on gender and the type of company. We predict that female participants will have higher *AC* scores compared to males, and employees in non-family businesses will show greater *AC* levels than those in family-owned firms.

Moreover, we believe we can find moderate, positive, and statistically significant correlations between *PO* and *AC* and *NC*. Similarly, moderate and positive associations are expected between *CS*, *AC* and *NC*. *CC* is not predicted to show significant correlations with any research variables.

A significant positive relationship between *PO* and *CS* is probable, suggesting that higher levels of *PO* are associated with greater *CS*.

Variations in the impact of *CS* and *PO* on *AC* are estimated by company type. *CS* may not significantly influence *AC* in family-owned businesses, but *PO* is predicted to have a positive impact. We expect an indirect effect of *CS* on *AC* through *PO*, indicating *PO*'s mediation in this relationship. In non-family companies, both *CS* and *PO* are likely to significantly affect *AC*, with a significant indirect effect of *CS* on *AC* through *PO*, suggesting partial mediation by *PO*. The indirect effects are not expected to differ significantly between family and non-family businesses, indicating a consistent mediation role of *PO* across company types.

Regarding the influence on *NC*, both *CS* and *PO* are anticipated to have significant impacts in family-owned companies, with an expected indirect effect of *CS* on *NC* through *PO*, indicating partial mediation by *PO*. While *PO* is predicted to have a significant impact in non-family businesses, *CS*'s effect might not be significant.

These expectations highlight the nuanced roles of *PO* and *CS* in shaping commitment types of *AC* and *NC* within different organizational contexts, emphasizing the potential mediation role of *PO*.

Research limitations. The study's principal constraints are linked to the composition of the firm sample utilized. To enhance the robustness of the proposal, future research could consider diversifying the sample to include both large and small enterprises, assessing the stability of the results across different business sizes or, even, across different countries, which may reveal interesting scenarios. Thus, the study could be extended to incorporate a cultural dimension by distinguishing between various geographical locations, thereby evaluating the cultural influence on the research outcomes. A stimulating avenue for further investigation would involve a deeper analysis of firm categories: focusing solely on family businesses could reveal how the age of the firm and its generational makeup influence the results. In contrast, an examination of non-family firms could explore how leadership styles affect the findings.

Managerial implications. The study's proposal underscores the significant managerial implications of *PO* in facilitating organizational change. It highlights the necessity for companies to cultivate *PO* among employees to mitigate resistance and promote acceptance of change. Specifically, the study advocates for an ambidextrous organizational framework that nurtures attributes conducive to individual initiative, cooperation, multitasking, and autonomy, thereby enhancing *PO*.

This research pinpoints the critical role of managers and employees perceiving change initiatives as personally significant, essentially endorsing the notion of *PO* towards change. The intricate relationship between *PO* and organizational attitudes towards change is influenced by several factors, notably the Sense of Control and Knowledge. Employees experience increased control when their roles offer diversity, significance, autonomy, and identity, resonating with Hackman and Oldham's job characteristics theory. Conversely, bureaucratic structures and centralized information flow can diminish this sense of control and hinder *PO*.

CS emerges as vital in reducing uncertainties and fostering a sense of control, particularly in family businesses where *PO*'s role is profoundly mediating. *CS* is essential, enabling a comprehensive understanding of change objectives, processes, expected outcomes, and individual implications, thereby reinforcing *PO*.

Moreover, it could be interesting to identify which significant dimensions influence *PO*.

In essence, this study would delineate the importance of *PO* in shaping positive organizational change attitudes, suggesting that fostering *PO* through strategic organizational interventions, excellent communication, and inclusive governance can significantly enhance adaptability and manage change resistance. Transitioning towards transformational leadership and facilitating open organizational dialogues are recommended to align employee perspectives with organizational goals effectively.

Originality of the paper. Proposing a departure from existing literature (Cocieru et al., 2019), this study suggests examining the significant influence of *PO* on employees' attitudes toward change and their motivation for contributing to its success.

This research aims to explore the relationships among CS, PO, and CT within the context of family and non-family businesses in Italy, building on and potentially corroborating findings that highlight PO's critical role in enhancing CT aspects (Liu et al., 2012).

Drawing from the groundwork laid by Avey et al. (2009), this investigation seeks to contribute original insights by testing our propositions with the hypothesis that PO significantly and positively influences CT, especially in terms of AC and NC. This relationship is anticipated to be observable across different organizational forms, including both family-owned and non-family enterprises, with an expected stronger impact on NC. The study aims to be pioneering in showing how an intrinsic sense of ownership not only bolsters the perceived obligation towards change but also acts as a catalyst for organizational transformation.

Expanding on the seminal work of scholars such as Armenakis & Bedeian (1999), Beer & Nohria (2000), and Herscovitch & Meyer (2002), this research proposes to shed new light on the positive effects of CS on CT. It intends to uniquely demonstrate a significant, positive correlation between CS and the dimensions of AC and NC, with subsequent analyses exploring CS's critical role in shaping these types of commitment.

The study plans to highlight the transformative potential of well-communicated change, emphasizing the importance of a clear communication of change processes to employees to alleviate concerns and foster a culture ready for change. It aims to innovatively link effective communication during transitions to outcomes such as increased acceptance of change, reduced anxiety, and enhanced trust in leadership, offering a fresh perspective on change management discussions.

Additionally, this research has the potential to reveal a significant link between CS and PO, suggesting a meaningful interaction between these constructs rather than their independence. It proposes to investigate PO's mediating role in enhancing the relationship between CS and CT, particularly affecting AC and NC. The study will examine how transparent communication about change, coupled with a strong sense of ownership among employees over their work, optimally impacts their commitment to change, suggesting a nuanced interplay between communication, ownership, and commitment in the context of organizational change.

References

- ARMENAKIS A.A., BEDEIAN A.G. (1999), "Organizational change: A review of theory and research in the 1990s", *Journal of management*, vol. 25, n. 3, pp. 293-315.
- AVEY J.B., AVOLIO B.J., CROSSLEY C.D., LUTHANS F. (2009), "Psychological ownership: Theoretical extensions, measurement and relation to work outcomes", *Journal of Organizational Behavior*, vol. 30, pp. 173-191.
- BEER M., NOHRIA N. (2000), "Cracking the code of change", *Harvard business review*, vol. 78, n. 3, pp. 133-141.
- CASILLAS J.C., MORENO A.M., BARBERO J.L. (2010), "A configurational approach of the relationship between entrepreneurial orientation and growth of family firms", *Family business review*, vol. 23, n. 1, pp. 27-44.
- COCIERU O.C., LYLE M.C., HINDMAN L.C., MCDONALD M.A. (2019), "The 'dark side' of psychological ownership during times of change", *Journal of Change Management*, vol. 19, n. 4, pp. 266-282.
- CRONBACH L.J. (1951), "Coefficient alpha and the interval structure of tests", *Psychometrika*, vol. 16, pp. 297-334.
- CUNNINGHAM C.E., WOODWARD C.A., SHANNON H.S., MACINTOSH J., LENDRUM B., ROSENBLOOM D., BROWN J. (2002), "Readiness for organizational change: A longitudinal study of workplace, psychological and behavioural correlates", *Journal of Occupational and Organizational psychology*, vol. 75, n. 4, pp. 377-392.
- CUNNINGHAM G.B. (2006), "Examining the relationships among coping with change, demographic dissimilarity and championing behaviour", *Sport Management Review*, vol. 9, n. 3, pp. 253-270.
- DAWKINS S., TIAN A.W., NEWMAN A., MARTIN A. (2017), "Psychological ownership: A review and research agenda", *Journal of Organizational Behavior*, vol. 38, n. 2, pp. 163-183.
- DE VEN A.H., POOLE M.S. (1995), "Explaining development and change in organizations", *Academy of management review*, vol. 20, n. 3, pp. 510-540.
- DESSÌ C., DETTORI A., FLORIS M. (2023), "Exploring different configurations of entrepreneurial orientation in small artisan family firms: A multi-case study", *Journal of Family Business Strategy*, vol. 14, n. 3, pp. 100503.
- DETTORI A., FLORIS M. (2023), "Improving continuity by simplifying the structure of family firms: a replication study", *Management Review Quarterly*, vol. 73, n. 2, pp. 635-660.
- DOWNS C.W., HAZEN M.D. (1977), "A factor analytic study of communication satisfaction", *The Journal of Business Communication* (1973), vol. 14, n. 3, pp. 63-73.
- HAYES A.F. (2015), "An index and test of linear moderated mediation", *Multivariate Behavioral Research*, vol. 50, pp. 1-22.
- HAYES A.F., ROCKWOOD N.J. (2017), "Regression-based statistical mediation and moderation analysis in clinical research: Observations, recommendations, and implementation", *Behaviour research and therapy*, vol. 98, pp. 39-57.
- HERSCOVITCH L., MEYER J.P. (2002), "Commitment to organizational change: extension of a three-component model", *Journal of applied psychology*, vol. 87, n. 3, pp. 474.
- JELL F., BLOCK J.H., HENKEL J., SPIEGEL F., ZISCHKA H. (2015), "Cross-functional patent management in family firms", *Journal of Business Economics*, vol. 85, pp. 181-203.
- JUDGE T.A., THORESEN C.J., PUCIK V., WELBOURNE T.M. (1999), "Managerial coping with organizational change: A dispositional perspective", *Journal of applied psychology*, vol. 84, n. 1, pp. 107.
- KRAICZY N.D., HACK A., KELLERMANN F.W. (2015), "CEO innovation orientation and R&D intensity in small and medium-sized firms: the moderating role of firm growth", *Journal of Business Economics*, vol. 85, pp. 851-872.
- KROMAH M.D., AYOKO O.B., ASHKANASY N.M. (2024), "Commitment to organizational change: The role of territoriality and change-related self-efficacy", *Journal of Business Research*, vol. 174, 114499.

- LIU J., WANG H., HUI C., LEE C. (2012), "Psychological ownership: How having control matters", *Journal of Management Studies*, vol. 49, n. 5, pp. 869-895.
- LUBATKIN M.H., LING Y., SCHULZE W.S. (2007), "An organizational justice-based view of self-control and agency costs in family firms", *Journal of Management Studies*, vol. 44, n. 6, pp. 955-971.
- MAYHEW M.G., ASHKANASY N.M., BRAMBLE T., GARDNER J. (2007), "A study of the antecedents and consequences of psychological ownership in organizational settings", *The Journal of social psychology*, vol. 147, n. 5, pp. 477-500.
- MEYER J.P., ALLEN N.J., SMITH C.A. (1993), "Commitment to organizations and occupations: Extension and test of a three-component conceptualization", *Journal of applied psychology*, vol. 78, n. 4, pp. 538.
- MEYER J.P., STANLEY D.J., HERSCOVITCH L., TOPOLNYTSKY L. (2002), "Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences", *Journal of vocational behavior*, vol. 61, n. 1, pp. 20-52.
- MORAN J.W., BRIGHTMAN B.K. (2001), "Leading organizational change", *Career development international*, vol. 6, n. 2, pp. 111-119.
- NALDI L., NORDQVIST M., SJÖBERG K., WIKLUND J. (2007), "Entrepreneurial orientation, risk taking, and performance in family firms", *Family business review*, vol. 20, n. 1, pp. 33-47.
- PARKER S.K., WALL T.D., JACKSON P.R. (1997), "“That's not my job”: Developing flexible employee work orientations", *Academy of management journal*, vol. 40, n. 4, pp. 899-929.
- PIERCE J.L., JUSSILA I., CUMMINGS A. (2009), "Psychological ownership within the job design context: Revision of the job characteristics model", *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, vol. 30, n. 4, pp. 477-496.
- PIERCE J.L., KOSTOVA T., DIRKS K.T. (2001), "Toward a theory of psychological ownership in organizations", *Academy of management review*, vol. 26, n. 2, pp. 298-310.
- RAFFERTY A.E., GRIFFIN M.A. (2006), "Perceptions of organizational change: a stress and coping perspective", *Journal of applied psychology*, vol. 91, n. 5, pp. 1154.
- SALANCIK G.R., PFEFFER J. (1978), "A social information processing approach to job attitudes and task design", *Administrative science quarterly*, pp. 224-253.
- SCHWARZ G.M., BOUCKENOOGHE D., VAKOLA M. (2021), "Organizational change failure: Framing the process of failing", *Human Relations*, vol. 74, n. 2, pp. 159-179.
- SIEGER P., BERNHARD F., FREY U. (2011), "Affective commitment and job satisfaction among non-family employees: Investigating the roles of justice perceptions and psychological ownership", *Journal of Family Business Strategy*, vol. 2, n. 2, pp. 78-89.
- TUSHMAN M.L., O'REILLY III C.A. (1996), "Ambidextrous organizations: Managing evolutionary and revolutionary change", *California management review*, vol. 38, n. 4, pp. 8-29.
- WANBERG C.R., BANAS J.T. (2000), "Predictors and outcomes of openness to changes in a reorganizing workplace", *Journal of applied psychology*, vol. 85, n. 1, pp. 132.
- ZAHRA S.A. (2005), "A theory of international new ventures: a decade of research", *Journal of international Business studies*, vol. 36, pp. 20-28.
- ZWIJZE-KONING K., DE JONG M. (2007), "Evaluating the communication satisfaction questionnaire as a communication audit tool", *Management communication quarterly*, vol. 20, n. 3, pp. 261-282.

Exploring the dynamics of external knowledge acquisition in family businesses: factors, constraints, and success indicators

ALESSIA SCIARRONE¹ GERARDO BOSCO² RAFFAELE D'AMORE³
DAVIDE LIBERATO LO CONTE⁴ MARIO CALABRESE⁵

Abstract

This research delves into the dynamics influencing family businesses' engagement with external knowledge, aiming to shed light on the motivations, challenges, and benefits associated with seeking knowledge beyond organizational boundaries. Drawing on a single case study methodology, we provide a detailed framework that offers insights into the factors driving family entrepreneurs to explore external knowledge sources. Additionally, we uncover the primary constraints and challenges faced by family businesses in accessing and leveraging external knowledge, offering actionable insights for overcoming these hurdles. Our findings suggest that addressing these challenges head-on can enhance family firms' capacity for innovation, adaptation, and success in dynamic market environments. Furthermore, we identify specific indicators that highlight the tangible benefits derived from family businesses' interactions with external knowledge sources, emphasizing the significance of cultivating collaboration networks beyond the confines of the family firm. Overall, this study contributes to the existing literature by offering a nuanced understanding of the intricate relationship between family businesses and external knowledge, with implications for both scholarly research and managerial practice.

Key words: Family Business; Familiness; Knowledge Management; Absorptive Capacity; Exploration; Dynamic Capabilities

Framing of the research. Organizational knowledge is widely recognized as a critical factor for a company's competitive advantage (Andersén, 2015), becomes even more crucial in rapidly evolving environments. In such contexts, firms can leverage organizational configurations where competitive advantage stems from the synergy between resources and competencies (Piciocchi et al., 2009). The capability to assimilate external knowledge from the business environment serves as an efficient means of swiftly acquiring new competencies (Grant, 1996; Kogut & Zander, 1992). Within this framework, the entrepreneurial mindset embraced by family decision-makers holds significant sway. They must embody an entrepreneurial inclination both at the individual and organizational levels (Oliveira & Dias, 2017). This is because family members in leadership roles face a twofold challenge: on one front, they must navigate family dynamics and business imperatives to ensure the enduring prosperity of the enterprise; simultaneously, they must possess the acumen to innovate and adapt swiftly to evolving market conditions. This necessitates a continual renewal of their skills and their integration into the company's operations, thereby enabling it to operate with enhanced agility vis-à-vis its competitors (Cohen & Levinthal, 1990). This extends past structural confines, viewing environmental dynamism as an avenue for opportunity rather than mere complexity (Saviano & Caputo, 2013).

The company's capacity to integrate, renew, reconfigure, and transform both internal and external resources is encapsulated by the term "dynamic capabilities" (Teece, 2007; Zahra & George, 2002; Zahra et al., 2006; Eisenhardt & Martin, 2000; Teece et al., 1997). The company's ability to "identify, assimilate, and leverage knowledge from the environment" (Cohen & Levinthal, 1990) is defined as absorptive capacity (AC). This dynamic capability empowers the organization to create value by fostering innovative advantages while concurrently mitigating the impact of existing ones (Lepak et al., 2007). According to Pütz and Werner (2023), AC assumes a pivotal role for small and medium-sized enterprises (SMEs), serving as a critical tool for crafting survival strategies and effectively navigating the complexities of globalization. Zahra and George (2002) propose that the creation of competitive advantage through absorptive

¹ Sapienza University of Roma
e-mail: alessia.sciarrone@uniroma1.it

² Sapienza University of Roma
e-mail: gerardo.bosco@uniroma1.it

³ Sapienza University of Roma
e-mail: raffaele.damore@uniroma1.it

⁴ Sapienza University of Roma
e-mail: davideliberato.loconte@uniroma1.it

⁵ Sapienza University of Roma
e-mail: mario.calabrese@uniroma1.it

capacity comprises two key components: potential absorptive capacity and realized absorptive capacity. This process begins with the ability of "acquisition," which signifies the company's adeptness at identifying and procuring pertinent external knowledge (potential absorptive capacity). Subsequently, the process advances to the stage of "assimilation," involving the requisite processes and routines to analyze, interpret, and comprehend the newfound knowledge (potential absorptive capacity). Moving forward, the phase of "transformation" necessitates the development and enhancement of procedures to seamlessly integrate the novel external knowledge with the existing repertoire (realized absorptive capacity). Ultimately, the "exploitation" of acquired knowledge becomes pivotal in assimilating it into current operational processes, with the aim of yielding tangible business results (realized absorptive capacity).

In the academic literature on absorptive capacity within family businesses, various factors have been investigated that can positively or negatively influence the firm's ability to identify, acquire, transform, and exploit knowledge from external sources. Among these factors are the influence of the family (Brinkerink, 2018; Chirico & Salvato, 2008; Daspit et al., 2019) and the role of non-family members (Belkhdja & Daghfous, 2021; Cunningham et al., 2016; Daspit et al., 2019), entrepreneurial orientation (Chaudhary & Batra, 2018; Hernandez-Perlines, 2018; Santos et al., 2021), and the level of technological competence (Chaudhary & Batra, 2018).

A more nuanced examination has been directed towards the structure of family social capital (Pearson et al., 2008), underscoring how robust social capital can positively influence the firm's capacity to amalgamate and integrate external resources with internal ones (Andersén, 2015; Belkhdja & Daghfous, 2021; Daspit et al., 2019; Pütz et al., 2023; Zahra & George, 2002). The notion of family social capital is intrinsically linked to the concept of familiness. Following Pearson et al.'s framework (2008), familiness is delineated as the culmination of the unique interplay among the three core dimensions of social capital (structural, cognitive, and relational). Put simply, familiness emerges from the interpersonal connections and bonds among family members (structural dimension), shared perceptions, interpretations, and systems of understanding (cognitive dimension), and resources fostered through personal relationships, including trust, norms, obligations, and identity (relational dimension). Consequently, as social capital resources among family members expand, those interconnected are better equipped to effortlessly share and combine knowledge, accessing internal information more efficiently (Daspit et al., 2019). Moreover, when social capital is robust, it encourages heightened cooperation and solidarity among family members themselves, fostering enhanced internal cohesion and mutual support (Daspit et al., 2019). Conversely, it has been observed that the same familiness may detrimentally affect the firm's capacity to identify external knowledge (Andersén, 2015; Daspit et al., 2019; Pütz et al., 2023; Zahra & George, 2002).

From this perspective, while high social capital facilitates significant internal knowledge sharing, it may also cultivate a closed mindset. This occurs because familial bonds can create resistance to seeking and embracing external ideas or knowledge. Consequently, familiness can be both a strength and a weakness for a company (Andersén, 2015). Companies with a high level of familiness may encounter difficulties in identifying and comprehending knowledge from external sources, potentially delaying the identification and adoption of new technologies compared to those with weaker familiness (Arregle et al., 2007; Carney, 2005; Daspit et al., 2019; König et al., 2013). Employing March's terminology (1991), familiness is likely positively associated with exploitation capability but inversely correlated with exploration capability (Andersén, 2015). However, assessing familiness as a positive or negative factor depends on the specifics of the industry and the business environment. In stable contexts, prioritizing internal efficiency is crucial, whereas in more unstable environments, continuous acquisition and integration of new knowledge become essential for the company's success (Zahra & George, 2002).

To fully understand familiness and identify the numerous factors influencing the knowledge management capabilities of family businesses, it's essential to expand the scope beyond just family social capital. As Sharma (2008) suggests, by integrating the research of Pearson et al. (2008) and Arregle et al. (2007), the close interconnectedness between family and business systems opens up avenues for potential appropriability that go beyond social capital flows to include other forms of capital. In this context, it's crucial to consider not only social capital but also human capital, which encompasses the knowledge, technical expertise, emotional resilience, and intellectual capital of both family and non-family members (Puhakka, 2002); financial capital, especially in terms of long-term investments; and physical capital, which includes the company's infrastructure, equipment, and tangible assets (Sirmon & Hitt, 2003). Embracing this perspective, familiness can be defined as the integration of social, human, financial, and physical capital resources within a firm, resulting from interactions between the family and business systems (Habbershon & Williams, 1999; Habbershon et al., 2003). To understand changes in familiness, it's crucial to monitor how resources available to the family and business systems evolve in response to the flow of capital between the two systems (Sharma, 2008).

According to Jansen et al. (2005) and Andersén (2015), in family businesses, their inherent tendency to be less externally oriented may lead firms with high levels of familiness to have a diminished capacity to identify and comprehend external knowledge (potential absorptive capacity). However, once assimilated, familiness could enhance the effective utilization of such knowledge (realized absorptive capacity) through specific mechanisms of social integration within the family and the presence of strong family social capital (Pütz & Werner, 2023).

Considering that potential absorptive capacity (AC) and realized absorptive capacity operate sequentially and directly influence innovation processes in family businesses (Aloulou, 2024; Ali & Park, 2016; Cepeda-Carrion et al., 2023; Chaudhary et al., 2021), these companies should maintain an open mindset and consistently update their knowledge, aligning it with emerging market trends and technologies. This is essential to prevent their knowledge base from becoming outdated and to ensure it can be effectively and profitably leveraged (Andersén, 2015; Filippini et al., 2012; Wang, 2016). Therefore, the proper implementation of AC enables family businesses to adapt promptly and flexibly to changing environmental conditions, such as shifts in industry structures, the introduction of new technologies, and

corporate crises (Boyd & Hollensen, 2012; Eisenhardt & Martin, 2000; Zahra & George, 2002). Scholars should consider the holistic effects of AC, particularly regarding the interplay between potential and realized AC, as it represents a crucial resource for companies in addressing challenges posed by continually evolving environmental changes (Eisenhardt & Martin, 2000; Pütz & Werner, 2023). Underexplored are the factors influencing the willingness and motivation of family entrepreneurs to seek external knowledge, even within environments rich in familiness. Kotler et al. (2020), aligning with existing literature, argue that the emotional attachment of family owners to the business often leads them to undervalue the significance of external knowledge, thereby diminishing the firm's inclination to acquire and integrate new knowledge beyond its established realms.

The emerging insights underscore the critical importance of comprehending the cognitive processes guiding decision-makers' actions. Despite the evolving landscape, decision-makers often adhere to traditional patterns, criteria, and techniques rooted in an outdated perception of linearity within entrepreneurial systems (Calabrese, 2014), particularly evident in contexts marked by strong value categories (e.g., business families with a pronounced sense of familiness). This highlights the imperative for an interpretative framework to aid decision-makers in navigating complex contexts, facilitating the interpretation of phenomena and variables inherent to such environments, thus enhancing the decision-making process (Barile, 2008; Calabrese et al., 2024).

Purpose of the paper. The aim of this research is to deepen the understanding of the dynamics influencing the capability of family businesses to identify and acquire external knowledge. Family businesses, often characterized by a common language and shared experiences (Katz & Kahn, 1978), may tend to favor the use of their internal resources for knowledge management (Daspit et al., 2019; Pearson et al., 2008). However, there are circumstances in which these businesses turn to external sources to acquire new knowledge. These activation triggers can be manifold, including corporate crises, new corporate strategies, rapidly evolving environmental conditions, technological changes, or competitive pressures (Duchek, 2013; Zahra & George, 2002).

Academic research on family businesses and absorptive capacity suggests a strong link between the characteristics of family ownership and the use of external knowledge; however, there is still little clarity on the socio-emotional mechanisms driving this effect (Kotlar, 2020; Pütz & Werner, 2023). During the perception process, the acceptance or rejection of new information is influenced by value categories, which determine the extent of variation in the diversity of knowledge possessed as a result of information reception (Barile & Calabrese, 2011).

The goal is therefore to identify the factors that drive family entrepreneurs to seek knowledge beyond company boundaries. This approach aims to understand the crucial role of the family entrepreneur in directing the company outward and fostering openness to new sources of knowledge.

QR1 = What are the factors driving family entrepreneurs to seek knowledge beyond company boundaries, and how do they influence the company's outward orientation?

Furthermore, the aim is to investigate the constraints and challenges encountered by family entrepreneurs in their attempt to access external knowledge. Among these factors are, for example, safeguarding independence from external agents (Donckels & Fröhlich, 1991) and preserving the socio-emotional heritage of the organization (Gomez-Mejia et al., 2007). Understanding such obstacles and difficulties is crucial for formulating effective strategies that enable family entrepreneurs to overcome them and fully leverage the opportunities offered by external knowledge.

QR2 = What are the main constraints and challenges that family entrepreneurs face in the process of exploring external knowledge?

Lastly, it is common for senior family members and older employees to hinder the use of knowledge, displaying distrust towards changes and little interest in new knowledge (Eniola, 2023). Consequently, it becomes essential to identify specific indicators that highlight the benefits of interacting with external knowledge sources. These indicators not only provide a tangible measure of the effectiveness of external knowledge acquisition strategies but also help overcome the family entrepreneur's resistance to external openness, offering concrete evidence of the importance and advantages of engaging with external knowledge sources for the long-term success of the family business, thus facilitating the creation of solid and advantageous collaboration networks for the company.

QR3 = What are the specific indicators that can highlight the benefits derived from the interaction of family businesses with external knowledge sources?

Methodology. Addressing the research gaps identified in the context of decision-making processes within family-run businesses, often influenced by specific cultural models and values, this study aims to propose hypotheses to fill these gaps. The objective is to correlate the effective contributions of process and knowledge management with company performance metrics, such as economic-financial sustainability and operational efficiency. To achieve this goal, the study focuses on a specific case of a company (single case research), intending to investigate a practitioner enterprise and the dynamics it experiences in managing "familiness" and its impact on governance and management methods. The core of the analysis is focused on the factors guiding the transition from adopting family procedures (first-level change) to integrating external knowledge (second-level change). This study holds crucial importance in fully understanding the complexity of this transition, which marks a critical shift from maintaining established practices to the ability to assimilate new knowledge. In other words, the investigation explores how the company under study, first and foremost, recognized the need to open up to external sources, and secondly, utilized external knowledge to increase efficiency and improve performance through the implementation of process and knowledge management techniques, while mitigating potential constraints associated with the familial nature of entrepreneurship.

External knowledge refers to the various knowledge beyond the expertises and traditional practices of the family entrepreneur. Considering this focus, the external knowledge are connected both external professionals and specialized employees, in order to their contribution to improve the overall knowledge of the company, generating, by this way, the conditions to improve performances.

The methodology is structured into several phases:

- **Case study selection:** A representative company undergoing generational transition and demonstrating interest in implementing new management techniques to enhance its performance has been chosen.
- **Data collection:** Information is gathered through interviews with the CEO and functional managers, focusing on the role of external knowledge in implementing process and knowledge management techniques.
- **Data analysis:** The collected information will be analyzed to understand the governance and management methods used by the company, the level of formalization of the organizational structure, and the economic-financial and operational performance indicators. Additionally, the analysis will include examination of the generational transition, process explicitation, and implementation of knowledge management strategies.
- **Performance evaluation:** Performance indicators will be identified and examined before and after the implementation of the new process and knowledge management techniques to assess their overall impact on the company.
- **External context:** External factors such as economic and regulatory context that could influence company performance will be taken into account, ensuring a comprehensive and accurate evaluation.

Through this methodology, our objective is to underscore the significance of external knowledge acquisition in deploying process and knowledge management methodologies within the familial business milieu. The ultimate objective is to elucidate how the transition from tacit to explicit knowledge, facilitated by external knowledge utilization, may enhance the overall performance of the company within the framework of familiness.

Results. The anticipated outcomes of this ongoing research endeavor aim to significantly contribute to the existing literature on family businesses and their engagement with external knowledge, particularly in the realm of absorptive capacity. By offering a comprehensive framework of the dynamics shaping family firms' absorptive capacity, this study adds depth to our understanding of how these organizations navigate the knowledge landscape. Specifically, the identification of key drivers propelling family entrepreneurs to seek knowledge beyond their organizational boundaries provides novel insights into the motivations behind knowledge acquisition strategies in family businesses. Understanding these drivers can help shed light on the strategic decisions made by family firms regarding their engagement with external sources of knowledge. Moreover, by uncovering the primary constraints and challenges faced by family entrepreneurs in accessing and exploring external knowledge, this research offers actionable insights for overcoming these hurdles, thereby enhancing family firms' capacity for innovation, adaptation, and success in dynamic market environments. This nuanced understanding not only enriches theoretical perspectives on absorptive capacity but also provides practical implications for family business practitioners seeking to leverage external knowledge effectively.

Research limitations. Using a single case study as a research method presents some intrinsic limitations that need to be considered. Firstly, the generalizability of the results could be compromised since the data and conclusions are based on a single organization. This means that the findings may not be representative of other family businesses with different contexts and characteristics. Additionally, the risk of subjective interpretation is increased as the results largely depend on the researcher's interpretation and analysis. Moreover, the lack of diversity in the sample may limit the variety of perspectives and experiences considered in the case study. Lastly, since a single case study provides a limited overview of a single business reality, there could be other unidentified or unconsidered influential variables or factors that may affect the results in unforeseen ways.

Managerial implications. This research contributes valuable practical insights by shedding light on the primary constraints and challenges encountered by family entrepreneurs as they navigate the realm of accessing and leveraging external knowledge. The examination of the factors motivating entrepreneurs to pursue external knowledge (QR1) facilitates the refinement of models that are more precise and anticipatory in nature. Furthermore, this study delves into the socio-emotional mechanisms guiding firms as they transition from reliance on familial routines (representing a first-level change) to embracing external knowledge (representing a second-level change), thus furnishing practical insights directly applicable to family entrepreneurs. Such an approach enables the formulation of tailored strategies that foster consonance among the family system, the business framework, and the external milieu.

Through a meticulous identification and analysis of the principal constraints and hurdles confronted by family entrepreneurs in their quest for external knowledge exploration (QR2), pragmatic recommendations can be derived to surmount these challenges and enhance the efficacy of endeavors aimed at acquiring external knowledge within family enterprises. Additionally, the discernment of specific indicators elucidating the benefits derived from family businesses' engagements with external knowledge sources (QR3) not only serves to substantiate the tangible advantages accrued from such interactions but also underscores the significance of nurturing collaborative networks that transcend the confines of the familial enterprise. This equips family entrepreneurs with a demonstrative instrument emphasizing the imperative of adopting an open and innovative approach to managing external knowledge.

By directly confronting these challenges, family businesses can bolster their capacity for innovation, adaptation, and prosperity within dynamic market environments, thereby attenuating resistance to change that may manifest within the organization, particularly amidst the backdrop of familial dynamics and traditions. These findings furnish practical guidance for business decision-makers and constitute a notable contribution to the scholarly discourse, furnishing a more comprehensive perspective that encompasses both the cognitive processes of business decision-makers and the interplay between the firm and its suprasystems.

Originality of the paper. The originality of this paper lies in its comprehensive exploration of the dynamics influencing family businesses' engagement with external knowledge. While previous studies have touched upon aspects of absorptive capacity and knowledge management in family firms, this research offers a deeper examination of the motivations, challenges, and benefits associated with seeking knowledge outside organizational boundaries. By integrating theoretical perspectives with empirical evidence from a single case study, this study provides a nuanced understanding of how family entrepreneurs navigate the knowledge landscape and the implications for firm performance and long-term success. Furthermore, the identification of specific indicators highlighting the benefits of external knowledge interactions adds novel insights to the literature, contributing to a more holistic understanding of the role of external knowledge in family business strategies. Overall, the paper's originality lies in its comprehensive approach to exploring the complexities of family businesses' engagement with external knowledge and its implications for organizational success.

References

- ALI M., PARK K. (2016), "The mediating role of an innovative culture in the relationship between absorptive capacity and technical and non-technical innovation", *Journal of business research*, vol. 69, n. 5, pp. 1669-1675.
- ALOULOU W.J. (2024), "Entrepreneurial Orientation and Innovation Performance of Saudi Firms: A Sequential Mediation Model of Absorptive Capacity and Innovation Capability", *FIIB Business Review*, 23197145231220426.
- ANDERSÉN J. (2015), "The absorptive capacity of family firms: How familiness affects potential and realized absorptive capacity", *Journal of Family Business Management*, vol. 5, n. 1, pp. 73-89.
- ARREGLE J., HITT M.A., SIRMON D.G., VERY P. (2007), "The development of organizational social capital: Attributes of family firms", *Journal of Management Studies*, vol. 44, n. 1, pp. 73-95.
- BARILE S. (2008), *L'impresa come sistema. Contributi sull'Approccio Sistemico Vitale (ASV)*, Giappichelli.
- BARILE S., CALABRESE M. (2011), "A new frontier in consulting: The (vsa) consulcube", In *Contributions to theoretical and practical advances in management. A Viable Systems Approach (VSA)* (pp. 245-262), International Printing Srl.
- BOYD B., HOLLENSSEN S. (2012), "Strategic management of a family-owned airline: Analysing the absorptive capacity of Cimbber Sterling Group A/S", *Journal of Family Business Strategy*, vol. 3, n. 2, pp. 70-78.
- BRINKERINK J. (2018), "Broad search, deep search, and the absorptive capacity performance of family and nonfamily firm R&D", *Family Business Review*, vol. 31, n. 3, pp. 295-317.
- CABRERA-SUÁREZ K., DE SAA-PÉREZ P., GARCÍA-ALMEIDA D. (2001), "The Succession Process from a Resource- and Knowledge-Based View of the Family Firm", *Family Business Review*, vol. 14, n. 1, pp. 37-46.
- CALABRESE M. (2014), "Il management nell'era della conoscenza (pp. 0-248)", "Rirea.
- CALABRESE M., BOSCO G., GRATTACASO R. (2024), *Armonia operativa. Processi, controllo e risk management nell'era dell'esperienza imprenditoriale*. G. Giappichelli Editore.
- CARNEY M. (2005), "Corporate governance and competitive advantage in family-controlled firms", *Entrepreneurship theory and practice*, vol. 29, n. 3, pp. 249-265.
- CEPEDA-CARRION I., ORTEGA-GUTIERREZ J., GARRIDO-MORENO A., CEGARRA-NAVARRO J. G. (2023), "The mediating role of knowledge creation processes in the relationship between social media and open innovation", *Journal of the Knowledge Economy*, vol. 14, n. 2, pp. 1275-1297.
- CESINGER B., HUGHES M., MENSCHING H., BOUNCKEN R., FREDRICH V., KRAUS S. (2016), "A socioemotional wealth perspective on how collaboration intensity, trust, and international market knowledge affect family firms' multinationality", *Journal of World Business*, vol. 51, n. 4, pp. 586-599.
- CHAUDHARY S., BATRA S. (2018), "Absorptive capacity and small family firm performance: exploring the mediation processes", *Journal of knowledge management*, vol. 22, n. 6, pp. 1201-1216.
- CHAUDHARY S., SANGROYA D., NEMA P. (2021), "Exploring Relationships Between Family Firms' Market Orientation and Innovation: Proposition of a Conceptual Framework", *FIIB Business Review*, vol. 10, n. 4, pp. 393-403.
- CHIRICO F., SALVATO C. (2008), "Knowledge integration and dynamic organizational adaptation in family firms", *Family Business Review*, vol. 21, n. 2, pp. 169-181.
- COHEN W.M., LEVINTHAL D.A. (1990), "Absorptive capacity: A new perspective on learning and innovation", *Administrative science quarterly*, pp. 128-152.
- CUNNINGHAM J., SEAMAN C., MCGUIRE D. (2016), "Knowledge sharing in small family firms: A leadership perspective", *Journal of Family Business Strategy*, vol. 7, n. 1, pp. 34-46.
- CUNNINGHAM J., SEAMAN C., MCGUIRE D. (2017), "Perceptions of knowledge sharing among small family firm leaders: A structural equation model", *Family Business Review*, vol. 30, n. 2, pp. 160-181.
- DASPIT J.J., LONG R.G., PEARSON A.W. (2019), "How familiness affects innovation outcomes via absorptive capacity: A dynamic capability perspective of the family firm", *Journal of Family Business Strategy*, vol. 10, n. 2, pp. 133-143.
- DONCKELS R., FRÖHLICH E. (1991), "Are family businesses really different? European experiences from STRATOS", *Family business review*, vol. 4, n. 2, pp. 149-160.
- DUCHEK S. (2013), "Capturing absorptive capacity: A critical review and future prospects", *Schmalenbach Business Review*, vol. 65, pp. 312-329.
- EISENHARDT K.M., MARTIN J.A. (2000), "Dynamic capabilities: what are they?", *Strategic management journal*, vol. 21, n. 10-11, pp. 1105-1121.
- ENIOLA A.A. (2023), "Extending the absorptive capacity of the small family entrepreneurs and managers as gatekeepers", *Small Enterprise Research*, vol. 30, n. 2, pp. 171-189.
- FILIPPINI R., GÜTTEL W.H., NEIROTTI P., NOSELLA A. (2012), "The different modes for absorbing knowledge: an analytic lens on absorptive capacity from a process perspective", *International Journal of Knowledge Management Studies*, vol. 5, n. 1-2, pp. 45-65.

- GOLINELLI G. (2002), *L'approccio sistemico al governo dell'impresa. Valorizzazione delle capacità incorporate, rapporti intersistemici e rischio nel governo delle imprese*. Cedam.
- GÓMEZ-MEJÍA L.R., HAYNES K.T., NÚÑEZ-NICKEL M., JACOBSON K.J., MOYANO-FUENTES J. (2007), "Socioemotional wealth and business risks in family-controlled firms: Evidence from Spanish olive oil mills", *Administrative science quarterly*, vol. 52, n. 1, pp. 106-137.
- GRANT R.M. (1996), "Toward a knowledge-based theory of the firm", *Strategic management journal*, vol. 17, n. S2, pp. 109-122.
- HABBERSHON T.G., WILLIAMS M.L. (1999), "A resource-based framework for assessing the strategic advantages of family firms", *Family business review*, vol. 12, n. 1, pp. 1-25.
- HABBERSHON T.G., WILLIAMS M., MACMILLAN I.C. (2003), "A unified systems perspective of family firm performance", *Journal of business venturing*, vol. 18, n. 4, pp. 451-465.
- HERNANDEZ-PERLINES F. (2018), "Moderating effect of absorptive capacity on the entrepreneurial orientation of international performance of family businesses", *Journal of Family Business Management*, vol. 8, n. 1, pp. 58-74.
- HOWORTH C., WESTHEAD P., WRIGHT M. (2004), "Buyouts, information asymmetry and the family management dyad", *Journal of Business Venturing*, vol. 19, n. 4, pp. 509-534.
- JANSEN J.J., VAN DEN BOSCH F.A., VOLBERDA H.W. (2005), "Managing potential and realized absorptive capacity: how do organizational antecedents matter?", *Academy of management journal*, vol. 48, n. 6, pp. 999-1015.
- KATZ D., KAHN R.L. (1978), "Organizations and the system concept", *Classics of organization theory*, vol. 80, n. 480, pp. 27.
- KOGUT B., ZANDER U. (1992), "Knowledge of the firm, combinative capabilities, and the replication of technology", *Organization science*, vol. 3, n. 3, pp. 383-397.
- KÖNIG A., KAMMERLANDER N., ENDERS A. (2013), "The family innovator's dilemma: How family influence affects the adoption of discontinuous technologies by incumbent firms", *Academy of management review*, vol. 38, n. 3, pp. 418-441.
- KOTLAR J., DE MASSIS A., FRATTINI F., KAMMERLANDER N. (2020), "Motivation gaps and implementation traps: The paradoxical and time-varying effects of family ownership on firm absorptive capacity", *Journal of Product Innovation Management*, vol. 37, n. 1, pp. 2-25.
- LEPAK D.P., SMITH K.G., TAYLOR M. S. (2007), "Value creation and value capture: A multilevel perspective", *Academy of management review*, vol. 32, n. 1, pp. 180-194.
- MARCH J.G. (1991), "Exploration and exploitation in organizational learning", *Organization science*, vol. 2, n. 1, pp. 71-87.
- NAHAPIET J., GHOSHAL S. (1998), "Social capital, intellectual capital, and the organizational advantage", *Academy of management review*, vol. 23, n. 2, pp. 242-266.
- PEARSON A.W., CARR J.C., SHAW J.C. (2008), "Toward a theory of familiness: A social capital perspective", *Entrepreneurship theory and practice*, vol. 32, n. 6, pp. 949-969.
- PICIOCCHI P., BASSANO C., SAVIANO M. (2009), "Network creativity to reduce strategic ambiguity in turbulent environments: a viable systems approach (VSA)", In *Proceedings of the 11th International Conference of the Society for Global Business & Economic Development* (Vol. 3, pp. 1477-1487), "Comenius University in Bratislava.
- PUHAKKA V. (2002), *Entrepreneurial business opportunity recognition: Relationships between intellectual and social capital, environmental dynamism, opportunity recognition behavior, and performance*. Doctoral dissertation, University of Oulu, Finland.
- PÜTZ L., WERNER A. (2023), "Absorptive capacity in family firms: a systematic literature review", *Review of Managerial Science*, pp. 1-56.
- RIVERA A.E., RODRÍGUEZ-ACEVES L., MOJARRO-DURAN B.I. (2020), "Enabling knowledge sharing through psychological safety in inter-organisational arrangements", *Journal of Knowledge Management*. Ahead-of-Print.
- RODRIGUEZ-ACEVES L., MOJARRO-DURÁN B.I., RIVERA A.E. (2023), "Enabling knowledge sharing through relational capital in a family business context", *Journal of the Knowledge Economy*, vol. 14, n. 3, pp. 2156-2186.
- SANCHEZ-FAMOSO V., ITURRALDE T., MASEDA A. (2015), "The influence of family and non-Family social capital on firm innovation: Exploring the role of family ownership", *European Journal of International Management*, vol. 9, n. 2, pp. 240-262.
- SANTOS I.L.D., VIEIRA MARINHO S., SANTOS R.C.D. (2021), "The systematization knowledge of articles adherent to familiness, entrepreneurial orientation and absorptive capacity", *Journal of Family Business Management*, vol. 11, n. 4, pp. 512-537.
- SAVIANO M., CAPUTO F. (2013), *Managerial choices between systems, knowledge and viability. Contributions to theoretical and practical advances in management. A viable systems approach (VSA)*, vol. 2, pp. 219-242.
- SHARMA P. (2008), "Commentary: Familiness: Capital stocks and flows between family and business", *Entrepreneurship Theory and Practice*, vol. 32, n. 6, pp. 971-977.
- SHARMA P., DE MASSIS A., GAGNE M. (2014), "Family business: A fertile ground for research on time, teams and positive organizational study", *European Journal of Work and Organizational Psychology*, vol. 23, n. 5, pp. 674-679.
- SIRMON D., HITT M.A. (2003), "Creating wealth in family business through managing resources", *Entrepreneurship Theory and Practice*, vol. 27, pp. 339-358.
- SU E., DASBIT J. (2022), "Knowledge management in family firms: a systematic review, integrated insights and future research opportunities", *Journal of Knowledge Management*, vol. 26, n. 2, pp. 291-325.
- TEECE D.J. (2007), "Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance", *Strategic management journal*, vol. 28, n. 13, pp. 1319-1350.
- TEECE D.J., PISANO G., SHUEN A. (1997), "Dynamic capabilities and strategic management", *Strategic management journal*, vol. 18(7), pp. 509-533.
- TSAI W. (2002), "Social structure of "coopetition" within a multiunit organization: Coordination, competition, and intraorganizational knowledge sharing", *Organization science*, vol. 13, n. 2, pp. 179-190.
- WANG Y. (2016), "Environmental dynamism, trust and dynamic capabilities of family businesses", *International Journal of Entrepreneurial Behavior & Research*, vol. 22, n. 5, pp. 643-670.
- ZAHRA S.A., GEORGE G. (2002), "Absorptive capacity: A review, reconceptualization, and extension", *Academy of management review*, vol. 27, n. 2, pp. 185-203.
- ZAHRA S.A., SAPIENZA H.J., DAVIDSSON P. (2006), "Entrepreneurship and dynamic capabilities: A review, model and research agenda", *Journal of Management studies*, vol. 43, n. 4, pp. 917-955.

Tradition in Transition: Exploring Organizational Dynamics and Strategies in Small Hotels

MARCO CORSINO¹ DAVIDE BAGNARESI² FRANCESCO MARIA BARBINI³

Abstract

In the evolving hospitality industry, small hotels confront challenges amidst digitalization, sustainability, and shifting tourist behaviors. This paper examines organizational dynamics in Bellaria - Igea Marina, an Italian seaside destination. Employing historical insights and organizational analysis, it explores strategies used by small hotels. A survey of 140 managers, complemented by interviews, reveals a blend of tradition and innovation. Family ownership, local entrepreneurship, and strategic adaptation are prominent. Despite hurdles like generational transitions, small hotels exhibit resilience, offering insights for sustained competitiveness. This study contributes to hospitality management literature, illuminating the interplay between tradition and innovation and proposing strategies for addressing organizational challenges.

Key words: Hospitality industry, small hotels, organizational dynamics, local entrepreneurship, strategic adaptation.

Framing of the research. The competitive environment of the hospitality industry is impacted by profound social, economic, and technological transformations, suffice it to mention in particular:

- *Digitization:* the increasing use of digital technology affects how hotels handle reservations, manage performance, promote their services, and interact with customers.
- *Sustainability:* there is a growing focus on sustainability (declined in its environmental, social, and economic dimensions), with many hotels adopting eco-friendly practices to meet customer expectations.
- *Changes in tourist behavior:* tourists are increasingly seeking customized and unique experiences; they want to be involved in designing the services they will use.
- *Changes in business models:* the development of the sharing economy is changing the competitive dynamics of the hospitality industry with the emergence of competition from services such as Airbnb.
- *Socio-demographic changes:* tourists' preferences are changing with social and demographic changes, for example, with the increase in the number of trips and the simultaneous reduction in their duration.

In this situation, there is an increasingly pressing need for hotels to innovate. This innovation is not limited to services rendered but extends to organizational configurations, labor division choices, and people selection and management processes (Baum, 2006; 2015; Chiang, 2010; Gomezelj, 2016; Martín-Rios, Ciobanu, 2019; Shin, Perdue, 2022).

If large hotels and international chains ride and direct innovation processes, the reaction of smaller hotels is more complex to decrypt: the poor managerial skills of executives, the anchoring to traditions, and the constraints imposed by the limited resources available seem to preclude their ability to adapt and ultimately survive (Morrison, 2002; Morrison, Conway, 2007).

On the other hand, although the fate of small hotels seems sealed, they still are the backbone of most hospitality systems, particularly in Europe (Lee-Ross, Lashley, 2010); also, most of them are family-owned and usually are run directly by the owner or his/her family (Getz et al. 2004), thus contributing to the economic development of local communities.

It also seems evident how, beyond hypothetical best practices related to the implementation of innovations, different organizational solutions and management methods still coexist and succeed simultaneously. Tradition and innovation in hotel management do not seem to be opposite poles of a continuum of organizational solutions but intersect and allow a wide range of choices and trajectories of change (Bagnaresi et al., 2021).

Purpose of the paper. This paper investigates the dynamics of organizational change in small hotels, focusing on the City of Bellaria - Igea Marina. In a context in which the hospitality industry is exposed to multiple pressures, including

¹ University of Milano Bicocca
e-mail: marco.corsino@unimib.it

² University of Bologna
e-mail: davide.bagnaresi2@unibo.it

³ University of Bologna
e-mail: francesco.barbini@unibo.it

digitization, sustainability, changing tourist behaviors, and new business models, the paper aims to understand how small-sized hotels address these challenges.

Through an interdisciplinary approach combining historical and organizational methods (Bagnaresi et al., 2018; Decker et al., 2015; Kieser, 1994; Kipping, Üsdiken, 2014; Maggi, 2003), the full paper will provide an overview of current organizational choices and will outline evolutionary trajectories for small hotels in Bellaria - Igea Marina, thus contributing to the literature on hospitality management and to local planning policies.

Methodology. Situated along the Adriatic coast, the Municipality of Bellaria - Igea Marina is located in the southeastern part of the Emilia-Romagna Region. Today, the city has a population of 19,408 and is among the best-known national seaside tourism destinations. The tourism sector is the driving force of the local economy. This is made possible thanks to the unmatched presence of hotels in the area. Along its city coastline, which stretches for about 7 kilometers, there are currently 299 hotels (Istat, 2023) with almost 20,000 beds. This is also confirmed by the Annual report on tourism and hotel accommodations periodically compiled by the Region. In it, 2,053,300 overnight stays are recorded for the year 2023: a value that is up from the last two years (1,780,397 in 2021) and that is close to that surveyed before the COVID-19 (2,216,032 in 2019). The 2023 data confirm how Bellaria - Igea Marina emerges as the third destination in the province after Rimini (6,540,397) and Riccione (3,279,881) and how the same position is demonstrated in terms of the number of arrivals: 384,674 compared to Rimini's 1,751,391 and Riccione's 833,637. When compared with the population density and the area of the territory (18.17 km) of the Municipality of Bellaria-Igea Marina, the numbers reported appear even more impressive.

Such a positioning is the result of a centuries-old history and legacy. The city's tourism growth and the evolution of its hospitality industry developed in parallel with the other seaside resorts of the Riviera Romagnola (Battilani, Fauri, 2009). Before the development of this industry, the local economic vocation was, for centuries, agriculture and fishing. With the arrival of the first vacationers in the nearby city of Rimini, Bellaria - Igea Marina also began to gear up for hospitality. Fostering the birth of a primordial tourism industry is the 1885 inauguration of the railway station (which made the city accessible) and the subsequent development of the first urban master plan. The first private villas sprang up along the shoreline, and in 1913, the first hotel was opened. Ten years later, a travel guide listed four more guesthouses (Becca, 1923). They all promoted themselves for their "affordable prices" and for being ideal "for families".

This approach (based on family management, the provision of essential services, and low prices) would characterize the basis of the success of the entire Romagna coastline when the late 1950s and early 1960s saw the explosion of mass tourism in Italy. In the case of Bellaria - Igea Marina, it is sufficient to highlight the number of hotels surveyed by the Internal Statistical Yearbook of Commerce and Tourism for 1963 (347) and how it gradually increased until it reached 450 in 1974. Censuses conducted at the time testify how these hotels were solely seasonal and, in the vast majority, small (more than two-thirds were listed as Category III - boarding houses). Not unlike neighboring tourism destinations, an important phenomenon that comes into being is that of tourist loyalty. A survey conducted by the Region in 1978 indicates that 67.4 percent of the tourists interviewed had already stayed in Bellaria - Igea Marina in the past and that the two most appreciated features were the low prices (25.7 percent) and the friendliness of the residents (23.9 percent).

A change in the structure of the hospitality industry emerged between the 1980s and 1990s. It was due to several factors, such as competition with new domestic and international destinations and generational change.

The change has involved the renovation of buildings, focusing on specific target customers (mainly families with children), and developing specific high-value-added services for the identified target. These interventions have allowed Bellaria-Igea Marina to consolidate its competitive position and demonstrate high resilience to the formidable challenges posed by COVID-19.

In 2020, the Municipality of Bellaria - Igea Marina established the BIM2040 Strategic Plan, i.e., a participatory and open local planning initiative to define the city's identity for 2040.

BIM2040 works on several fundamental and interconnected dimensions: education, culture, sustainability, urban planning, social progress and inclusion, and economic development. Local institutions, research and educational institutions (in particular, the Center for Advanced Studies in Tourism of the University of Bologna), local economic categories, and residents contribute to the Strategic Plan.

In the context of the meetings and events held in 2021 on the topic of the local economy and its prospects, the understanding of the characteristics and dynamics of the hospitality industry, the main driver of the city's economic fabric, gained particular importance.

It was therefore decided to deepen the investigation on this topic and, during 2022, several meetings were held to understand what, according to tourism entrepreneurs and residents, were the main strengths, critical issues and opportunities of the local hospitality industry.

At the end of 2022, a focus group was established to prepare a questionnaire investigating the organizational and managerial characteristics of hotels in Bellaria - Igea Marina. It has been composed of experts from the BIM204 management team, the Municipality of Bellaria - Igea Marina, researchers from the Center for Advanced Studies in Tourism of the University of Bologna, and representatives of the leading local hotel manager associations (Federalberghi and Confcommercio).

The focus group prepared, tested, and validated a survey based on an online questionnaire to be submitted to all hotel managers in Bellaria - Igea Marina.

The questionnaire consisted of thirty-two closed-ended questions organized into four sections:

1. The hotel (name, foundation year, category, size, seasonality, ownership structure, legal form);
2. The hotel manager (age, place of birth, education, professional experience, family);

3. The organizational and managerial choices (competitive strategy, target customers, decision-making processes, division of labor, authority and hierarchy, human resource management);
4. The future (generational transition, hotel prospects in the medium and long term).

The link to the questionnaire was sent, along with a cover letter, by BIM2040 to the managers of the 299 hotels on February 28, 2023. The survey was closed in early April 2023.

A total of 140 valid questionnaires were filled out. The response rate was very high (47 percent of the population) and reflects the demographics of local hotels. The survey results were presented and discussed in the focus group and presented in several meetings to the heads of local hotelier trade associations. These meetings enabled a richer interpretation of the emerging evidence and the identification of some critical elements.

In December 2023, a public event was organized to expose relevant findings and issues to local hotel managers and policymakers. The event was attended by about 100 people, including the mayor and city council, business owners, residents, and about 70 hotel managers. At the end of the presentation, a participatory analysis of the results and an open discussion aimed at gathering feedback and alternative interpretations was initiated. The discussion highlighted the most critical issues, with particular reference to the sustainability of the industrial structure over time, generational transition in hotel management, and the possible tension between tradition and innovation.

Based on these insights, ten hotel managers were selected from the 140 respondents and invited for in-depth interviews (the interviewees have been selected to reflect different hotel categories and sizes and different generations of managers).

The semi-structured interviews are focused on the history of the hotel and the family, with particular emphasis on the issues of generational shift and organizational change. The ten interviews, which are currently being conducted, will be transcribed and analyzed through a thematic analysis (Guest et al., 2012).

Results. Below, we present the main findings emerging from the survey. In the full paper, these results will be integrated and supplemented by the results of the interviews. The data emerging from the survey show peculiar characteristics.

The average hotel size is 17 rooms for one-star hotels, 21.6 rooms for two-star hotels, 41.1 rooms for three-star hotels, and 48 rooms for four-star hotels. 99% of the hotels are open only in summer.

Regarding ownership structure, 94% of the hotels are owned by the manager (who therefore qualifies as owner-manager). In addition, 24% of respondents own more than one hotel.

The first hotels were founded in the period between the two world wars (12 hotels established between the 1920s and 1940s). After World War II, most hotels were founded (42 in the period 1950-1959, 58 in the period 1960-1969). In the following ten years (1970-1979), 22 hotels were founded. Only one hotel was founded between 1990 and 2023.

Interestingly, 10 of the 12 hotels founded before World War II are still run by the same founding families (with several generational transitions occurring over time). More dynamism concerned the management of hotels founded in the 20 years after World War II: only 58 out of 110 are still run by the founding families. The change in the management structure of these hotels was one element of dynamism that marks the 1980-2023 period.

As for hotel managers, most of them (96 out of 140) were born in the period 1960-1969 (48) or in the period 1970-1979 (48). 24 hoteliers were born before 1960, and only 20 after 1980.

33 hotel managers have been running the hotel for over 30 years, 49 for less than 15 years.

21% of hoteliers have a laurea degree, 71% have a high school degree.

Interestingly, 85% of hotel managers were born around Bellaria - Igea Marina. This percentage reaches 90% when considering those born in the Emilia-Romagna region. It is, therefore, an extremely local entrepreneurship, immersed in the city's identity, embedded in deep and long-lasting social networks. Moreover, in 94 percent of the hotels, at least one member of the manager's family is involved in hotel management.

Regarding strategic choices, 49% of hoteliers believe that customers choose their hotel because they are fond of them or their family, 36% believe that customers are mainly attracted by the high quality of services offered at the hotel. Finally, 15% believe that customers are primarily attracted by the low prices charged at the hotel.

These responses tend to be consistent with the competitive strategies stated by managers: 74% of them say they pursue a strategy of innovation and differentiation, while 16% pursue cost leadership.

Concerning decision-making processes, 37% of managers say they make decisions analytically, including using advanced management systems; 34% say they rely on their experience, and 29% make decisions by following market trends. Ultimately, most managers make decisions based on only minimally objective perceptions, assumptions, and trends.

As for people management styles, 74% direct people by imposing standardized rules and procedures, 14% by continuously issuing directives and orders, and only 13% say they stimulate employees to make decisions and exercise discretion. In 47% of the hotels, employees work exclusively within one Service; in 4% of the hotels, employees rotate continuously between departments; finally, in 49% of the hotels, employees are framed in one Service and occasionally are seconded to other departments.

Recruitment of new employees is mainly done directly and individually; references and suggestions from current employees are also important. Marginal is the use of agencies, trade associations, and training institutions. As for the skills sought in employees, 51 percent of managers say they are mainly looking for experience and skills, 23 percent are looking for hard-working people, and 16 percent are looking for employees with character predispositions.

Finally, about the future of family management, 79% of hotel managers say they would like to pass management to their descendants, while 21% would not want to do so at all. 59% of respondents realistically (beyond their wishes) believe that after themselves, management will pass to their descendants, 21% plan to sell the hotel, 11% plan to rent it out, 6% plan to separate ownership and management, and 2% plan to close the hotel.

Research limitations. The results of this investigation are based on a single tourism destination, they are indeed in need of additional comparisons. Finally, longitudinal analysis relying on a sample surveyed in different moments of time would be very important to improve our understanding of dynamic processes.

Managerial implications. Results from the survey and interviews will be used to identify the management and organizational type each hotel tends to. Indeed, beyond any difference in size and category, hotels tending toward the same ideal type show similar approaches to the business and adopt similar organizational solutions (Bagnaresi et al., 2018). The information from the interviews will also allow the trajectories of change among the various types of hotels to be represented. In this way, in the full paper we will be able to propose answers to the most critical issues and organizational challenges that characterize small hotels in Bellaria - Igea Marina, specifically:

- The current structure of the hotel industry has ensured the success of the city for sixty years. Can it continue to sustain its competitiveness for the next twenty years?
- The continuity in the management of more than a quarter of hotels appears to be at risk. Does the entry of “alien” management represent an opportunity or a threat?
- Can tradition and innovation coexist in hotel management?
- How to foster generational transition in hotel management?

Originality of the paper. This paper contributes to the literature on hospitality management by offering a nuanced exploration of the organizational dynamics within small hotels, particularly in the context of Bellaria - Igea Marina. Unlike previous studies that often dichotomize tradition and innovation as opposing forces, this research unveils their symbiotic relationship within small hotel operations. By delving into the historical evolution of hospitality in the region and examining contemporary managerial practices, this study uncovers how small hotels effectively blend tradition with innovative strategies to navigate the multifaceted challenges of the modern hospitality landscape. This integrative approach sheds light on the unique organizational configurations, management styles, and strategic orientations prevalent among small hotels, providing fresh insights into their adaptive capacity and resilience in the face of dynamic market forces.

Furthermore, this paper offers a methodological contribution through its interdisciplinary approach, combining historical analysis with organizational methods to provide a comprehensive understanding of small hotel dynamics. By triangulating survey data with in-depth interviews, the study captures a rich tapestry of managerial practices, strategic choices, and organizational structures within the hospitality sector of Bellaria - Igea Marina. This holistic methodological framework not only enriches our understanding of small hotel management but also serves as a model for future research endeavors seeking to unravel the complex interplay between tradition, innovation, and organizational change in other tourism destinations. Through its original approach and empirical insights, this paper advances scholarly discourse on hospitality management and offers practical implications for policymakers, industry stakeholders, and local communities striving to foster sustainable development in tourism economies.

References

- BAGNARESI D., BARBINI F.M., BATTILANI P. (2018), “At the Intersection of Business History and Organization Theory: An Interdisciplinary and Process-Based Method for Studying Organizational Change”, In *Proceedings of European Conference on Research Methodology for Business and Management Studies* (pp. 36-43), Academic Conferences International Limited.
- BAGNARESI D., BARBINI F.M., BATTILANI P. (2021), “Organizational change in the hospitality industry: The change drivers in a longitudinal analysis”, *Business History*, vol. 63, n. 7, pp. 1175-1196.
- BATTILANI P., FAURI F. (2009), “The rise of a service-based economy and its transformation: seaside tourism and the case of Rimini”, *Journal of Tourism History*, vol. 1, n. 1.
- BAUM T. (2006), “Reflections on the nature of skills in the experience economy: Challenging traditional skills models in hospitality”, *Journal of Hospitality and Tourism Management*, vol. 13, n. 2, pp. 124-135.
- BAUM T. (2015), “Human resources in tourism: Still waiting for change? - A 2015 reprise”, *Tourism Management*, vol. 50, pp. 204-212.
- BECCA M. (1923), *Guida di Rimini e dintorni*, Orfanotrofio Nazionale Militare, Torino.
- CHIANG C.F. (2010), “Perceived organizational change in the hotel industry: An implication of change schema”, *International Journal of Hospitality Management*, vol. 29, n. 1, pp. 157-167.
- DECKER S., KIPPING M., WADHWANI D. (2015), “New business histories! Plurality in business history research methods”, *Business History*, vol. 57, n. 1, pp. 30-40.
- GETZ D., CARLSEN J., MORRISON A. (2004), *The family business in tourism and hospitality*. CABI.
- GOMEZELJ D.O. (2016), “A systematic review of research on innovation in hospitality and tourism”, *International Journal of Contemporary Hospitality Management*, vol. 28, n. 3, pp. 516-558.
- GUEST G., MACQUEEN K.M., NAMEY E.E. (2012), *Applied thematic analysis*. Sage, London.
- KIESER A. (1994), “Why organization theory needs historical analyses - and how this should be performed”, *Organization Science*, vol. 5, n. 4, pp. 608-620.
- KIPPING M., ÜSDIKEN B. (2014), “History in organization and management theory: more than meets the eye.” *Academy of Management Annals*, vol. 8, n. 1, pp. 535-588.

- LEE-ROSS D., LASHLEY C. (2010), *Entrepreneurship and small business management in the hospitality industry*. Routledge.
- MAGGI B. (2003), *De l'agir organisationnel. Un point de vue sur le travail, le bien-être, l'apprentissage*. Toulouse: Octarès Éditions.
- MARTÍN-RIOS C., CIOBANU, T. (2019), "Hospitality innovation strategies: An analysis of success factors and challenges", *Tourism Management*, vol. 70, pp. 218-229.
- MORRISON A. (2002), "Small hospitality businesses: enduring or endangered?", *Journal of Hospitality and Tourism Management*, vol. 9, n. 1, pp. 1-12.
- MORRISON A., CONWAY F. (2007), "The status of the small hotel firm", *The Service Industries Journal*, vol. 27, n. 1, pp. 47-58.
- SHIN H., PERDUE R.R. (2022), "Hospitality and tourism service innovation: A bibliometric review and future research agenda", *International Journal of Hospitality Management*, vol. 102, 103176.
- WEBER, M. (1922), *Gesammelte aufsätze zur wissenschaftslehre*. Tübingen: Mohr.

Whispers of Ambition: Unpacking Emotions in Entrepreneurial Orientation of Women-Led Family Businesses

MICHELA FLORIS¹ ANGELA DETTORI² RICHA GOEL³ TILOTTAMA SINGH⁴

Abstract

This study aims to explore the nuances of EO within the context of women-led family firms through a multi-case analysis of 7 women-led family firms. Findings extend previous studies by emphasizing the influence of emotional aspects, particularly uncovering the heavy role of guilt and shame that act as two ambidextrous emotions, by delineating different women-led family firms' EOs.

Key words women-led family firms, women entrepreneurship, entrepreneurial orientation, multiple embeddedness.

Framing of the research. Entrepreneurial orientation (EO) encompasses the inclination to undertake entrepreneurial initiatives by leveraging innovativeness, proactiveness, and risk-taking (Miller, 1983). This inclination extends to family businesses, recognized as crucial contributors to global economic growth and wealth (Kellermanns et al., 2008; de Groote et al., 2023). Family businesses, owned and overseen by the founding family, embody family beliefs and values, aiming to pass on the business across generations (Aronoff & Ward, 2011). Given the challenging business environment, engaging in entrepreneurial initiatives becomes crucial for the long-term survival of family businesses, leading to a surge in scholarly attention towards EO (Hernández-Linares & López-Fernández, 2018). However, despite extensive research on EO in family firms, there is a dearth of research on EO in women-led family firms (Sherlock et al., 2023), probably due to the prevailing focus on heroic male founding owners, which reinforces stereotypical notions (Braun et al., 2017). While recent progress acknowledges women as active contributors to family firms (Cruz et al., 2019; Nekhili et al., 2018), challenging the historical perception of them as invisible or "Chief Emotional Officers" (Lyman, 1988), there is a surprising lack of studies specifically examining EO in women-led family firms (Madison et al., 2021; Bang et al., 2023; Fuentes-Fuentes et al., 2015; Gundry et al., 2014; Gupta & Levenburg, 2013; Kickul et al., 2010)), in contrast to the increasing studies on women entrepreneurship, urging further investigation to "capture more and richer aspects" (Ahl, 2006, p. 610).

This paper seeks to fill this critical gap in the literature by exploring the unique nuances of EO within the context of women-led family firms. These firms represent an illuminating setting for investigating EO dynamics, specifically focusing on emotions. Family businesses, in fact, renowned for their robust emotional ties and moral attachment (Jaskiewicz & Dyer, 2017; De Massis & Foss, 2018), are increasingly recognized in recent research as arenas where emotions significantly, if not entirely, impact strategic decision-making (De Massis, Chua, & Chrisman, 2008; Humprey et al., 2021; Picone et al., 2021). Thus, this study aims to unravel how emotions shape the EO of women-led family firms through the lens of the multilevel embeddedness perspective (Aldrich et al., 2023; Wigren-Kristoferson et al., 2022). This perspective provides a deeper understanding of how women are seen within a complex structure, including individual roles, family interactions, and business environments. These elements contribute to their burden of emotions and the consequent acquisition of values, standards, and role anticipations, which can influence their attitudes, abilities, and actions, particularly on a personal level (Khanin, 2013; Khanin et al., 2012). In other words, factors such as motherhood, family care, and challenging social norms can evoke positive and negative emotions that serve as building blocks of their individual EO, shaping a unique firm's EO. In this sense, emotions can be considered as parts of the entrepreneurial process, influencing opportunity recognition, decision-making, and venture performance (Foo, 2011).

Purpose of the paper. In light of the previous assumptions, this study aims to answer the following research questions: a. How do emotions shape (or affect) the entrepreneurial orientation of women leading family firms? b. How does this influence impact the overall entrepreneurial orientation of women-led family firms? To answer the research

¹ University of Cagliari
e-mail: micfloris@unica.it

² University of Cagliari
e-mail: angela.dettori@unica.it

³ University of Cagliari
e-mail: richasgoel@gmail.com

⁴ University of Cagliari
e-mail: tilottamasingh2101@gmail.com

question, the study is based on a multi-case analysis of 7 women-led family firms.

Methodology. Due to the under-investigated topic, this study employs a qualitative methodology with an inductive and interpretive approach, utilizing a multi-case study (Eisenhardt & Graebner, 2007; Karra et al., 2006; Yin, 2008). This approach facilitates an in-depth investigation of a contemporary phenomenon within its authentic real-life context (Koporcic et al., 2019; Pettigrew, 2014; Yin, 2008). Qualitative research design holds relevance in the field of organization and management studies because it allows for "understanding the dynamics present within single settings" (Eisenhardt, 1989, p. 533). Moreover, it is especially fitting for family business studies, aiding in penetrating the veil of family dynamics and avoiding collecting irrelevant data (De Massis & Kotlar, 2014; Litz, 1997).

The multi-case study design emerges as a well-suited methodology as it addresses situations with manifold variables embedded in the investigative context and relies on multiple sources of evidence, converging in a triangulation fashion (Yin, 2013). Moreover, the multi-case approach is a fitting theory-building method deeply rooted in empirical data. Gathering information through interviews and combining it with factual data enables the production of accurate, interesting, and testable theories (Eisenhardt & Graebner, 2007).

We selected women entrepreneurs based on articles in the press, seminars, and personal contacts. We also found interesting cases by means of the snowball effect, asking women interviewed to suggest to us other women leading a family business. We reached the saturation point (Suddaby, 2006), establishing seven cases (see Table 1) that sounded rich in information and adequate, also under the suggestions of Eisenhardt (1989). Information-rich cases provide substantial insights into issues central to the research's purpose.

Table I - Sample characteristics

FIRM CHARACTERISTICS				WOMEN CHARACTERISTICS					
#	Firm activity	Foundation	Generation	Age	Education level	Marital status	Child.	Year of entrance in ownership and/or managerial roles	Length of interviews (in minutes)
1	Agriculture and farming	1970	3	44	Bachelor Degree	Married	2	2021	42.31 - 40.00
2	Artisanship	1990	2	48	Master Degree	Divorced	1	2014	41.02 - 39.30
3	Tourism	1950	3	42	Master Degree	Married	2	2019	38.17 - 42,15
4	Industry	1970	3	50	Bachelor Degree	Divorced	3	2013	39.30 - 35,30
5	Tourism	1994	2	52	Bachelor Degree	Married	2	2000	38.59 - 42.00
6	Agriculture and farming	1934	6	48	Master Degree	Single	1	2012	43.45 - 40.00
7	Industry	1978	3	46	Master Degree	Married	3	2001	40.00 - 38.40

Data Gathering. This research employed a combination of primary and secondary data sources. For primary data collection, we conducted comprehensive semi-structured interviews both in-person and via Teams, adhering to a two-part interview protocol (Legard et al., 2003). Throughout 2023, we conducted 14 semi-structured interviews with seven women entrepreneurs managing their family firms, each lasting approximately 40 minutes. The initial part of the interviews focused on obtaining demographic information and understanding the firm's history. The subsequent part delved into exploring the influence of emotions on individual women entrepreneurs' Entrepreneurial Orientation (EO) and its reflection on the entrepreneurial orientation of family firms. Specifically, the interviews scrutinized emotions from three levels of analysis - individual, family, and firm. Conducted in Italian, the interviews were audio-recorded, translated into English, and transcribed verbatim by the authors, following the interviewees' prior authorization through signed informed consent forms. The interview questions were crafted to encourage open discussions about the interviewees' experiences and personal perspectives, avoiding the use of technical terms from academic literature.

Secondary data included personal documents, archives, newspaper articles, website content, and social media materials. This data elucidated interview content and enhanced our understanding of innovation proclivity, proactiveness, and risk-taking in instances where interviews were insufficient.

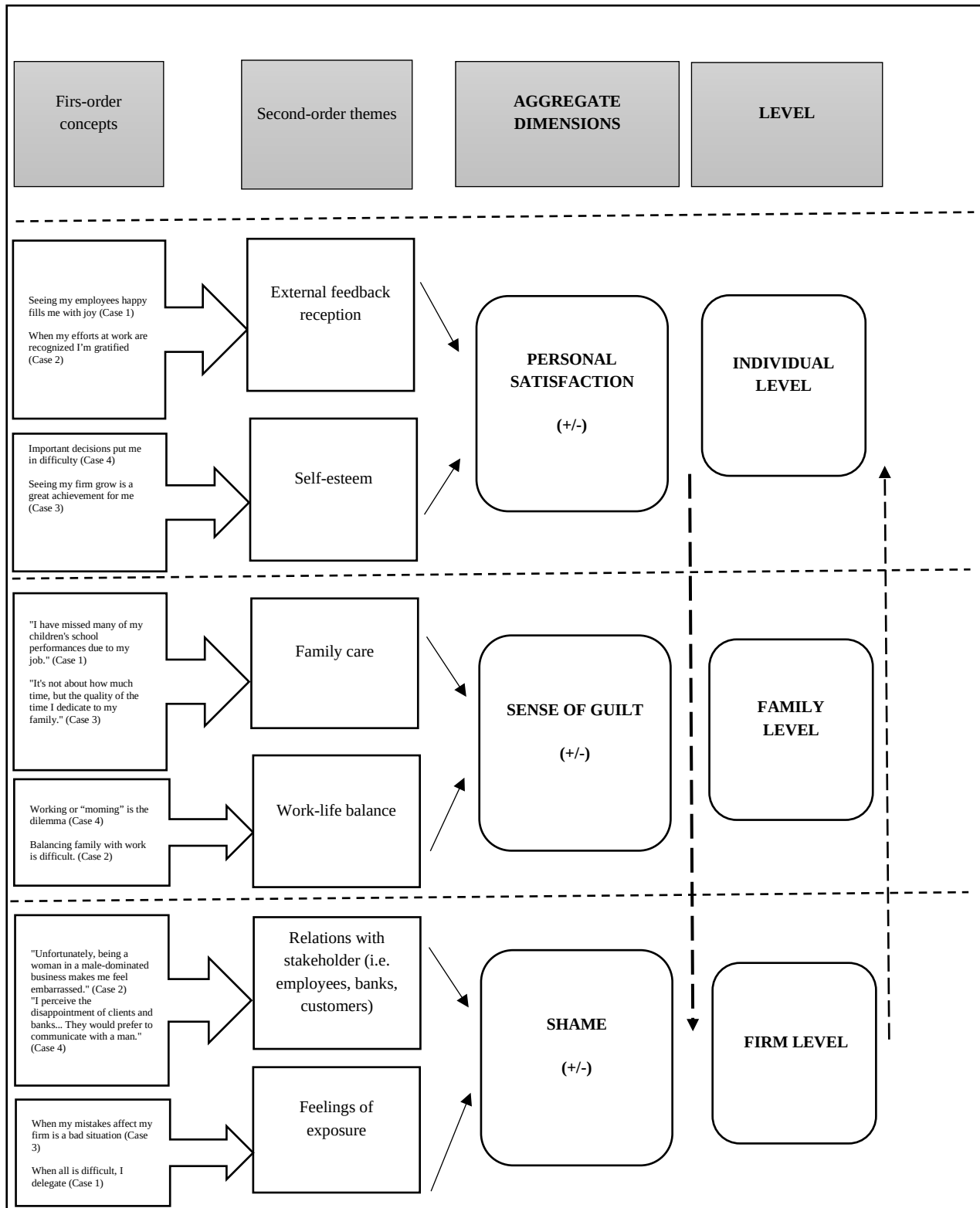
Data Analysis. Following the completion of interview transcriptions, three independent coders engaged in a thorough review, scanning for emergent themes crucial for addressing the research question (Reay & Zhang, 2014). To ensure the integrity of our analysis, we chose a content analysis approach without using software like NVivo to avoid potential biases in Cohen's kappa (Kim et al., 2016). Cohen's kappa, designed for character-level reliability assessment, proved unsuitable for our study, which operated at a higher unit of analysis (e.g., sentence and paragraph). Our content analysis method combined the nomothetic approach advocated by Eisenhardt (1989) with the Gioia methodology (Gioia et al., 2013). Utilizing the Gioia methodology, we visually represented the data processing journey, showcasing the transformation of raw data into themes. This progression moved from first-order concepts to second-order themes and aggregate dimensions (Figure 1). In the first-order coding phase, we scrutinized interview content to generate items, which were then squared to identify multiple themes aligned with theoretical orientations derived directly from the interview material. These themes laid the groundwork for developing subthemes and units of meaning. In the subsequent second-order coding step, as recommended by Gioia et al. (2013), we aggregated items from the initial phase at various

levels of abstraction (Thiéart, 2014).

Throughout the analysis, we iteratively alternated between qualitative evidence and existing theory (Denzin & Lincoln, 2000; Silverman, 2001). This iterative process allowed us to leverage existing insights to enrich our theory, unveiling novel perspectives. As the theoretical framework gained clarity, we systematically compared it with the literature, accentuating similarities, and differences from prior research. This iterative comparison enhanced internal validity, refining constructs and relationships.

The resulting theoretical logic represents a synthesis of arguments derived from case evidence, existing research, and standalone logical reasoning, aligning with the approach advocated by Eisenhardt and Graebner (2007).

Fig. 1 - The data structure

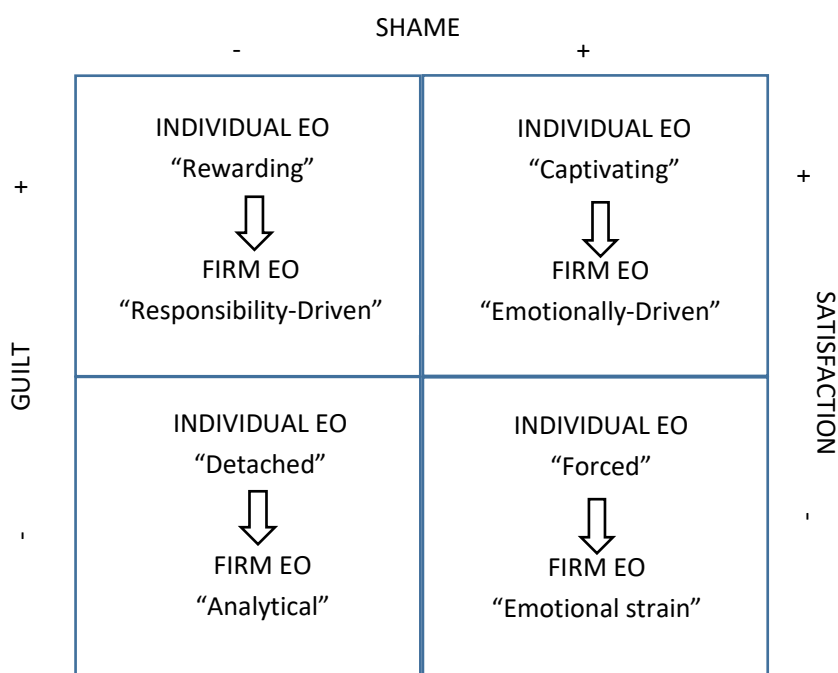


Results. The preliminary analysis of the interview results reveals that emotions originating from various levels (individual, family, and business) significantly impact women's individual EO with relevant effects on the firm's EO.

In particular, we noted that from the individual level, emerge: a. frustration ("Unfortunately, I'm often frustrated because I can't carve out time to take care of myself, and this leads me to almost feel repulsed by new initiatives to launch in my family business. I fear that adding more to my plate could create even more challenges for me. - Case 1); anxiety ("By nature, I fear failure (...). I received a very strict upbringing where one always had to strive for excellence and perfection. This limits my ability to invest in highly risky ventures. Anxiety overwhelms me immediately, and I don't sleep for days..." - Case 2). From the family level, the following emerges: a. anger ("Sometimes I feel anger towards my husband. He should support me, but instead, I perceive him as distant. This sense of loneliness doesn't aid in managing my business because it's like navigating a ship during a storm. I fear going further because I worry that at any moment, the ship might sink." - Case 4); b. sense of support ("My life is a challenge, but I'm not alone. I've my family. (...) In my entrepreneurial journey, my strong sense of security and support within my family inspires me to face challenges confidently and embrace innovation. Knowing I have a secure nest at home feeds my proactive approach in business." (Case 7). Finally, from the firm level emerges a. sense of loneliness ("Too often, I feel alone in facing family and work challenges. Not always do my colleagues support me. That's why I think a lot before making any changes in my business." - Case 3); b. determination ("I am determined, and my business has grit. I love change, chaos, and creativity. Everything is a continuous work-in-progress in my life." Case 7).

However, despite the variety of emotions that surfaced from different levels, surprisingly, three crucial emotions emerged at each of the three observed levels, significantly impacting individual EO. These emotions—guilt, shame, and satisfaction—appear to shape individual EO, subsequently determining four specific configurations of firms' EO. This influence is a result of the positive or negative effects of the emotions that have arisen in women's entrepreneurial behavior.

Figure 2 summarizes the findings:



Analytical EO

When satisfaction, guilt, and shame emerge as relevant emotions but are managed subtly considering them, the women's EO can be described as "**detached**." This implies a decision-making style that leans towards rationality and objectivity, with a limited impact of emotions. The resulting firm's EO could be characterized as "**analytical**," emphasizing data-driven strategies and focusing on efficiency and financial performance. In this context, women-led family firms exhibit an EO marked by a profound focus on risk-taking initiatives. Every innovative endeavor seems to result from a meticulous evaluation of costs and benefits. Rationality seems to prevail over emotions.

The following quote can better explain the concept:

"Frequently, I grapple with a sense of guilt over the limited time I allocate to my family and personal well-being. Entrepreneurship demands much from me, and there are moments when I feel inadequate, unable to meet every challenge. This internal struggle leads to personal dissatisfaction and a sense of defeat for not delivering my best in all areas. However, I'm fortunate to be learning the art of detachment and rationalization within the business, seeking support from others along the way. Managing every aspect of the business, including my emotions, is crucial. Maintaining a rational

perspective, even in the face of chaos, has become my key to success. (...) Constant innovation requires us to silence the heart and engage the brain, often with a calculator by our side (laughter)" - Case 2

Responsibility-Driven EO

When feelings of guilt and satisfaction become evident, and shame is perceived as a motivating force to achieve even greater results, women's EO can be labeled as "rewarding." This fosters a "responsibility-driven" EO oriented toward responsibility within the firm. The perception of a high level of personal satisfaction and the acknowledgment of guilt as a catalyst and driving force for continuous improvement, based especially on introducing constant innovation to be leader in the market, can mitigate the negative effects caused by the sense of shame that women entrepreneurs sometimes feel when encountering gender-related biases. This circumstance fosters in these entrepreneurs the determination to create a work environment free from prejudices, shaping a forward-thinking EO capable of integrating ethics and responsibility into business strategies.

The concept emerges from the following exemplary excerpt:

"Being women entrepreneurs means striving to create an organizational climate centered on responsibility. (...) as a woman, I strongly feel the sense of guilt for the family sacrifices, but it's also my great strength. I owe it to them. (...) I am very satisfied with what I do, because I face several challenges, and even though my motivation often wavers due to a feeling of inadequacy that many people impose on me simply because I am a woman entrepreneur, I bounce back and try to ensure that my company not only focuses on ruthless growth. (...) for this reason, my family firm is a leader! Because I'm very innovative and my firm too. We anticipate our competitors following a different strategy: combining entrepreneurial spirit with the awareness of the burden of responsibility towards everyone" (Case 7).

Emotional strain EO

When feelings of guilt and satisfaction arise, but their impact is perceived as negative, and shame is considered a significant and stimulating emotion affecting decision-making, women's EO may be labeled as "forced." This individual EO is inclined to create an "emotional strain" firm's EO. The term "forced" underscores a sense of external pressure on the individual EO, while "emotional strain" emphasizes the challenging emotional burden experienced at the individual, family, and firm levels. In this case, the firms' EO is characterized by reluctance toward risk-taking, considered a concern rather than the opportunity of growth.

The following quote is particularly meaningful and denotes the continuous tension that emotions create:

"There is still much to do for us female entrepreneurs. We have to prove that we can do everything. (...) Since I was a child, I felt that I was not up to my father's expectations. Today, this feeling of shame for never being enough gives me a huge push to improve and to always seek to be appreciated as an entrepreneur, as a woman, and as a mother. (...) I put a lot of effort into what I do, but then I feel a strong sense of guilt towards my family. It seems to me that I am neglecting my duties as a wife and mother. (...) It makes me feel bad, and I feel oppressed and dissatisfied. On the one hand, I want to soar high; on the other hand, I realize that I am like a kite, always guided by someone else. (...) this is the reason for refusing very risky initiatives. The fear of losing financial resources discourages me from accepting even more challenging adventures" (Case 2)

Captivating EO

When feelings of guilt, shame, and satisfaction serve as pillars of women's EO, the individual EO can be characterized as 'captivating.' Translating this individual orientation into the firm's EO seems to outline an 'emotionally-driven' firm's EO. In this context, 'captivating' refers to the compelling and engaging nature of the individual entrepreneur's emotional experiences, which, when applied to the firm, suggests that the firm's EO is strongly influenced by emotional factors and a focus on psychological well-being. This generates a firm's EO strongly focused on being innovative and proactive.

The following quote can clarify the concept:

"Of course, like all career women, I feel guilt towards my family, especially my children, of course. However, this pushes me to make the most of my time. (...) I am not one to procrastinate, and I translate this characteristics also in my firm. (...) Time is a very competitive variable, and my firm needs to anticipate competitors to be the leader in the market (...) This gives me a lot of satisfaction (...) and when I find myself having to prove that I am skilled and competent, while a man doesn't need to prove it, I feel a strong sense of embarrassment, almost shame because I fear making a mistake. But this unpleasant feeling gives me even more determination and drives me to move forward, to be even more innovative, always, with my head held high." (Case 5)

In summary, our findings shed light on the pivotal influence of emotions in shaping both the individual EO of women and the overall EO of firms. We delineate distinct traits in individual EO and dynamic patterns at the firm level, classifying them based on the emergence and intensity of specific emotions—guilt, shame, and satisfaction. This study bridges a significant gap in the existing literature by offering innovative insights into EO within family firms led by women. Making substantial contributions to family business studies and women entrepreneurship research, the study builds on previous research by emphasizing the importance of emotional factors and revealing the unexpected roles of guilt and shame as two ambidextrous emotions in entrepreneurial decision-making. Despite being initially perceived as inhibitors, our research accentuates their positive aspects, portraying them as catalysts contributing to a well-defined and nuanced firm's EO. In sum, women-led family businesses appear to be sensitive toward sustainability, transcending environmental concerns and encapsulating the well-being of individuals and the societal impact of business practices. Exploring the nuanced emotional dynamics within women-led family firms sheds light on how these dynamics influence sustainable business practices and individual well-being. By understanding the roles of emotions, this study provides insights into how emotional well-being can be integrated into business strategies, thereby contributing to the sustainability of the business and the health of family relationships. Such insights are crucial for aligning with the contemporary push toward holistic sustainability in business management. Specifically, exploring the nuanced emotional dynamics within women-led family firms spotlights a critical aspect of sustainable management practices that support individual well-being and broader societal benefits. The focus on emotions and their impact on entrepreneurial orientation underscores the importance of emotional sustainability in maintaining healthy business and family environments. This study contributes to our understanding of sustainable management in family businesses by addressing how these emotions influence strategic decision-making and leadership styles.

Furthermore, the study sheds light on women entrepreneurs' pivotal role in fostering environments that prioritize emotional well-being, thereby enhancing the firm's resilience and ethical stance.

Finally, exciting insights on father-daughter analysis emerge from our initial analysis that can extend Cesarini et al. (2015)'s study. We suppose that emotional and professional support from fathers profoundly influences daughters' entrepreneurial orientation (EO) and leadership styles. Daughters who received strong emotional backing and professional mentorship were more likely to undertake innovative ventures and adopt assertive management roles, enhancing the firm's sustainability and innovation. For instance, participants noted that fathers' support not only prepared them for leadership but also inspired confidence and a propensity for risk-taking, which are crucial for navigating traditional gender roles and driving business growth. This dynamic contributes significantly to business governance, succession planning, and the fostering of a sustainable business model, thereby illustrating the essential role of paternal influence in shaping the strategic direction of family-owned firms.

Research limitations. The primary limitations of this study lie in the exploratory methodology chosen, driven by the novelty of the research and the necessity for a longitudinal approach. This is crucial to explore whether and how the impacts of guilt, shame, and satisfaction on individual EO among women, and subsequently on the EO of family firms led by women, evolve over an extended timeframe. To enhance the robustness of our findings, future research endeavors could broaden the sample size, thereby enabling a more comprehensive understanding of whether the results can be generalized. Additionally, repeating the same analysis within the sample firms would contribute to exploring potential variations. Furthermore, adopting a cross-country perspective would be particularly intriguing, shedding light on how emotions change within diverse cultural settings.

Managerial implications. This research underscores the significant impact of emotions on the EO of family firms led by women. By delving into the perceptions of emotions among women entrepreneurs and their integration into the EO of family businesses, valuable strategic insights have surfaced. As the prevalence of women's ownership and management in family enterprises continues to rise, grasping the intricacies of their emotionally oriented EO becomes crucial for a comprehensive understanding of this phenomenon. Consequently, the findings suggest compelling considerations for women, family entrepreneurs, and consultants, providing valuable insights to assess the evolutionary potential of firms and the societal shifts in women's entrepreneurship.

Originality. This study is original in its nature. To our knowledge, there is a lack of research that challenges this relevant topic. Thus, this research is original in both management studies and entrepreneurship studies.

References

- AHL H. (2006), "Why research on women entrepreneurs needs new directions", *Entrepreneurship Theory and Practice*, vol. 30, n. 5, pp. 595-621.
- ALDRICH H.E., ALVAREZ S.A., BRUMANA M., CAMPOPIANO G., MINOLA T. (2023), "Entrepreneurship in family firms: What's next? Multilevel embeddedness and individuals' cognition", *Journal of Family Business Strategy*, vol. 14, n. 3, 100583
- ARONOFF C., WARD J. (2011), *Family business values: How to assure a legacy of continuity and success*. Palgrave MacMillan.
- BANG N.P., RAY S., KUMAR S. (2023), "Women in family business research-What we know and what we should know?", *Journal of Business Research*, vol. 164, 113990.
- BRAUN S., STEGMANN S., HERNANDEZ BARK A.S., JUNKER N.M., VAN DICK R. (2017), "Think manager-think male, think follower-think female: Gender bias in implicit followership theories", *Journal of Applied Social Psychology*, vol. 47, n. 7, pp. 377-388.

- CRUZ C., JUSTO R., LARRAZA-KINTANA M., GARCES-GALDEANO L. (2019), "When do women make a better table? Examining the influence of women directors on family firm's corporate social performance", *Entrepreneurship Theory and Practice*, vol. 43, n. 2, pp. 282-301.
- DE GROOTE J., SOLUK J., LAUE S.L., HECK M., KAMMERLANDER N. (2023), "How can family-owned Mittelstand firms use their unique resources to master the digitalization age? The role of family historical, venture, and collaborative capital", *Business Horizons*, vol. 66, n. 1, pp. 133-152.
- DE MASSIS A., KOTLAR J. (2014), "The case study method in family business research: Guidelines for qualitative scholarship", *Journal of Family Business Strategy*, vol. 5, n. 1, pp. 15-29.
- DE MASSIS A., CHUA J.H., CHRISMAN J.J. (2008), "Factors preventing intra-family succession", *Family Business Review*, vol. 21, n. 2, pp. 183-199.
- DENZIN N.K., LINCOLN Y. (2000), *Handbook of Qualitative Research* (N. K. Denzin & Y. S. Lincoln, Eds. 2nd edition ed.), Sage.
- EISENHARDT K.M. (1989), "Building theories from case study research", *Academy of Management Review*, Vol. 14 n. 4, pp. 532-550.
- EISENHARDT K.M., GRAEBNER M.E. (2007), "Theory building from cases: Opportunities and challenges", *Academy of Management Journal*, Vol. 50 n. 1, pp. 25-32.
- FUENTES-FUENTES M.D.M., BOJICA A.M., RUIZ-ARROYO M. (2015), "Entrepreneurial orientation and knowledge acquisition: effects on performance in the specific context of women-owned firms", *International Entrepreneurship and Management Journal*, vol. 11, pp. 695-717.
- GIOIA D.A., CORLEY K.G., HAMILTON A.L. (2013), "Seeking qualitative rigor in inductive research: Notes on the Gioia methodology", *Organizational Research Methods*, Vol. 16 n.1, pp. 15-31.
- GUNDRY L.K., KICKUL J.R., IAKOVLEVA T., CARSRUD A.L. (2014), "Women-owned family businesses in transitional economies: key influences on firm innovativeness and sustainability", *Journal of Innovation and Entrepreneurship*, vol. 3, n. 1, pp. 1-17.
- GUPTA V., LEVENBURG N.M. (2013), "Women in family business: three generations of research", In *Handbook of Research on Family Business, Second Edition*. Edward Elgar Publishing.
- HERNÁNDEZ-LINARES R., LÓPEZ-FERNÁNDEZ M.C. (2018), "Entrepreneurial orientation and the family firm: Mapping the field and tracing a path for future research", *Family Business Review*, vol. 31, n. 3, pp. 318-351.
- KARRA N., TRACEY P., PHILLIPS N. (2006), "Altruism and agency in the family firm: Exploring the role of family, kinship, and ethnicity", *Entrepreneurship Theory and Practice*, Vol. 30, n. 6, pp. 861-877.
- KELLERMANN F.W., EDDLESTON K.A., BARNETT T., PEARSON A.W. (2008), "An exploratory study of family member characteristics and involvement: Effects on entrepreneurial behavior in the family firm", *Family Business Review*, vol. 21, n. 1, pp. 1-14.
- KHANIN D. (2013), "How to reduce turnover intentions in the family business: Managing centripetal and centrifugal forces", *Business Horizons*, vol. 56, n. 1, pp. 63-73.
- KHANIN D., TUREL, O., MAHTO R.V. (2012), "How to increase job satisfaction and reduce turnover intentions in the family firm: The family-business embeddedness perspective", *Family Business Review*, vol. 25, n. 4, pp. 391-408.
- KICKUL J., LIAO J., GUNDRY L., IAKOVLEVA T. (2010), "Firm resources, opportunity recognition, entrepreneurial orientation and performance: the case of Russian women-led family businesses", *International Journal of Entrepreneurship and Innovation Management*, vol. 12, n. 1, pp. 52-69.
- KIM S.Y., GRAHAM S.S., AHN S., OLSON M.K., CARD D.J., KESSLER M.M., DEVASTO D.M., ROBERTS L.R., BUBACY F. A. (2016), "Correcting biased Cohen's kappa in NVivo", *Communication Methods and Measures*, Vol. 10 n.4, pp. 217-232.
- KOPORCIC N., TÖRNROOS J.Ä. (2019), *Qualitative case studies. In Understanding Interactive Network Branding in SME Firms* (pp. 103-110), Emerald Publishing Limited.
- LEGARD R., KEEGAN J., WARD K. (2003), "In-depth interviews", *Qualitative research practice: A guide for social science students and researchers*, Vol. 6 n. 1, pp. 138-169.
- LITZ R.A. (1997), "The family firm's exclusion from business school research: Explaining the void; addressing the opportunity", *Entrepreneurship Theory and Practice*, Vol. 21 n. 3, pp. 55-71.
- LYMAN A.R. (1988), "Life in the family circle. *Women in Management Review*, vol. 4, n. 3), "
- MADISON K., EDDLESTON K.A., KELLERMANN F.W., POWELL G.N. (2021), "Kinship and gender in family firms: new insights into employees' organizational citizenship behavior", *Family Business Review*, vol. 34, n. 3, pp. 270-295.
- MILLER D. (1983), "The correlates of entrepreneurship in three types of firms", *Management Science*, vol. 29, n. 7, pp. 770-791
- MILLER D., FRIESEN P.H. (1983), "Strategy-making and environment: the third link", *Strategic Management Journal*, vol. 4, n. 3, pp. 221-235.
- NEKHILI M., CHAKROUN H., CHTIOUI T. (2018), "Women's leadership and firm performance: Family versus nonfamily firms", *Journal of Business Ethics*, vol. 153, pp. 291-316.
- PETTIGREW A.M. (2014), *The politics of organizational decision-making*. Routledge.
- PICONE P.M., DE MASSIS A., TANG Y., PICCOLO R.F. (2021), *The psychological foundations of management in family firms: Values, biases, and heuristics*. In (Vol. 34, pp. 12-32): SAGE Publications Sage CA: Los Angeles, CA.
- REAY T., ZHANG Z. (2014), "Qualitative methods in family business research", In L. Melin M. Nordqvist, & P. Sharma (Eds.), *The Sage handbook of family business* (pp. 573-593), Sage.
- Sherlock et al., vol. 2023
- SILVERMAN D. (2001), *Interpreting Qualitative Data: Methods for interpreting talk, text and interaction*. In. London, UK: Sage.
- THIÉTART R.A. (2014), *Méthodes de recherche en management-4ème édition*. Dunod.
- YIN R.K. (2008), "Case study research (4 ed.)", Sage.
- YIN R.K. (2013), "Validity and generalization in future case study evaluations", *Evaluation*, vol. 19, n. 3, pp. 321-332.

The impact of board gender diversity on family firms' value: the mediating role of environmental innovation

FRANCESCO GANGI¹ MARIA COSCIA² LUCIA MICHELA DANIELE³ NICOLA VARRONE⁴

Framing of the research. The 2023 Nobel prize winner Claudia Goldin (2014, pp. 1091), recalling the profound challenges that global society has faced in recent years, stated that “Of the many advances in society and the economy in the last century, the converging roles of men and women are among the grandest”. While we have made significant progress towards gender equality, there are still significant obstacles requiring our attention and action. The 2023 Global Gender Gap Report (WEF, 2023) indicates a modest recovery of female representation in corporations while highlighting a decline in women's representation in leadership roles. Thus, the issue of gender inequality in top-level positions remains a still persistent challenge. This is a timely question related to the wider theme of gender diversity in organizational apical roles, such as boards of directors. As part of the multifaceted gender diversity concept, board gender diversity (BGD) can be defined as “the equitable or fair representation of men and women on corporate boards” (Nuber and Velte, 2021, p. 1959).

Consistent with recent surveys (e.g., EY, 2023), BGD is also a challenge in certain organizations that have attracted the academic and practitioners' interest due to their peculiar business approach, such as family firms (FFs). The specific organizational setting of FFs is depicted by literature as the “engine of global economy” (Chen et al., 2014), since they manage most economic activities worldwide (De Massis et al., 2018), and emphasizes noneconomic factors in decision-making (Berrone et al., 2012). Among the noneconomic motivations of FFs, we can highlight the preservation of socioemotional wealth (SEW) asset (Gómez-Mejía and Herrero, 2022), which includes nurturing family reputations, retaining family control, adhering to family values, and ensuring continuous business and generational succession (Gómez-Mejía and Herrero, 2022). In this perspective, gains or losses in SEW represent the main reference point in FFs decision-making. Accordingly, FFs are required to design corporate governance (CG) bodies that help a unique business approach to achieve financial robustness, without jeopardizing SEW preservation.

Following the theoretical lens of SEW, prior literature (e.g., Maseda et al., 2022; Wang et al., 2023) suggests that FFs can provide a more favourable organizational climate to empower female leadership. Specifically, FFs' propensity to nurture social and emotional ties between the family and stakeholders might resonate with communal psychological and behavioural traits historically credited to women (Spence & Helmreich, 1978). Attributes such as care, empathy, social orientation, and risk aversion can make women effective stewards of corporate social capital assets. Accordingly, female involvement in FF governance may incentivize business stakeholder orientation, while preserving SEW. At the same time, following prior studies (e.g., Reguera-Alvarado et al., 2017; Galbreath, 2018), a more diverse gender board composition is expected to enhance corporate financial performance (CFP), through the involvement of different perspectives and skills in decision-making.

However, the impact of increased female representation in CG bodies on FFs' financial goal is still a relatively unexplored topic. Indeed, findings in the extant FF literature are mixed or suffer from generalizability limits, thus leaving unanswered the question. Specifically, some studies show a positive impact of BGD on CFP (e.g., Gordini & Rancati, 2016; Vieira, 2018; García-Meca & Santana-Martín, 2023), while other research (e.g., Chadwick & Dawson, 2018) do not confirm this positive link in the specific FFs organizational setting. Other studies, then, are context specific and focus on single countries, such as Italy (Gordini and Rancati, 2017), Spain (García-Meca & Santana-Martín, 2023), and Portugal (Vieira, 2018).

Accordingly, the current study aims to investigate how BGD in FFs can led to higher CFP. Moreover, given the mixed results from previous research, the current study approaches this relationship by also taking into consideration additional factors that may influence it. In this regard we consider two aspects distinguishing FFs, that is: the aim of preserving noneconomic goals (Gómez-Mejía and Herrero, 2022); the propensity to create benevolent ties with stakeholders through the engagement in corporate environmental responsibility (CER) (Miroshnychenko et al., 2022). This propensity can be

¹ University of Campania “L. Vanvitelli”
e-mail: francesco.gangi@unicampania.it

² University of Campania “L. Vanvitelli”
e-mail: maria.coscia@unicampania.it

³ University of Campania “L. Vanvitelli”
e-mail: luciamichela.daniele@unicampania.it

⁴ University of Campania “L. Vanvitelli”
e-mail: nicola.varrone@unipegaso.it

also connected with the broader scenario of climate changes that have introduced new risks and new opportunities for FFs, thus amplifying the relevance of CER (Bathia, 2021). As consequence, FFs must rethink their business models, while developing green innovative solutions that support environmental sustainability. Hence, CER emerges as a prominent business strategy aiming at minimizing the environmental impact of family business activities, by focusing on reducing emissions, using natural resources efficiently, and fostering eco-innovation. Accordingly, the CER is a multi-soul construct (Melo & Garrido-Morgado, 2012), encompassing the capability of firms to generate environmental innovation (Dangelico, 2017; Bathia, 2021).

This growing awareness towards CER has led to the widespread adoption of environmental innovation to achieve a win-win scenario. On the one hand, through CER-orientation in innovative projects, FFs may be strategically aligned with environmental goals, including the mitigation of the negative impact on the environment (He & Jiang, 2019). On the other hand, prior studies (Dangelico, 2017; Bathia, 2021; Gangi et al., 2021), underscore how engagement in green practices can produce tangible and intangible assets, reinforcing CFP and reputation among stakeholders. From this perspective, the environmental innovation can be considered as a cospecialized asset that improves the value of other firm assets (McWilliams & Siegel, 2011), thereby fostering firms' value.

Based on these premises, the link between BGD and CFP may benefit from the level of FFs' CER innovation. This impact is consistent with the preservation of noneconomic goals (e.g., Berrone et al., 2012; Gómez-Mejía & Herrero, 2022), while preserving the continuity of FFs (Hauck et al., 2016).

Consistent with our research framework, based on a worldwide sample of 335 FFs (2009-2020), we first explore the effect of BGD on company's value (Tobin's Q). Then, we deepen the link between BGD and FFs' value by investigating the mediating role of environmental innovation.

Purpose of the paper. Over the last years, a growing number of studies have analysed how the proportion of women on corporate boards influence CFP, showing mixed results. Within the FFs context, some studies show that BGD has a positive effect on financial outcomes (e.g., Reguera-Alvarado et al., 2017; Galbreath, 2018), while other studies find inconclusive or negative relationships (e.g., Chadwick & Dawson, 2018; García-Meca & Santana-Martín, 2023; Chapple & Humphrey, 2014; Yarram & Adapa, 2023). These divergence calls for further exploration.

The link between BGD and CFP can be interpreted through the lens of the resource dependence theory (Pfeffer & Salancik, 1978), which states that corporations operate in an open system, and need to exchange different resources for survival. In this sense, as corporate boards are responsible for a firm's strategic orientation (Naciti, 2019), the effectiveness of strategic actions may depend on the mix of resources that directors are able to bring to the board. Indeed, Hillman et al. (2002) argue that gender diversity may be a source of social capital, experience, skills, and networks. In the same vein, Reguera-Alvarado et al. (2017) and Chadwick and Dawson (2018) provide evidence that BGD promotes the integration of broader perspectives and different informational resources that can improve the understanding of the competitive context, thus strengthening the conditions of a positive link between BGD and improved business outcomes (Reguera-Alvarado et al., 2017).

Consistent with Makkonen (2022), boards can benefit from gender diversity in terms of the management of knowledge resources. In particular, greater BGD may result in different ideas and perspectives that may support the ability to value, assimilate and apply new knowledge within the organization. In this sense, diversified boards of directors embody a "healthy mix" of different competences and capabilities that, in turn, may improve the identification of business opportunities and the adoption of innovative solutions (Lu & Herremans, 2019). Accordingly, consistent with FFs prior literature (e.g., Gordini & Rancati, 2016), demographic features, such as board members' gender, may stimulate organizations' creativity and innovation. The fallout of this positive link between BGD and competitiveness can be measured through the increase of FF value, which synthesizes improvements in operational performance from including women in top level managerial decision making, and the reward to BGD from financial stakeholders. Indeed, consistent with the study of Chadwick & Dawson (2018), capital markets show increasing concerns with the convergence of improved business outcomes and social inclusion goals. An additional factor to justify a positive association between BGD and FFs' value. In the same vein, Galbreath (2018) argue that CG mechanisms and an organizational climate that are favourable to female empowerment in leadership positions, may contribute to enhancing the company value.

In light of the above, we posit the following:

H1: BGD positively affect FF value

Under the lens of SEW, Agostino and Ruberto (2021) state that FFs managers may tend to develop an eco-friendly consciousness, due to the high priority to non-financial goals (e.g., family identity, longevity, trustful relationship with local communities). Specifically, the adoption of environmental innovation could be a means for FFs to fulfil social expectations and obtain high social status in the community (Berrone et al., 2012). In this regard, earlier studies (e.g., Zaman et al., 2023) underline BGD as positive leverage of eco-innovative investments due to the greater female attitude to emphasize environmentally-related managerial issues. More specifically, women tend to a higher sensitivity towards the needs of other people, thus incentivizing the board's decisions for the welfare of the community, as in the case of the adoption of eco-responsible practices (Lu & Herremans, 2019; Nadeem et al., 2020).

The above arguments are rooted in psychological literature, that identified people's beliefs regarding female and male attitudes into two behavioural aspects, i.e. communal and agentic (Spence and Helmreich, 1978), which contribute to shape gender stereotypes. Women are commonly correlated to communal traits like morality, empathy and concern

with others, whereas men are mostly associated to the agentic traits like assertiveness and competitiveness. This vision aligns with the expectation that women are inclined to show greater orientation toward corporate sustainability practices and act in alignment with CER principles. In this sense, previous research on women in top management positions indicates that the growing BGD leads to increased engagement in CER (Orazalin and Baydauletov, 2020). This is because, compared to men, women are more likely to exhibit greater sensitivity to the demands of stakeholders and are more supportive of ecological concerns (Boulouta, 2013). Additionally, the female leadership style is correlated to greater awareness of environmental risks and a proactive attitude towards addressing the concerns of environmental stakeholders (Nuber and Velte, 2021). Consequently, as corporate boards functioning is essential for debating on managerial concerns (Naciti, 2019), the eco-conscious characteristics of female directors can influence board discussions, guiding the board towards making CER-focused decisions, including the adoption of environmental innovations.

Thus, under these theoretical grounds, the greater attention of women directors towards ecological issues is likely to lead to a greater engagement of the FF in eco-friendly innovations.

The CER engagement entails practices aimed at reducing ecological footprint and preventing natural depletion by designing environmentally sustainable products (Dangelico, 2017). Kemp and Pearson (2007, p. 7) define environmental innovation as “the production, assimilation or exploitation of a product, process, service or management or business method that is novel to the organization and which results, through its lifecycle, in a reduction of environmental risk, pollution and other negative impacts of resources use compared to relevant alternatives”.

The growing interest of customers and regulators (Khan et al., 2021) for green products and eco-business models fuelled the academic research on the business effect of environmental innovation. In this regard, prior literature (e.g., Dangelico, 2017; Bathia, 2021) highlights how to be compliant with environmental responsibility can foster competitive advantage through reduced operational costs, improved efficiency in resources use, and less polluting business processes. Specifically, following the RBV perspective (Barney, 1991), by intensifying their commitment to environmental innovation, firms can develop strategic resources that are both valuable and difficult for competitors to imitate, such as advancements in green technology, green knowledge and capabilities, higher resource efficiency, and green innovation stewardship, all factors reinforcing competitiveness (Gangi et al., 2021).

Moreover, according to the stakeholder theory (Freeman, 1984), environmental innovation can bolster CFP by fostering trustful relationships with stakeholders, thus reinforcing reputational capital (Surroca et al., 2010). From these perspectives, Dangelico (2017) indicates that companies engaged in the design and the implementation of environmentally friendly products and practices improve their reputation among financial stakeholders, since are less exposed to stakeholder sabotage and future liabilities (Barnett and Salomon, 2012). Furthermore, through eco-innovation, companies can better align their business models to environmental regulations, thus limiting risks of legal disputes. Accordingly, as “co-specialized asset” (McWilliams and Siegel, 2011), environmental innovation contributes to better CFP, by improving competitiveness and corporate reputation, while mitigating firm risk (Gangi et al., 2021).

In light of the above, we posit the following:

H2: Environmental innovation mediates the relationship between BGD and FF value

Methodology. To test our hypotheses, we adopt an international sample of FFs, starting from the list of the World’s Top 750 Family Businesses (Family Capital). We match the Family Capital list with the Refinitiv database to obtain information on BGD and environmental innovation and retrieve financial data from the Worldscope database. We remove 416 FFs due to a lack of information on BGD, environmental innovation or financial characteristics during the study period (2009-2020). This procedure results in a final sample of 335 FFs.

As dependent variable, we proxy FF value through Tobin’s Q. Consistent with Kim and Lu (2011), we compute Tobin’s Q as the sum of the market value of common stocks plus the book value of total liabilities divided by the book value of total assets. As independent variable, consistent with García-Meca and Santana-Martín (2023), we rely on the percentage of female directors (BGD) as measure of gender diversity on corporate boards. Moreover, the mediating variable is represented by the Refinitiv’s environmental innovation score, reflecting a company’s capacity to reduce the environmental costs and burdens for its customers, and thereby creating new market opportunities through new environmental technologies and processes or eco-designed products. About the controls, we adopt the number of independent board directors (B. independence); dummy variable equal to 1 if a CEO chairs the board or if the chairperson of the board has been the CEO of the company, 0 otherwise (CEO duality); total debt divided by total capital (Leverage); the FFs size (Size), as the natural logarithm of the number of employees; capital expenditures on sales (Capex); the firms’ age (Firm Age); finally, we include GDP growth and GDP per capita to control for countries’ economic heterogeneity.

Regarding the empirical strategy, this study adopts the Baron and Kenny (1986) mediation technique, that requires the estimation of three regression equations. First, we estimate the influence of BGD on environmental innovation. Second, we evaluate the effect of BGD on firm value. Finally, we assess the impact of both BGD and environmental innovation on the firm value of FFs. The three equations are formalized as follows:

$$E\text{-innovation}_{i,t} = \beta_0 + \beta_1 BGD_{i,t-1} + \beta_2 X_{i,t-1} + \varepsilon_{i,t-1} \quad (1)$$

$$FV_{i,t} = \beta_0 + \beta_1 BGD_{i,t-1} + \beta_2 X_{i,t-1} + \varepsilon_{i,t-1} \quad (2)$$

$$FV_{i,t} = \beta_0 + \beta_1 BGD_{i,t-1} + \beta_2 E\text{-innovation}_{i,t-1} + \beta_3 X_{i,t-1} + \varepsilon_{i,t-1} \quad (3)$$

where $E\text{-innovation}_{i,t}$ is the degree of engagement in environmental innovation of FF_i at time t ; $BGD_{i,t-1}$ represents the measure of board gender diversity of FF_i at time $t-1$; $X_{i,t-1}$ is a vector of control variables at time $t-1$; $FV_{i,t}$ reflects the firm value of FF_i at time t ; and ε is the random error term. Based on evidence from the Hausman test, we perform the three regression equations and adopt fixed effects estimators. All of the independent and control variables are lagged by 1 year to smooth possible reverse causality issues.

Results. Table 1 provides the sample descriptive statistics, and Table 2 reports the correlation analysis. All variables have correlation coefficients below the conventional level of 0.70 (Ratner, 2009), thus indicating that the estimates are not likely to be biased by multicollinearity issues.

Table 3 shows the regression analyses relative to Baron and Kenny's (1986) procedure. In particular, models 1 and 2 show the estimate referring to the influence of BGD on E-innovation, while models 3, and 5 estimate the direct influence of BGD on CFP. Models 4, and 6, instead, display the estimates relative to the relationship between BGD and CFP, also including the environmental innovation (E-innovation) measure among the independent variables. Models 1 and 2 indicate that BGD at time $t-1$ positively and significantly impacts E-innovation of FFs at time t (at a confidence level of 10%). The empirical models 3 and 5, instead, suggest that BGD at time $t-1$ positively and significantly influences FF value at time t , at a confidence level of 1%. Thus, we confirm our first hypothesis of a positive impact of higher BGD on FFs value.

Considering, then, our second hypothesis on the mediating effect of environmental innovation, the results from models 4 and 6 indicate that E-innovation partially mediates the positive link between BGD and FF value. Independently from the presence of year dummies, we observe that the magnitude of BGD coefficients decreases in models with E-innovation. For example, regarding empirical models including year dummies, relative to model 5, the magnitude of the BGD's coefficient is lower in model 6. These results indicate that the engagement in environmentally friendly innovations mediates the link between the BGD and CFP, thus confirming our second hypothesis. With reference to control variables, empirical models 1 and 2 indicate that firm size and firm age have a positive and statistically significant influence on FFs' E-innovation. Models 3-5, instead, show that board independence has negative and statistically impact on FF value.

Research limitations. This study suffers certain limitations that could provide directions for further research. First, consistent with Chua et al. (2012, p. 3), FFs present many heterogeneous aspects, including firm size (Aiello et al., 2023). Thus, future studies can focus on smaller and larger FFs, to provide a more comprehensive understanding of how BGD impacts CFP across different types of FFs. Second, additional variables measuring both gender diversity and financial performance could be considered to further enrich the results obtained. Finally, while the current study is limited to mediation approach, future research could include the moderating influence of additional variables, as well as it may refer to others mediating variables. Addressing these limitations could significantly enhance the understanding of the interplay between gender diversity and financial performance in the context of FFs.

Managerial implications. Our study offers several practical implications. First, by enhancing female representation in CG bodies, FFs not only demonstrate commitment to diversity supporting improved reputation towards stakeholders, but also create effective synergies between environmental innovation and SEW assets, thus capitalizing the distinctive leadership style and managerial contribution of women. Second, this strategic approach positively influences financial performance, demonstrating the tangible benefits of integrating gender diversity into FFs' CG mechanisms. Third, for FFs managers, our findings underscore the importance of leveraging gender diversity to enhance environmental innovation strategies. The proactive engagement with gender diversity and environmental innovation can lead to new business opportunities, stronger competitive advantages, and alignment with evolving regulatory and consumer expectations around sustainability. Then, managers are encouraged to approach gender diversity not just as a compliance or ethical imperative, but rather as a strategic asset that can drive both environmental and financial performance.

Originality of the paper. This study offers several valuable contributions. Since the FF literature does not show consensus regarding the BGD and CFP link, it could be important to consider intervening variables to improve its understanding. In this sense, by disentangling the CER multi-soul concept, our study fills this void by considering the mediating role of environmental innovation. At the same time, we show the mediating role of environmental innovation through improved FF value, validating the benefits for financial and nonfinancial stakeholders of funding FFs that engage in environmentally conscious business practices. Finally, we shed light on the link between BGD and CFP by relying on robust evidence from large-scale multi-country empirical analyses. This approach addresses generalizability limitations of prior studies on FFs (e.g., Gordini & Rancati, 2016; Vieira, 2018; García-Meca & Santana-Martín, 2023).

Key words: Board gender diversity; environmental innovation; corporate financial performance; socioemotional wealth; family firms

References

- AGOSTINO M., RUBERTO S. (2021), "Environment-friendly practices: Family versus non-family firms", *Journal of Cleaner Production*, vol. 329, pp. 129689.
- AIELLO F., MANNARINO L., PUPO V. (2023), "Family firm heterogeneity and patenting. Revising the role of size and age", *Small Business Economics*, pp. 1-29.
- BARNETT M.L., SALOMON R.M. (2012), "Does it pay to be really good? Addressing the shape of the relationship between social and financial performance", *Strategic management journal*, vol. 33, n. 11, pp. 1304-1320.
- BARNEY J. (1991), "Firm resources and sustained competitive advantage", *Journal of management*, vol. 17, n. 1, pp. 99-120.
- BARON R.M., KENNY D.A. (1986), "The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations", *Journal of Personality and Social Psychology*, vol. 51, n. 6, pp. 1173-1182.
- BHATIA M. S. (2021), "Green process innovation and operational performance: The role of proactive environment strategy, technological capabilities, and organizational learning", *Business Strategy and the Environment*, pp. 1-13.
- BERRONE P., CRUZ C., GOMEZ-MEJIA L.R. (2012), "Socioemotional wealth in family firms: Theoretical dimensions, assessment approaches, and agenda for future research", *Family Business Review*, vol. 25, n. 3, pp. 258-279.
- BOULOUTA I. (2013), "Hidden connections: The link between board gender diversity and corporate social performance", *Journal of Business Ethics*, vol. 113, n. 2, pp. 185-197.
- CHADWICK I.C., DAWSON A. (2018), "Women leaders and firm performance in family businesses: An examination of financial and nonfinancial outcomes", *Journal of Family Business Strategy*, vol. 9, n. 4, pp. 238-249.
- CHEN Q., HOU W., LI W., WILSON C., WU Z. (2014), "Family control, regulatory environment, and the growth of entrepreneurial firms: International evidence", *Corporate Governance: An International Review*, vol. 22, n. 2, pp. 132-144.
- CHUA J.H., CHRISMAN J.J., STEIER L.P., RAU S.B. (2012), "Sources of heterogeneity in family firms: An introduction", *Entrepreneurship Theory and Practice*, vol. 36, n. 6, pp. 1103-1113.
- DANGELICO R.M. (2017), "What drives green product development and how do different antecedents affect market performance? A survey of Italian companies with eco-labels", *Business Strategy and the Environment*, vol. 26, n. 8, pp. 1144-1161.
- DE MASSIS A., FRATTINI F., MAJOCCHI A., PISCITELLO L. (2018), "Family firms in the global economy: Toward a deeper understanding of internationalization determinants, processes, and outcomes", *Global Strategy Journal*, vol. 8, n. 1, pp. 3-21.
- EY (2023), *How the largest family enterprises are outstripping global economic growth*.
- FREEMAN I.L. (1984), *Strategic management: A stakeholder approach*. Pitman.
- GALBREATH J. (2018), "Is board gender diversity linked to financial performance? The mediating mechanism of CSR", *Business & Society*, vol. 57, n. 5, pp. 863-889.
- GANGI F., MUSTILLI M., DANIELE L.M., COSCIA M. (2021), "The sustainable development of the aerospace industry: Drivers and impact of corporate environmental responsibility", *Business Strategy and the Environment*, vol. 31, n. 1, pp. 218-235.
- GARCÍA-MECA E., SANTANA-MARTÍN D.J. (2023), "Board gender diversity and performance in family firms: exploring the faultline of family ties", *Review of Managerial Science*, vol. 17, n. 5, pp. 1559-1594.
- GOLDIN C. (2014), "A grand gender convergence: Its last chapter", *American economic review*, vol. 104, n. 4, pp. 1091-1119.
- GÓMEZ-MEJÍA L.R., HERRERO I. (2022), "Back to square one: The measurement of Socioemotional Wealth (SEW)", *Journal of Family Business Strategy*, vol. 13, n. 4, pp. 100480.
- GORDINI N., RANCATI E. (2017), "Gender diversity in the Italian boardroom and firm financial performance", *Management Research Review*, vol. 40, n. 1, pp. 75-94.
- HAUCK J., SUESS-REYES J., BECK S., PRÜGL R., FRANK H. (2016), "Measuring socioemotional wealth in family-owned and-managed firms: A validation and short form of the FIBER Scale", *Journal of Family Business Strategy*, vol. 7, n. 3, pp. 133-148.
- HE X., JIANG S. (2019), "Does gender diversity matter for green innovation?", *Business Strategy and the Environment*, vol. 28, n. 7, pp. 1341-1356.
- HILLMAN A.J., CANNELLA JR A.A., HARRIS I.C. (2002), "Women and racial minorities in the boardroom: How do directors differ?", *Journal of Management*, vol. 28, n. 6, pp. 747-763.
- KEMP R., PEARSON P. (2007), *Final report MEI project about measuring eco-innovation*. UM Merit, Maastricht.
- KHAN S.J., KAUR P., JABEEN F., DHIR A. (2021), "Green process innovation: Where we are and where we are going", *Business Strategy and the Environment*, vol. 30, n. 7, pp. 3273-3296.
- KIM E.H., LU Y. (2011), "CEO ownership, external governance, and risk-taking", *Journal of Financial Economics*, vol. 102, n. 2, pp. 272-292.
- LU J., HERREMANS I.M. (2019), "Board gender diversity and environmental performance: An industries perspective", *Business Strategy and the Environment*, vol. 28, n. 7, pp. 1449-1464.
- MAKKONEN T. (2022), "Board diversity and firm innovation: a meta-analysis", *European Journal of Innovation Management*, vol. 25, n. 6, pp. 941-960.
- MASEDA A., ITURRALDE T., COOPER S., APARICIO G. (2022), "Mapping women's involvement in family firms: A review based on bibliographic coupling analysis", *International Journal of Management Reviews*, vol. 24, n. 2, pp. 279-305.
- MCWILLIAMS A., SIEGEL D.S. (2011), "Creating and capturing value: Strategic corporate social responsibility, resource-based theory, and sustainable competitive advantage", *Journal of management*, vol. 37, n. 5, pp. 1480-1495.
- MELO T., GARRIDO-MORGADO A. (2012), "Corporate reputation: A combination of social responsibility and industry", *Corporate social responsibility and environmental management*, vol. 19, n. 1, pp. 11-31.
- MIROSHNYCHENKO I., DE MASSIS A., BARONTINI R., TESTA F. (2022), "Family firms and environmental performance: A meta-analytic review", *Family Business Review*, vol. 35, n. 1, pp. 68-90.
- NACITI V. (2019), "Corporate governance and board of directors: The effect of a board composition on firm sustainability performance", *Journal of Cleaner Production*, vol. 237, 117727.
- NADEEM M., BAHADAR S., GULL A. A., IQBAL, U. (2020), "Are women eco-friendly? Board gender diversity and environmental innovation", *Business Strategy and the Environment*, vol. 29, n. 8, pp. 3146-3161.

- NUBER C., VELTE P. (2021), "Board gender diversity and carbon emissions: European evidence on curvilinear relationships and critical mass", *Business Strategy and the Environment*, vol. 30, n. 4, pp. 1958-1992.
- ORAZALIN N., BAYDAULETOV M. (2020), "Corporate social responsibility strategy and corporate environmental and social performance: The moderating role of board gender diversity", *Corporate Social Responsibility and Environmental Management*, vol. 27, pp. 1664-1676.
- PFEFFER J., SALANCIK G.R. (1978), *The external control of organizations: A resource-dependency perspective*, Harper & Row.
- RATNER B. (2009), "The correlation coefficient: Its values range between +1/ 1, or do they?", *Journal of Targeting, Measurement and Analysis for Marketing*, vol. 17, n. 2, pp. 139-142.
- REGUERA-ALVARADO N., DE FUENTES P., LAFFARGA J. (2017), "Does board gender diversity influence financial performance? Evidence from Spain", *Journal of Business Ethics*, vol. 141, pp. 337-350.
- SPENCE J.T., HELMREICH R.L. (1978), *Masculinity and femininity: Their psychological dimensions, correlates, and antecedents*, University of Texas Press.
- SURROCA J., TRIBÓ J.A., WADDOCK S. (2010), "Corporate responsibility and financial performance: The role of intangible resources", *Strategic management journal*, vol. 31, n. 5, pp. 463-490.
- VIEIRA E.S. (2018), "Board of directors characteristics and performance in family firms and under the crisis", *Corporate Governance: The International Journal of Business in Society*, vol. 18, n. 1, pp. 119-142.
- WANG J.C., ZHAO Y., SUN S.L., ZHU J. (2023), "Female-friendly boards in family firms", *Journal of Business Research*, vol. 157, pp. 113552.
- WEF (2023), *Global Gender Gap Report 2023*.
- ZAMAN R., ASIAEI K., NADEEM M., MALIK I., ARIF M. (2023), "Board demographic, structural diversity, and eco-innovation: International evidence", *Corporate Governance: An International Review*.

Table 1.

Variables	Obs	Median	Mean	Std. Dev.
Tobin's Q	1213	2.93	3.19	1.45
E-innovation	1257	26.16	33.00	31.75
BGD	1255	16.67	17.48	13.78
B. independence	1255	46.67	47.03	22.70
Ceo duality	1256	0.00	0.43	0.49
Leverage	1257	0.77	3.03	63.13
Size	1237	10.14	10.14	1.12
Capex	1257	4.60	7.30	8.93
Firm Age	1257	57.00	77.43	76.71
GDPgrowth	1257	1.41	1.27	3.50
GDP per capita	1250	39,159.42	34,080.89	23,256.76

Table 2

		1	2	3	4	5	6	7	8	9	10
1	E-innovation	1.00									
2	BGD	0.26***	1.00								
3	B. independence	0.04	0.14***	1.00							
4	Ceo duality	0.15***	0.01	0.04	1.00						
5	Leverage	0.00	0.02	-0.02	0.03	1.00					
6	Size	0.24***	0.09**	-0.01	0.05	0.03	1.00				
7	Capex	-0.04	0.02	0.03	-0.02	0.00	-0.12***	1.00			
8	Firm Age	0.21***	0.15***	-0.03	-0.17	0.01	0.22***	-0.06**	1.00		
9	GDPgrowth	-0.17***	-0.23***	-0.04	-0.07**	-0.02	0.00	0.11**	-0.16***	1.00	
10	GDP per capita	0.16***	0.25***	0.06**	0.04	-0.01	0.06**	-0.08**	0.24***	-0.28***	1.00

***, **, * indicate statistical significance at 1%,5% and 10% level, respectively

Table 3.

Variable	(1)	(2)	(3)	(4)	(5)	(6)
	E-innovation	E-innovation	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q
BGD (t-1)	0.187*	0.166*	0.155***	0.153***	0.151***	0.149***
	(1.95)	(1.74)	(4.77)	(4.73)	(4.64)	(4.61)
E-innovation (t-1)				0.025**		0.025**
				(2.34)		(2.45)
B. independence (t-1)	-0.049	-0.045	-0.039**	-0.035*	-0.039**	-0.035*
	(-0.87)	(-0.78)	(-2.05)	(-1.84)	(-1.99)	(-1.79)
Ceo duality (t-1)	1.432	1.610	-1.090*	-1.148*	-1.111*	-1.175*
	(0.80)	(0.90)	(-1.80)	(-1.90)	(-1.83)	(-1.94)
Leverage (t-1)	-0.001	-0.0001	0.000	0.000	0.000	0.000
	(-0.18)	(-0.14)	(0.27)	(0.31)	(0.24)	(0.28)
Size (t-1)	6.212***	6.597***	-0.675	-0.844	-0.821	-1.006
	(3.77)	(3.98)	(-1.09)	(-1.30)	(-1.32)	(-1.61)
Capex (t-1)	-0.097	-0.092	-0.109**	-0.105**	-0.097**	-0.093**
	(-0.83)	(-0.79)	(-2.76)	(-2.66)	(-2.45)	(-2.35)
Firm Age	0.908***	1.150**	-0.391***	-0.413***	-0.193*	-0.222*
	(3.95)	(3.41)	(-5.05)	(-5.30)	(-1.69)	(-1.94)
GDPgrowth (t-1)	-0.197	-0.127	-0.230**	-0.224**	-0.410***	-0.406***
	(-0.74)	(-0.39)	(-2.54)	(-2.48)	(-3.78)	(-3.75)
GDP per capita (t-1)	0.001***	0.001**	0.000***	0.000***	0.000**	0.000**
	(4.24)	(3.20)	(3.98)	(3.74)	(3.38)	(3.24)
Year	No	Yes	No	No	Yes	Yes
_cons	-121.914***	-139.469***	62.697***	65.535***	48.438***	51.830***
	(-6.51)	(-5.55)	(9.13)	(9.42)	(5.39)	(5.71)
No. of Obs.	1257	1257	1214	1214	1214	1214
R-Squared	0.10	0.11	0.06	0.06	0.07	0.08

The digital transformation process of SMEs to compete in the current business environment: evidence from an Italian case

GINEVRA TESTA¹ ANDREA CIACCI² LARA PENCO³

Abstract

Digital transformation is an essential process for SMEs to maintain their competitive advantage in today's highly competitive, dynamic, and changing landscape. SMEs possess characteristics that can facilitate digital transformation, such as flexibility and agility. At the same time, they have to overcome barriers, such as poorer financial resources than large companies. This study aims to explore the digital transformation process of SMEs, highlighting the factors that favor this transformation and, on the other hand, the elements that can slow down or obstacle this process.

The methodology pursued involves a single case study, an Italian SME operating in the sportswear sector. Semi-structured interviews were conducted with the company's top management, data enriched by the collection of secondary data to facilitate the triangulation of data, subsequently analyzed through a content analysis carried out with the Nvivo 14 software. The results that emerged from this analysis highlighted the importance of the entrepreneurial figure in fostering and stimulating the technological development of SMEs; adequate data processing to obtain more detailed and sophisticated forecasts capable of fostering higher performance standards, new business opportunities, and growth for SMEs; data in driving more thoughtful and reasoned decision-making processes that may, however, become more complex to manage; an enhanced consumer orientation that allows for better satisfaction of demand needs and requirements; and, finally, the crucial role of middle management in managing and orchestrating this digital transformation to avoid potential internal resistance. This research offers several managerial recommendations and insights for future research to explore the factors that can accelerate the digital transformation of SMEs.

Key words: digitization; digital transformation; SMEs; growth; content analysis; case study

Framing of the research. Digital transformation has triggered significant changes in business models and business processes, requiring new organizational capabilities (Tan et al., 2015; Urbinati et al., 2020). In addition to requiring more specific skills, digital transformation also requires substantial financial resources, typically found in large companies, in which, however, flexibility and agility are more difficult to achieve due to the greater complexity of the corporate structure (Giotopoulos et al., 2017; Nasco et al., 2008). Therefore, digital skills can be acquired more quickly in small and medium-sized enterprises (SMEs) than in large organizations (Scuotto et al., 2021; Sousa & Rocha, 2019). Flexibility, agility, and leaner procedures resulting from a less complex organizational structure (Chan et al., 2019; Fletcher & Griffiths, 2020; Levy et al., 2001) are typical characteristics of SMEs that can facilitate digital transformation (Moeuf et al., 2017). While large companies are already benefiting from the opportunities of digitization and are already facing the challenges and difficulties of digital transformation, SMEs are often still in the early stages of this digital transformation journey (Moeuf et al., 2017).

In addition to these characteristics of SMEs, the success of SMEs' digital transformation stems from their ability to acquire digital skills within the company, particularly in data analysis (Priyono et al., 2020) and the ability of SMEs to recognize new business opportunities arising from technology (Dutta et al., 2020). The proper management of big data, made available by the innovations introduced, enables SMEs to carry out better analyses and forecasts and understand market dynamics more effectively. Thus, once big data analytics capabilities are acquired, SMEs can enjoy a more complete picture of information concerning the target market and consumer preferences, enabling companies to make more informed decisions in line with market needs (Manika et al., 2017). Therefore, in today's digital ecosystem, the acquisition of certain specific digital capabilities is particularly crucial to respond to the needs of an ever-changing market (Parida et al., 2016; Ravichandran, 2018) that requires constant strategic alignment, i.e., continuous adaptation to proactively respond to exogenous market shocks (Canhoto et al., 2021). Some technologies, such as big data and machine learning, are priority tools to compete in today's digital ecosystem (Subramaniam et al., 2019). Predictive

¹ University of Genova
e-mail: ginevra.testa@edu.unige.it
² University of Bocconi Milano
e-mail: andrea.ciacchi@unibocconi.it
³ University of Genova
e-mail: lpenco@economia.unige.it

models can be obtained from big data to identify behavioral patterns within the data and to manage market uncertainty more effectively (Ferraris et al., 2019). Therefore, in today's digital environment, these capabilities are essential to benefit from more accurate predictions and to seize all growth opportunities (Aquino-Arrieta et al., 2020). An important role is also played by corporate culture, which may be prone to technological innovation and thus facilitate or hinder digital transformation and organizational change (Garzoni et al., 2020). Thus, entrepreneurial orientation can greatly influence SMEs' technology investments (Anwar, 2018).

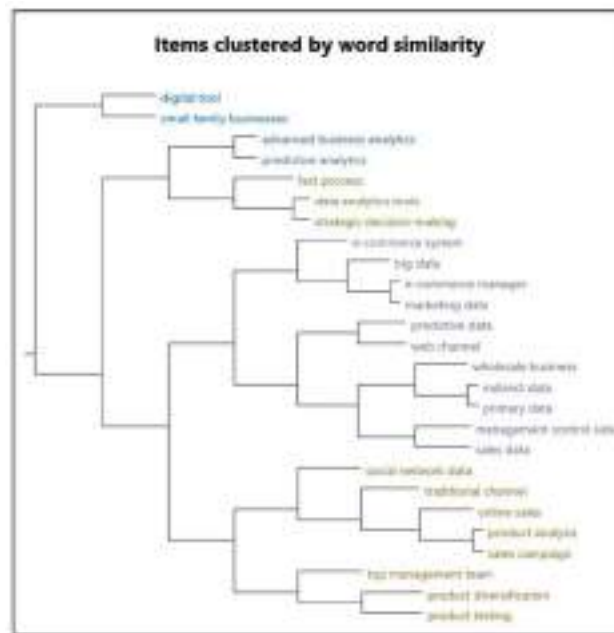
The digital transformation process of SMEs can start with the digitization of products and services and then move on to the digitization of business models and business processes (Soluk and Kammerlander, 2021). For example, SMEs can offer their products to a broader audience, including international audiences, using digital platforms (Li et al., 2018; Olvera-Lobo & Castillo-Rodríguez, 2018) and then move on to change internal processes and business models (Nwaiwu et al., 2020). According to Neirotti et al. (2017), SMEs exhibit higher agility in adapting their processes and business models than larger organizations. This heightened adaptability is attributed to the leaner organizational structure of SMEs, enabling them to reconfigure their business models swiftly and flexibly. Technology adoption and the use of digital platforms play a crucial role in defining the value proposition and taking advantage of an integrated information system (Cenamor et al., 2017). SMEs that manage to align their processes with the adopted technologies can achieve more in terms of growth, performance, and agility (Cragg et al., 2002; Kitchens et al., 2018; Matarazzo et al., 2021; Nasrollahi et al., 2021; Rialti et al., 2019). Therefore, a major challenge for SMEs remains to align their human and technological resources to transform themselves into data-driven companies (Sivarajah et al., 2017). It becomes crucial to effectively combine human intuition and increased knowledge from data (Lindebaum et al., 2020; Merendino et al., 2018). This combination gives rise to the need to manage potential problems, resistance, and organizational difficulties to grasp the opportunities arising from digital transformation. Given the complexity of digital transformation and the various dimensions involved, implementing insights from data into a strategic framework represents a gradual process. Indeed, understanding the technological potential and the routinization of processes concerning the new technologies implemented is a crucial and gradual process (Janssen et al., 2017).

Purpose of the paper. This study focuses on small and medium-sized enterprises as organizations of great relevance for the global economy (European Commission, 2022), in particular for the Italian context (Cardoni et al., 2023). Studies focusing on the evolution of SMEs' digital transformation are still rare in the literature (Marino-Romero et al., 2024). Therefore, addressing the complexity of SMEs' digital transformation, this study aims to explore the digital transformation process from an evolutionary perspective and the potential enabling and hindering factors of this process. Thanks to digital transformation, SMEs can maintain their competitiveness in the current competitive market, seizing new opportunities for growth and development (Matarazzo et al., 2021). In order to benefit from these opportunities, however, SMEs must make significant efforts to overcome potential difficulties and obstacles. In addition, digital transformation can insert SMEs, e.g., using digital platforms, into an international competitive environment in which large global giants also operate, paving the way for potential threats as well (Mazzarol, 2015).

Methodology. To achieve the research objectives, the study presents a single case study of an Italian SME operating in the clothing sector. The choice to focus on the Italian territory stems from the diffusion of this type of organization on the Italian territory, which is strongly characterized by an entrepreneurial management style and family-run organizations (Bresciani et al., 2016; Franceschelli et al., 2018). Since these are SMEs with a strong entrepreneurial figure, they are not usually inclined to release strategic information to the public. Therefore, conducting interviews is an excellent opportunity to come into direct contact with SMEs and to fully understand their internal dynamics (Matarazzo et al., 2021). Therefore, we opted for semi-structured interviews developed with the key informants of the Italian SME chosen as a case study. Specifically, we interviewed the top management, i.e., the heads of the finance, management control, and e-commerce functions. The interviews followed a protocol consisting of several open-ended questions on the topics under analysis and lasted, on average, about one hour each. In addition to the primary data from the interviews, secondary data were also collected from sources such as company reports or websites to obtain a data triangulation. The interviews were recorded after the interviewees' consent, transcribed in full, and translated from Italian into English for content analysis using Nvivo 14 software. Nvivo software has been widely applied in the social sciences and management studies to investigate complex phenomena (Kraiwani et al., 2023). Content analysis has been conducted using the open coding practice, suitable for studying intricate phenomena where multiple factors come into play (Ghezzi & Cavallo, 2020). In particular, the cluster analysis conducted on Nvivo allows the coded aspects within the data to be merged to bring out potential interesting connections and links. It is a particularly useful exploratory tool for identifying associations within qualitative data (Macia, 2015).

Results. Figure 1 shows the cluster analysis conducted by word similarity on Nvivo 14, allowing the subdivision of the topics from the interviews into five main clusters.

Fig. 1: Cluster Analysis



Source: Personal Elaboration from Nvivo 14 software

Cluster 1: Entrepreneurship and technology adoption

The first cluster highlights the typical characteristics of the company, i.e., a small to medium-sized family business, and how they influence technology adoption. In addition to business characteristics, the entrepreneurial figure can also strongly influence the technological development of the business. During the SME's growth and evolution, the entrepreneurial figure has stimulated the experimentation of new technologies and the change of business models to align with the growing technological adoption. Although entrepreneurial intuition is still recognized as crucial, today's business seems more driven by the data made available by the technologies implemented. These technologies function, therefore, as a tool to support the SME's strategic decision-making process. Therefore, many of its business activities today use new technologies and analysis tools to compete in today's increasingly competitive marketplace, adapting to the changing needs of demand. Therefore, from its inception around the 1970s to today, the company has experienced major transformations in business models.

Cluster 2: Data-driven and predictive analysis

The second cluster focuses on advanced analyses and the possibility of performing predictive analyses on the available data to obtain more sophisticated forecasts. These more precise forecasts enable SMEs to achieve higher performance and grow over time. However, the company states that it does not yet have adequate mechanisms for processing such data as it claims to still use rather rudimentary tools for processing. Therefore, the company demonstrates its future interest in investing in specific business analytics skills to foster this knowledge and predictive abilities. The data at hand, if properly managed and processed, allow for more complex analyses and more informed decision-making processes and, thus, enable the company to maximize results even with its stakeholders, such as agents and distributors, reducing the number of inventories and maximizing its sales.

Cluster 3: Decision-making process

The third cluster focuses on the theme of decision-making, which today can be much more data-driven. Thus, it emphasizes the shift from a decision-making process based on the entrepreneur's intuition to a decision-making process centered on the data available and, thus, on the possibility of making much more reasoned and considered strategic decisions. Using big data analytics in strategic decision-making reduces the probability of errors and improves the accuracy of the decision-making process. On the one hand, the greater amount of data available to be included in the decision-making process makes this process much more complex to manage. At the same time, however, it is possible to obtain much more comprehensive assessments of the landscape in which the company operates, using more in-depth analyses, scenario simulations, and risk assessments.

Cluster 4: Customer orientation through e-commerce

A fourth cluster focuses on the topic and role of e-commerce and the transition from a business model focused more on input sales to a more end-consumer-oriented business model. By using digital platforms, both direct and indirect, the company can benefit from much more information about its consumers and, thus, better meet their needs. Using such

platforms has required new data management capabilities from SMEs and multiple channels, as well as the need to protect their competitiveness from potential international competitors. Therefore, SMEs need to take full advantage of their flexibility and adaptability to remain competitive in the marketplace and attempt to meet more effectively the demands of an increasingly environmentally and socially aware public. These digital channels also allow SMEs to test new business strategies and seize new market opportunities.

Cluster 5: Structure of the decision-making process

Finally, the last cluster focuses on how SMEs' flexible and flat structure facilitates rapid decision-making and minimizes the bureaucratic time typical of large companies. This speed of decision-making enables SMEs to respond more quickly to market demands and to establish better partnerships with their stakeholders. However, entrepreneurial vision, managerial role, and strategic thinking remain crucial. The middle manager plays an essential role in orchestrating the evolutionary process of data-driven digital transformation of SMEs. Therefore, a combination of entrepreneurial insight and data analysis, offered by technologies, is needed to combine entrepreneurial intuition and empirical evidence in a synergetic way.

Therefore, the cluster analysis highlights the need for a combination of technology and entrepreneurship in the digital transformation process of SMEs, a process calling for specific skills to manage and process an ever-increasing volume of data. Therefore, the acquisition of dynamic capabilities is an essential element in the transformation process of SMEs (Ciacci and Penco, 2023; Soluk and Kammerland, 2021). Only acquiring digital and analytical skills and capabilities within the organization will enable digital transformation and the achievement of higher performance standards (Ramdani et al., 2022), such as a higher sales volume resulting from increased demand satisfaction. Consumers today also demand from SMEs a focus on environmental and social practices with their production (Le, 2023). Therefore, with their flexibility and agility, SMEs must reactively respond to market demands, benefiting from more comprehensive and reasoned decision-making processes facilitated by the combination of entrepreneurial intuition and multiple data at their disposal (Marino-Romero et al., 2024).

Research limitations. This study is not without limitations, as it only describes one case study. This does not make the results of the analysis generalizable. Future lines of research could explore the phenomenon by analyzing more cases within the Italian national territory densely populated by SMEs. Taking into consideration also different geographical contexts, from that of Italy, or different sectors, from that of clothing, could highlight some differences arising from cultural, economic, and social factors or sectoral dynamics that could accelerate or slow down the digital transformation of SMEs. A longitudinal analysis would allow a better understanding of the role of the different enabling factors within the different stages of SMEs' digital transformation.

Managerial implications. This study offers important managerial implications. It represents a useful guide for middle management in understanding how to facilitate the digital transformation process of SMEs, e.g., by fostering the development of big data analytics skills within the organization for better analysis and management of available data.

Middle management thus plays a crucial role in coordinating the digital transformation of SMEs (Annosi et al., 2023). Besides the relevant role of middle management, the entrepreneur's innovative spirit and a corporate culture open to innovation also facilitate and accelerate this process (Lin and Kunnathur, 2019; Urbinati et al., 2019). All these elements need to be properly nurtured and stimulated, e.g., by engaging in good integration between technologies and personnel to avoid potential resistance and difficulties. These aspects can be encountered when an entrepreneurial company transforms into a data-driven company (Lindebaum et al., 2020; Merendino et al., 2018).

By leveraging digital transformation, managers can identify new business opportunities and enhance performance. Using digital platforms, social media, and online review platforms, SME managers can have more information about their consumers and, therefore, experiment with new strategies to solve any problems recognized by the public. This knowledge enables SMEs to adapt their offer to market needs more effectively and, thus, increase sales. Therefore, digital technologies can enable SMEs to implement more effective strategies and optimize certain costs (Bouwman et al., 2019; Foroudi et al., 2017).

In summary, digital transformation offers SMEs powerful tools to improve customer insight, increase business performance, make forecasts more accurate, support data-driven decision-making, increase resilience, and better meet market demands. However, these opportunities require a strategic commitment to adopt and integrate these digital technologies into the company's core business to facilitate this transformation. SMEs often lack such capabilities and, therefore, should understand the need to find outside specialists who excel in data analysis (Erevelles et al., 2016). As these professionals are scarce and difficult to find in small and medium-sized companies, SMEs may establish strategic partnerships with others to benefit from specialized and highly trained knowledge (De Mauro et al., 2018). Otherwise, an absence of such capabilities would lead to a mismanagement of the available data. As a result, SMEs may make wrong decisions and lose favorable business opportunities (Manika et al., 2017).

Originality of the paper. The originality of this study derives from observing the digital transformation of SMEs from an evolutionary perspective, i.e., moving from the digitization of products to that of decision-making processes and business models. The study also highlights some enabling and hindering factors SMEs may encounter along their digital transformation process.

The focus on SMEs may be interesting in that much of the research in the digital transformation literature has focused on large organizations, neglecting the inherent difficulties of this process for organizations with fewer financial

resources. Therefore, exploring the digital transformation process of SMEs as a key to preserving business competitiveness in today's marketplace and increasing performance can enrich the academic debate and offer recommendations for both managers and policymakers who should consider how to incentivize the digital transformation of such relations, which are particularly important for the global economy.

References

- ANNOSI M.C., BALZANO M., CIACCI A., MARZI G., TERLOUW J. (2023), "Managing generational tensions toward digital transformation: A microfoundational perspective", *IEEE Transactions on Engineering Management*.
- ANWAR M. (2018), "Business Model Innovation and SMEs Performance - Does Competitive Advantage Mediate?", *International Journal of Innovation Management*, vol. 22, n. 7, pp. 1850057.
- AQUINO-ARRIETA K., FERNANDEZ-MEJIA F., CESPEDES-BLANCO C., RAYMUNDO-IBANEZ C., ALVAREZ J.M. (2020), "Business Architecture Model Adapted to Predictive Analysis for Customer's Increasing of SMEs of Furnitures Industry through Digital Tools", In *2020 9th International Conference on Industrial Technology and Management (ICITM)*, pp. 176-180.
- BOUWMAN H., NIKOU S., DE REUVER M. (2019), "Digitalization, business models, and SMEs: How do business model innovation practices improve performance of digitalizing SMEs?", *Telecommunications Policy*, vol. 43, n. 9, pp. 101828.
- BRESCIANI S., CULASSO F., GIACOSA E., BROCCARDO L. (2016), "Two models of family firms in dividends and investments policy", *Global Business and Economics Review*, vol. 18, n. 3/4, pp. 320.
- CANHOTO A.I., QUINTON S., PERA R., MOLINILLO S., SIMKIN L. (2021), "Digital strategy aligning in SMEs: A dynamic capabilities perspective", *Journal of Strategic Information Systems*, vol. 30, n. 3.
- CARDONI A., KISELEVA E., BELLUCCI A. (2023), "The quality of SMEs stakeholder communication during strategic crises: The case of Italian unlisted SMEs", *Business Strategy and the Environment*, vol. 32, n. 6, pp. 3292-3308.
- CENAMOR J., RÖNNBERG SJÖDIN D., PARIDA V. (2017), "Adopting a platform approach in servitization: Leveraging the value of digitalization", *International Journal of Production Economics*, vol. 192, pp. 54-65.
- CHAN C.M.L., TEOH S.Y., YEOW A., PAN G. (2019), "Agility in responding to disruptive digital innovation: Case study of an SME", *Information Systems Journal*, vol. 29, n. 2, pp. 436-455.
- CIACCI A., PENCO L. (2023), "Business model innovation: harnessing big data analytics and digital transformation in hostile environments", *Journal of Small Business and Enterprise Development*, vol. 31, n. 8, pp. 22-46.
- CRAGG P., KING M., HUSSIN H. (2002), "IT alignment and firm performance in small manufacturing firms", *The Journal of Strategic Information Systems*, vol. 11, n. 2, pp. 109-132.
- DE MAURO A., GRECO M., GRIMALDI M., RITALA P. (2018), "Human resources for Big Data professions: A systematic classification of job roles and required skill sets", *Information Processing & Management*, vol. 54, n. 5, pp. 807-817.
- DUTTA G., KUMAR R., SINDHWANI R., SINGH R.K. (2020), "Digital transformation priorities of India's discrete manufacturing SMEs - a conceptual study in perspective of Industry 4.0". *Competitiveness Review: An International Business Journal*, vol. 30, n. 3, pp. 289-314.
- EREVELLES S., FUKAWA N., SWAYNE L. (2016), "Big Data consumer analytics and the transformation of marketing", *Journal of Business Research*, vol. 69, n. 2, pp. 897-904.
- FERRARIS A., MAZZOLENI A., DEVALLE A., COUTURIER J. (2019), "Big data analytics capabilities and knowledge management: Impact on firm performance", *Management Decision*, vol. 57, n. 8, pp. 1923-1936.
- FLETCHER G., GRIFFITHS M. (2020), "Digital transformation during a lockdown", *International Journal of Information Management*, vol. 55, pp. 102185.
- FOROUDI P., GUPTA S., NAZARIN A., DUDA M. (2017), "Digital technology and marketing management capability: achieving growth in SMEs", *Qualitative Market Research: An International Journal*, vol. 20, n. 2, pp. 230-246.
- FRANCESCHELLI M.V., SANTORO G., CANDELO E. (2018), "Business model innovation for sustainability: A food start-up case study", *British Food Journal*, vol. 120, n. 10, pp. 2483-2494.
- GARZONI A., DE TURI I., SECUNDO G., DEL VECCHIO P. (2020), "Fostering digital transformation of SMEs: A four levels approach", *Management Decision*, vol. 58, n. 8, pp. 1543-1562.
- GHEZZI A., CAVALLO A. (2020), "Agile Business Model Innovation in Digital Entrepreneurship: Lean Startup Approaches", *Journal of Business Research*, vol. 110, pp. 519-537.
- GIOTOPOULOS I., KONTOLAIMO A., KORRA E., TSAKANIKAS A. (2017), "What drives ICT adoption by SMEs? Evidence from a large-scale survey in Greece", *Journal of Business Research*, vol. 81, pp. 60-69.
- JANSSEN M., VAN DER VOORT H., WAHYUDI A. (2017), "Factors influencing big data decision-making quality", *Journal of Business Research*, vol. 70, pp. 338-345.
- KITCHENS B., DOBOLYI D., LI J., ABBASI A. (2018), "Advanced customer analytics: Strategic value through integration of relationship-oriented big data", *Journal of Management Information Systems*, vol. 35, n. 2, pp. 540-574.
- KRAIWANIT T., LIMNA P., & SIRIPATTHANAKUL S. (2023), "NVivo for social sciences and management studies: A systematic review", *Advance Knowledge for Executives*, vol. 2, n. 3, pp. 1-11.
- LE T.T. (2023), "Corporate social responsibility and SMEs' performance: mediating role of corporate image, corporate reputation and customer loyalty", *International Journal of Emerging Markets*, vol. 18, n. 10, pp. 4565-4590.
- LEVY M., POWELL P., YETTON P. (2001), "SMEs: Aligning is and the Strategic Context", *Journal of Information Technology*, vol. 16, n. 3, pp. 133-144.
- LI L., SU F., ZHANG W., MAO J. (2018), "Digital transformation by SME entrepreneurs: A capability perspective", *Information Systems Journal*, vol. 28, n. 6, pp. 1129-1157.
- LIN C., KUNNATHUR A. (2019), "Strategic orientations, developmental culture, and big data capability", *Journal of Business Research*, vol. 105, pp. 49-60.

- LINDEBAUM D., VESA M., DEN HOND F. (2020), "Insights from "the machine stops" to better understand rational assumptions in algorithmic decision making and its implications for organizations", *Academy of Management Review*, vol. 45, n. 1, pp. 247-263.
- MACIA L. (2015), "Using clustering as a tool: Mixed methods in qualitative data analysis", *The Qualitative Report*, vol. 20, n. 7, pp. 1083-1094.
- MANIKA D., PAPAGIANNIDIS S., BOURLAKIS M. (2017), "Understanding the effects of a social media service failure apology: A comparative study of customers vs. Potential customers", *International Journal of Information Management*, vol. 37, n. 3, pp. 214-228.
- MARINO-ROMERO J.A., PALOS-SÁNCHEZ P.R., VELICIA-MARTÍN F. (2024), "Evolution of digital transformation in SMEs management through a bibliometric analysis", *Technological Forecasting and Social Change*, vol. 199, pp. 123014.
- MATARAZZO M., PENCO L., PROFUMO G., QUAGLIA R. (2021), "Digital transformation and customer value creation in Made in Italy SMEs: A dynamic capabilities perspective", *Journal of Business Research*, vol. 123, pp. 642-656.
- MAZZAROL T. (2015), "SMEs engagement with e-commerce, e-business and e-marketing", *Small Enterprise Research*, vol. 22, n. 1, pp. 79-90.
- MERENDINO A., DIBB S., MEADOWS M., QUINN L., WILSON D., SIMKIN L., CANHOTO A. (2018), "Big data, big decisions: The impact of big data on board level decision-making", *Journal of Business Research*, vol. 93, pp. 67-78.
- MOEUF A., LAMOURI S., PELLERIN R., EBURDY R., TAMAYO S. (2017), Industry 4.0 and the SME: a technology-focused review of the empirical literature, In *7th International Conference on Industrial Engineering and Systems Management IESM*.
- NASCO S.A., TOLEDO E.G., MYKYTYN P.P. (2008), "Predicting electronic commerce adoption in Chilean SMEs", *Journal of Business Research*, vol. 61, n. 6, pp. 697-705.
- NASROLLAHI M., RAMEZANI J., SADRAEI M. (2021), "The Impact of Big Data Adoption on SMEs' Performance", *Big Data and Cognitive Computing*, vol. 5, n. 4, pp. 68.
- NEIROTTI P., RAGUSEO E., PAOLUCCI E. (2017), "Flexible work practices and the firm's need for external orientation: An empirical study of SMEs", *Journal of Enterprise Information Management*, vol. 30, n. 6, pp. 922-943.
- NWAIWU F., DUDUCI M., CHROMJAKOVA F., OTEKHILE C.-A.F. (2020), "Industry 4.0 concepts within the Czech SMEs manufacturing sector: an empirical assessment of critical success factors", *Business: Theory and Practice*, vol. 21, n. 1, pp. 58-70.
- OLVERA-LOBO M.D., CASTILLO-RODRÍGUEZ C. (2018), "Dissemination of Spanish SME information through web 2.0 tools", *Journal of Transnational Management*, vol. 23, n. 4, pp. 178-197.
- PARIDA V., OGHAZI P., CEDERGREN S. (2016), "A study of how ICT capabilities can influence dynamic capabilities", *Journal of Enterprise Information Management*, vol. 29, n. 2, pp. 179-201.
- PRIYONO A., MOIN A., PUTRI V.N.A.O. (2020), "Identifying Digital Transformation Paths in the Business Model of SMEs during the COVID-19 Pandemic", *Journal of Open Innovation: Technology, Market, and Complexity*, vol. 6, n. 4, pp. 104.
- RAMANDANI B., RAJA S., KAYUMOVA M. (2022), "Digital innovation in SMEs: A systematic review, synthesis and research agenda", *Information Technology for Development*, vol. 28, n. 1, pp. 56-80.
- RAVICHANDRAN T. (2018), "Exploring the relationships between IT competence, innovation capacity and organizational agility", *The Journal of Strategic Information Systems*, vol. 27, n. 1, pp. 22- 42.
- RIALTI R., ZOLLO L., FERRARIS A., ALON I. (2019), "Big data analytics capabilities and performance: Evidence from a moderated multi-mediation model", *Technological Forecasting and Social Change*, vol. 149, pp. 119781.
- SCUOTTO V., NICOTRA M., DEL GIUDICE M., KRUEGER N., GREGORI G.L. (2021), "A microfoundational perspective on SMEs' growth in the digital transformation era", *Journal of Business Research*, vol. 129, pp. 382-392.
- SIVARAJAH U., KAMAL M.M., IRANI Z., WEERAKKODY V. (2017), "Critical analysis of Big Data challenges and analytical methods", *Journal of Business Research*, vol. 70, pp. 263-286.
- SOLUK J., KAMMERLANDER N. (2021), "Digital transformation in family-owned Mittelstand firms: A dynamic capabilities perspective", *European Journal of Information Systems*, vol. 30, n. 6, pp. 676-711.
- SOUSA M.J., ROCHA Á. (2019), "Skills for disruptive digital business", *Journal of Business Research*, vol. 94, pp. 257-263.
- SUBRAMANIAM M., IYER B., VENKATRAMAN V. (2019), "Competing in digital ecosystems", *Business Horizons*, vol. 62, n. 1, pp. 83-94.
- TAN B., PAN S.L., LU X., HUANG L. (2015), "The Role of IS Capabilities in the Development of Multi-Sided Platforms: The Digital Ecosystem Strategy of Alibaba.com", *Journal of the Association for Information systems*, vol. 16, n. 4.
- URBINATI A., CHIARONI D., CHIESA V., FRATTINI F. (2020), "The role of digital technologies in open innovation processes: An exploratory multiple case study analysis", *R&D Management*, vol. 50, n. 1, pp. 136-160.

Websites

European Commission. (2022).

<https://op.europa.eu/en/publication-detail/-/publication/12f499c0-461d-11ee-92e3-01aa75ed71a1/language-en/format-PDF/source-301048431>

Track 10
Strategic Communication

Millennials and Bookfluencers: a cross cultural analysis

LINDA GABBIANELLI¹

Abstract

Bookfluencers are social media influencer specialized in literature and books.

This study aims at investigating the perception of bookfluencers and their role in the purchasing process by Italian and French millennials.

The study is based on the results of a survey carried out through an online questionnaire. The sample under investigation is represented by 601 millennials.

Findings reveal that millennials perceive bookfluencers as believable people that provide honest reviews. Concerning the purchasing process, bookfluencers facilitate the search for information and the evaluation of alternatives.

Millennials are passive spectators by liking posts and have a low level of interactions with bookfluencers posts.

The study reveals also that there are significant differences in perceive bookfluencers and in their role in the purchasing process between Italian and French millennials. The study contributes to expand the literature on influencer marketing in a sector underinvestigated, that is the book sector and adopting a cross cultural perspective.

The limits of the work concern mainly the generational cohort investigated and the consumer perspective.

Key words: social media influencers; millennials; books; cross-cultural analysis; Italy; France.

Framing of the research. *The rise of social media influencers has become a phenomenon in today's digital media communication. An influencer or social media influencer is a content creator who has expertise in an area and has built a substantial network of people as followers by producing valuable and creative content on social media platforms (Lou and Yuan 2019, Varsamis, 2018).*

social media influencers are often able to exert significant influence over the opinions and behaviours of the audience who look up to them (Bu et al. 2022).

Balakrishnan et al. (2014) investigated the impact of social media marketing on brand loyalty and purchase intention and found that social media marketing, especially electronic word of mouth (WOM), online communities, and online advertising, has positive effects on brand loyalty and purchase intention. Also Gautam and Sharma (2017) emphasized that social media marketing and customer relationships have a significant and positive impact on customers' purchase intentions. In turn, Sousa and Alturas (2020) found that online media is very important for the 'information research' stage of the purchase decision process, with Facebook, YouTube, and Instagram being the social networks with more users and more digital influencer. Balaban and Szabolcs (2022) argue that social media influencers always strive to remain authentic in their interactions with followers and brands, but that promotional activities pose a challenge to their authenticity.

Perceived social media influencers authenticity is a multidimensional construct consisting of sincerity, genuine endorsement, visibility, expertise, and uniqueness (Lee and Eastin, 2021).

Each dimension has varying effects on consumers' evaluation of a social media influencer, willingness to follow a social media influencer, and intention to purchase products recommended by social media influencers.

The main followers' perceptions based on influencers' attributes consist in trustworthiness and perceived expertise. Trustworthiness is related to the credibility of a source or person and the extent to which the source is considered valid (Masuda et al., 2022). Perceived expertise and authenticity are usually accompanied by trustworthiness in predicting positive social media marketing outcomes (Masuda et al. 2022; Chapple, Cownie, 2017; Schouten et al. 2020).

Lastly, purchase intention refers to the behavioral intentions of influencers' followers (Gomes et al. 2021). It is known that the perceived characteristics of influencers, generated from their personal attributes, can generate purchase intentions.

Reading is essential for learning in education. However, the digital revolution has transformed the ways to encourage reading and learning about books.

Bookfluencers are people who talk about books on the web and who they manage, through the contents they create, to guide the choices of other readers, because they generate a community around them that listens and takes their reading recommendations into consideration, thus becoming micro-celebrities (Zaffiro, 2023; Martensen et al., 2022)

¹ University of Modena e Reggio Emilia
e-mail: linda.gabbianelli@unimore.it

Bookfluencers build their reputation starting from their literary interests, communicating them in their social networks, and creating, in many cases, an affective bond with their followers (Onofrei et al. 2020; Jaiswal et al. 2018).

Bookfluencers have evolved in their way of communicating, attracting, and entertaining their followers to the same extent that social platforms and networks have. Booktubers, bookstagrammers, and booktokers are the latest manners of referring to bookfluencers who respectively use YouTube, Instagram, and TikTok to disseminate and promote literary works (Saima, 2020; Dolan et al., 2019).

Concerning the book readers, the data provided by ISTAT, based on the 2023 report, are not very encouraging. In 2022, the percentage of readers is 39.3%.. They are mainly young people between 11 and 24 years old who are engaged in reading activities, predominantly female.

As regards the French situation, the percentage of readers is 89% in 2023. Even in France, it is mainly women who are engaged in reading, aged between 15 and 24.

Most importantly, consumers choose to follow influencers because they are ‘genuine, open and relatable’ (Lee et al., 2021).

Although there are several studies on influencers and the role they play in purchasing processes, the literature regarding bookfluencers is scarce. The work of Magadán-Díaz et al., (2023) conducted in Spain, analyzed the persuasive power of bookfluencers. It emerged that it is bookstagrammers and booktokers who exert the greatest persuasion, while booktubers to a lesser extent, and the main factors involved are the content, the length, the quality of the information, the images, the sound and visual effects and by the voice of the influencer.

Despite the spread of studies about influencer marketing, its application in the book/publishing sector is relatively scarce. Tanwar et al. (2023) stated that the most of studies on influencers have been conducted in United States, Germany, India, Australia, and the Netherlands. In addition, in most of cases studies do not have an industry focus even if the industries most frequently discussed in articles are fashion, beauty and the travel industry. Therefore, from the literature emerges the necessity to explore other industries in unexplored countries in order to deepen the impact of influencers on the perception of digital consumers (Lou, Tan, and Chen 2019).

To fill this gap and gain better understanding of the social media influencers, the study aims at investigating the perception of bookfluencers and their role in the purchasing process by Millennials.

Purpose of the paper. The aim of the study is to investigate the millennials attitude towards influencers in the book/publishing sector. In particular, the paper aims to investigate the cultural differences of gen Z towards answer the following research questions:

1. Which is the perception of bookfluencers by gen y?
2. Which is the influence of bookfluencers in the purchasing process by gen y?
3. Which is the level of engagement of gen y on the bookfluencers activities?

Methodology. The present study aimed to answer the research questions by means of empirical analysis. A structured questionnaire was administered online to a sample of Italian and French millennials (born between 1980-1996). This questionnaire was distributed via computer-assisted web interviewing (CAWI) from September to November 2023.

A total of 601 young consumers completed the questionnaire voluntarily. To create the questionnaire items, the authors drew from the literature on social media influencers (adapted from Zaffiro,2023; Campbell, Farrel, 2020; Tolstopyat, 2018; Li, Peng, 2021). A five-point Likert scale was used to evaluate the items, except for the socio-demographic items.

The data were processed using SPSS software. Descriptive statistics were performed to summarize the participants’ responses and make inferences about the survey data. Additionally, an ANOVA analysis and chi-square test were performed to statistically test the equality of means and to analyze differences in behavior between the Italian millennials and the French millennials.

Results. The table 1 shows the main features of the sample.

The sample is composed mainly by young women that are studying or are employee. Concerning the type of reader, France is a country where the habit of reading is more widespread than in Italy because the percentage of strong readers (people that read at least 12 books per year) is higher.

Table 1 - profile of the sample

Feature		Italy (%)	France (%)
Gender	Women	91%	89%
	Man	9%	9%
	Other	1%	2%
Profession	Student	61.1%	44.7%
	Employee	22.3%	31.9%
	Freelance	6.9%	5%
	Unemployed	2.8%	5.3%
	Worker	1.9%	0.7%
	Teacher	1.3%	3.6%
	Other	1.5%	5.4 %
Type of reader	Strong reader	38.6%	51.8%
	Medium reader	34.8 %	33.3%
	Weak reader	26.6%	14.9%

Source: our elaboration

Millennials perceive bookfluencers (Table 2) as believable people that provide honest reviews. Influencers are also considered as source of inspiration for the readers. For both France and Italy, promotional hashtags do not negatively impact users' perceptions of bookfluencers (respectively mean 2.37 and 2.10), and users trust their information.

Comparing the perception of the two countries, it emerges that there is a significant difference in terms of credibility (sig.=0.009), identify oneself with influencers (Sig.=0.001) and the honesty of reviews (Sig.=0.000). In particular, Italian millennials have a better perception of influencers respect to French except for the identify themselves with influencers.

Table 2 - Perception of bookfluencers by millennials - comparison between Italy and France

Perception of bookfluencers	ITALY		FRANCE		F	Sign.
	Mean	SD	Mean	SD		
Expertise of influencers	3.54	0.837	3.35	0.860	3.113	0.079
Credibility of influencers	3.90	0.878	3.61	0.845	6.918	0.009
Source of inspiration	3.72	1.135	3.71	1.035	0.002	0.965
Identify oneself	2.69	1.201	3.21	1.227	12.155	0.001
Autentic content	3.68	0.983	3.60	0.994	0.444	0.506
Trust in information and review provided	3.59	0.922	3.39	0.866	2.991	0.085
Sincere reviews	3.94	0.846	3.56	0.889	12.584	0.000
Impact of # in the content	2.37	1.260	2.10	1.130	3.268	0.072

Sig. at level 0.005

Source: our elaboration

Concerning the *ROLE OF INFLUENCERS IN THE PURCHASING PROCESS* (Table 3), the results show that French millennials are influenced mainly by the author of a book (69.9%), by word of mouth (63%) and by the book cover (58.2%); while Italians from online reviews (57.7%), from the author (52.7%) and from word of mouth (47%). The chi-square test shows that all these factors have a significant difference between the two countries except for the online reviews.

Table 3 - Factors affecting the book purchase - comparison between Italy and France

Factors affecting the book purchase	ITALY	FRANCE	All sample	Chi -square	Sig
Book cover	36.7%	58.2%	47.45%	27.738	0.000
Author	52.7%	69.9%	61.30%	18.554	0.000
Publisher	16.0%	30.1%	23.05%	17.128	0.000
Word-of-mouth	47.0%	63.1%	55.05%	15.648	0.000
Online reviews	57.7%	51.8%	54.75%	2.110	0.146
Advertising	16.3%	27.0%	21.65%	10.127	0.001

Sig. at level 0.005

Source: our elaboration

For both French and Italian millennials (Table 4), bookfluencers facilitate the search for information and the evaluation of alternatives. Bookfluencers have a considerable impact on purchases: online reviews, in fact, plays a relevant role in the purchase decision.

However, millennials are not inclined to advise a book only because is sponsored by an influencer.

The ANOVA analysis revealed that there are significant differences between Italian and French millennials in terms of ease to find information (sig.=0.005), help to evaluate alternatives (Sig=0.029), intention to buy an editorial product only because is sponsored (sig.=0.001) and the intention to recommend a sponsored book (0.001). Notably, for Italian millennials the role of bookfluencers in the purchasing process is higher than French millennials.

Table 4 - Role of bookfluencers in the purchasing process - comparison between Italy and France

Role of bookfluencers in the purchasing process	ITALY		FRANCE		F	Sign.
	Mean	SD	Mean	SD		
To make easier to find book information	4.11	0.897	3.79	0.956	7.887	0.005
To help to evaluate alternative of choices	3.94	0.906	3.66	1.107	4.829	0.029
Intention to purchase a sponsored book on social media	3.22	1.056	3.00	1.058	2.734	0.099
Intention to buy an editorial product only because is sponsored	2.22	1.219	1.76	1.025	11.024	0.001
Intention to recommend a book just because sponsored	1.82	1.018	1.44	0.755	11.438	0.001

Sig. at level 0.005

Source: our elaboration

The level of engagement of millennials towards the bookfluencers online activity (table 5) is quite different.

As a matter of fact, french millennials are more engaged with bookfluencers, mostly in terms of being part of a community (mean 3.8), liking influencers' content (3.96) and be influenced by the content itself (mean 3.69).

Italian millennials, instead, tend to like influencers' content (mean 3.52), the emotions provoked by the content (mena= 3.20)

In general, both Italians and French millennials limit themselves to being passive spectators by liking posts, especially the latter, with very limited interaction especially for Italy.

The different level of engagement is confirmed by the significant difference emerged from the anova analysis (sig.<0.005), except the emotions that the content arouses.

The passion for reading (85%) is the main reason that pushes the two targets to follow bookfluencers, together with the affinity in terms of reading preferences (70%) and the desire to be updated on editorial news (71%).

The Anova analysis reveal that there is a significant difference between the two countries in terms of passion for reading (Sig.=0.029), the updated on editorial news (sig.=0.000) and the identification themselves with the influencers (Sig.=0.019)

Table 5 - Level of engagement of millennials towards bookfluencers - comparison between Italy and France

Level of engagement of millennials	ITALY		FRANCE		F	Sign.
	Mean	SD	Mean	SD		
Be a member of book communities	2.57	1.568	3.80	1.436	43.268	0.000
Intention to like an influencer's content	3.52	1.131	3.96	1.138	9.489	0.002
Intention to comment and interact with an influencer's content	1.97	1.195	2.65	1.211	20.891	0.000
Intention to share an influencer's content	1.83	0.979	2.20	1.132	8.030	0.005
Be influenced by the content itself	2.97	0.967	3.69	0.998	35.366	0.000
Be influenced by the emotions that the content arouses	3.20	1.083	3.37	1.171	1.557	0.213

Sig. at level 0.005

Source: our elaboration

Both samples let themselves be influenced both by the content and by the emotions that it arouses, with greater importance of the content for France, but the presence of the bookfluencer in the posts does not impact the closeness perceived by the users.

Table 6 - Reasons for following bookfluencers - comparison between Italy and France

Reasons for following bookfluencers	ITALY	FRANCE	All sample	Chi -square	Sig
Passion for reading	80.4%	90.1%	85.25%	4.760	0.029
Be informed about editorial news	56.6%	86.8%	71.70%	28.590	0.000
Identify oneself	5.6%	14.0%	9.80%	5.466	0.019
reinforce the belonging to the community	6.3%	11.6%	8.95%	2.294	0.130
Entertainment	42.7%	44.6%	43.65%	0.104	0.748
Opinion leader	7.7%	5.0%	6.35%	0.813	0.367
Similar reading preferences	67.8%	73.6%	70.70%	1.031	0.310

Sig. at level 0.005

Source: our elaboration

Research limitations. The study presents some limits, for example it is focused on the millennial's perception, so it could investigate other generational cohorts, or the bookfluencers perception.

Furthermore, it would be interesting to carry out an investigation adopting the perspective of publishers, to see if the collaboration with bookfluencers is fruitful and represent a competitive advantage given the costs to be incurred.

In addition, the study does not investigate the type of content (format) most appreciated by young consumers as well as the sentiment.

Third, the study could expand the observation to other countries and investigate differences and similarities in the role of social media influencers in the book sector.

Managerial implications. The role of social media influencers is becoming increasingly significant in both research and the industry. Influencers enables a unique and faster approach to connecting with audiences that traditional channels may not be able to reach. The social media influencers leverage their influence in a more effective manner with their credibility that can positively impact brand attitude, purchase intention, wishful identification and awareness which consequently leads to improved public relations, product attractiveness and higher engagements (Schouten et al., 2021; Kamaldeep, 2021).

The social media influencers' contents about up-to-date details of the latest products and brands are beneficial as they reduce the effort needed for consumers to search for information (Cheung et al., 2020).

Furthermore, social media influencers can educate consumers and improve the information quality of the content on the use of trending products from various industries by sharing reviews, recommendations, and opinions (Schouten et al., 2021).

From the firm's perspective, in the digital marketing context, developing and maintaining long term partnerships with a selective group of reliable social media influencers is a crucial strategy for success (Wu et al., 2021; McMullan et al., 2022)

The current study highlights the fact that bookfluencers play an important role in the purchasing process of millennials both in Italy and in France. Consequently, bookfluencers can be considered a precious resource for publishers that want to increase their visibility, increase brand awareness towards of the publishing sector and, ultimately, increase sales.

From a cultural point of view, bookfluencers play a key role for the younger generations and beyond, as they are able to bring back into vogue a declining activity, that of reading, which is fundamental for broadening one's horizons, enrich one's cultural background, develop a critical spirit, improve language skills and, more simply, to escape from everyday life.

Originality of the paper. The study has different aspects of originality:

First of all, the social media influencer marketing has been applied to numerous context (tourism, fashion, beauty) but there are not studies concerning the book sector. Secondly, the study is focused on the young consumers, that is Millennials. Third, the context investigated as there aren't previous studies conducted both in Italy and in France.

Lastly, the intercultural perspective of the analysis in which the role of social media influencers is investigated.

References

- BALABAN D.C., SZAMBOLICS J. (2022), "A proposed model of self-perceived authenticity of social media influencers", *Media and Communication*, vol. 10, pp. 235-246.
- BALAKRISHNAN B., DAHNIL M., YI W. (2014), "The impact of social media marketing medium toward purchase intention and brand loyalty among generation Y", *Procedia - Social and Behavioral Sciences*, vol. 148, pp. 177-185.
- BU Y., PARKINSON J., THAICHON P. (2022), "Influencer marketing: homophily, customer value cocreation behaviour and purchase intention", *Journal of Retailing and Consumer Services*, vol. 66, pp. 102904.
- CAMPBELL C., FARRELL J.R. (2020), "More than meets the eye: the functional components underlying influencer marketing", *Business Horizons*, vol. 63, pp. 469-479.
- CHAPPLE C., COWNIE F. (2017), "An Investigation into Viewers' Trust in and Response Towards Disclosed Paid-for-Endorsements by YouTube Lifestyle Vloggers", *Journal of Promotional Communications*, 5.
- CHEUNG M.L., PIRES G.D., ROSENBERGER P.J., DE OLIVEIRA M.J. (2020), "Driving consumer-brand engagement and co-creation by brand interactivity", *Marketing Intelligence and Planning*, vol. 38, n. 4, pp. 523-541.
- DJAFAROVA E., RUSHWORTH C. (2017), "Exploring the credibility of online celebrities' Instagram profiles in influencing the purchase decisions of young female users", *Computers in Human Behavior*, vol. 68, pp. 1-7.
- DOLAN R., CONDUIT J., FRETHEY-BENTHAM C., FAHY J., GOODMAN S. (2019), "Social media engagement behavior: A framework for engaging customers through social media content", *European Journal of Marketing*, vol. 53, pp. 2213-2243.
- GAUTAM V., SHARMA V. (2017), "The Mediating role of customer relationship on the social media marketing and purchase intention relationship with special reference to luxury fashion brands", *Journal of Promotion Management*, vol. 23, pp. 872-888.
- GOMES M., SUSANA MARQUES S., ÁLVARO DIAS A. (2022), "The impact of digital influencers' characteristics on purchase intention of fashion products", *Journal of Global Fashion Marketing*, vol. 13, pp. 187-204.
- JAISWAL D., KANT R. (2018), "Green purchasing behaviour: A conceptual framework and empirical investigation of Indian consumers", *Journal of Retailing and Consumer Services*, vol. 41, pp. 60-69.
- LEE J.A., EASTIN M.S. (2021), "Perceived Authenticity of Social Media Influencers: Scale Development and Validation: an International Journal", *Journal research of interactive marketing*, vol. 15, pp. 822-841.
- LI Y., PENG Y., (2021), "Influencer marketing: purchase intention and its antecedents", *Marketing Intelligence & Planning*, vol. 39, N. 7, pp. 960-978.
- KAMALDEEP S. (2021), "Influencer marketing from a consumer perspective: how attitude, trust, and word of mouth affect buying behavior", *European Integration Studies*, vol. 15, n. 1, pp. 231-24.
- LOU C., TAN S.S., CHEN X. (2019), "Investigating Consumer Engagement with Influencer-vs. brand-Promoted Ads: The Roles of Source and Disclosure", *Journal of Interactive Advertising*, vol. 19, N.3, pp. 169-186.
- LOU C., YUAN S. (2019), "Influencer marketing: how message value and credibility affect consumer trust of branded content on social media", *Journal of Interactive Advertising*, vol. 19, n. 1, pp. 58-73.
- MAGADÁN-DÍAZ M., RIVAS-GARCÍA J.I., (2023), "Persuasion and Engagement in the Spanish Bookfluencers", *Publishing Research Quarterly*, vol. 39, pp. 147-161.
- MARTENS M., BALLING G., HIGGASON K.A., (2022), "#BookTokMadeMeReadIt: young adult reading communities across an international, sociotechnical landscape", *Information and Learning Sciences*, vol. 123, n. 11/12, pp. 705-722.
- MASUDA H., HAN S., LEE J. (2022), "Impacts of influnecer attributes on purchase intentions in social media influencer marketing: Mediating roles of charcaterizations", *Technological Forecasting and Social Change*, vol. 174, pp. 121246
- MCMULLAN K., LAURELL C., PITT L. (2022), "Managing the tensions in marketer-influencer relationships", *Business Horizons*, vol. 65 N. 5, pp. 559-566.
- ONOFREI G., FILIERI R., KENNEDY L. (2022), "Social media interactions, purchase intention, and behavioural engagement: The mediating role of source and content factors", *Journal of Business Research*, vol. 142, pp. 100-112.

- SAIMA KHAN M.A. (2020), "Effect of Social Media Influencer Marketing on Consumers' Purchase Intention and the Mediating Role of Credibility", *Journal of Promotion Management*, vol. 27, pp. 503-523.
- SCHOUTEN A., JANSSEN L., MAEGAN VERSPAGET M. (2020), "Celebrity vs. Influencer endorsements in advertising: The role of identification, credibility, and Product-Endorser fit", *International Journal of Advertising*, vol. 39, pp. 258-281.
- SCHOUTEN A.P., JANSSEN L., VERSPAGET M. (2021), "Celebrity vs. Influencer endorsements in advertising: the role of identification, credibility, and Product-Endorser fit", *Leveraged Marketing Communications*, pp. 208-231.
- SOKOLOVA K., KEFI H. (2020), "Instagram and YouTube bloggers promote it, why should I buy? How credibility and parasocial interaction influence purchase intentions", *Journal of Retailing and Consumer Services*, vol. 53.
- TANWAR A.S., CHAUDHRY H., SRIVASTAVA M.K. (2023), "Social media influencers: literature review, trends and research agenda", *Journal of Advances in Management Research*, vol. ahead-of-print No. ahead-of-print.
- TOLSTOPYAT N. (2018), "BookTube, Book Clubs and the Brave New World of Publishing", *Satura*, vol. 1, pp. 91-95.
- WU L., LI J., QI J., KONG D., LI X. (2021), "The role of opinion leaders in the sustainable development of corporate-led consumer advice networks: evidence from a Chinese travel content community", *Sustainability*, vol. 13, n. 19, pp. 11128.
- ZAFFIRO M. (2023), "Dai social media al social reading: il ruolo strategico dei book influencer nella comunicazione editoriale e nella diffusione della lettura", *Sistema Editoria*, vol. 1, pp. 139-159.

Websites

- Varsamis, E. (2018), "Are social media influencers the next-generation brand ambassadors?", available at: <https://www.forbes.com/sites/theyec/2018/06/13/are-social-media-influencers-the-nextgeneration-brand-ambassadors/?sh57b1d461473d0>

The effectiveness of communicating food security in Agri-food firms: an exploratory study from the entrepreneurial perspective

EMANUELA CONTI¹ DANIELE GIAMPAOLI² FRANCESCA CESARONI³ TONINO PENCARELLI⁴

Abstract

This study aims to understand how Italian firms in the agri-food sector communicate food safety and how communication impacts business performance. This piece of research is a “work-in-progress” and it is part of a wider research on food security.

A survey was conducted on micro and small agri-food firms and a sample of 149 firms was selected. SEM was performed to understand how these communication tools relate to business performance. We found that both traditional and digital communication tools positively and significantly impact communication performance. However, traditional communication seems to be much more effective.

Keywords: traditional communication; digital communication; business performance; Agri-food; micro and small firms.

Framing of the research. *In this study, we adopted this definition of food security: “the condition of the foodstuffs in all stages of production, processing, and distribution, required to guarantee the protection of consumer’s health, also taking into account normal circumstances of use and information available for the foodstuffs concerned” (Baert et al., 2011). In short, food can be considered safe if it is the result of a combination of primary healthy and controlled resources, with no risk to consumer health.*

Food security is a wide concept that includes not only the compulsory “food security” but is strictly related to well-being and environmental sustainability. Safe food contributes to improving the well-being of individuals and societies and good quality raw materials to manufacture food products contribute to the preservation of soil and climate.

However, the literature on well-being is almost always separated from the literature on environmental sustainability (Roberts et al., 2015) and social sustainability. These two streams of research could be further enriched if they were integrated, taking a more holistic perspective on well-being and an increased awareness of the limits of individual well-being pursuits (Kjell, 2011).

Hence, this study contributes to filling this research gap by adopting a wide definition of food safety, integrating well-being and sustainability.

Consumers are increasingly interested in food safety (Baert et al., 2011) and agri-food companies should improve communication effectiveness to reduce perceived risks (Santeramo & Lamonaca., 2021) and maintain companies’ competitiveness.

Content is a key element of marketing communication, especially in the online environment. Consumers look for useful and interesting content for their needs, interests and expectations. Firms are asked to disseminate content in all communication tools. Content marketing consists of the creation, dissemination and sharing of relevant, interesting and timely content to engage clients in all touch points of the customer journey, with the final scope of conversion (Holliman and Rowley, 2014).

The literature on the communication of agri-food firms is heterogeneous and fragmented as it investigates specific communication tools (website, social network, influencer, etc.) and on specific sectors such as wine, cheese, honey, etc. (Dolan and Goodman, 2017; Ingrassia et al., 2020). More specifically, empirical studies on food safety communication are still rare and those adopting a broad perspective are even more scarce (Conti et al., 2023).

A recent study by Conti et al. (2023) has examined the impact of traditional and digital communication on sales and customer loyalty of SME agri-food firms, adopting the Dynamic Capabilities theory, interpreted as an extension of the RBV theory and suggesting that resources and capabilities interact in determining firm performance outcomes (Henderson and Cockburn, 1996; Teece et al., 1997). They found that corporate websites impact positively both

¹ University of Urbino
e-mail: emanuela.conti@uniurb.it

² University of Urbino
e-mail: daniele.giampaoli@uniurb.it

³ University of Urbino
e-mail: francesca.cesaroni@uniurb.it

⁴ University of Urbino
e-mail: tonino.pencarelli@uniurb.it

engagement and sales, while corporate websites, traditional advertising, PR impact positively sales.

This study takes a marketing perspective and considers marketing resources as the assets available to marketers and others within the organization that – when transformed by the firm’s marketing capabilities – can create valuable outputs (Morgan, 2011). Communication resources and capabilities are considered key marketing capabilities associated with customer value delivery (McKee et al., 1992).

Hence, there is space to understand if these tools allow them to communicate effectively. In particular, this study aims to understand how they impact communication performance, operationalized through brand awareness, customer engagement, lead generation, and sales items. It builds on the theoretical framework of Dynamic Capabilities theory and the studies in marketing literature pointing out the positive impact of effective communication tools on performance.

We assume that effective marketing communication is an important factor in maintaining business success also in the Agri-food sector and that it is crucial to combine digital and traditional communication to be successful. Traditional communication tools include advertising that can be done through print papers such as newspapers, brochures, and magazines, audio media such as radio, and visual media such as billboards and television (Kotler and Armstrong, 2010) and PR (Invernizzi and Romenti, 2020). Main digital communication tools are corporate websites, social networks, and email (Gregori and Pascucci, 2019; Tuten and Solomon, 2018).

Through effective content creation and dissemination, firms can enhance brand awareness, customer engagement, lead generation, and loyalty (Hollebeck and Macky, 2019).

Brand awareness is the first goal of communication, in the pre-purchase phase of the customer journey. Effective communication in this phase contributes to increasing brand awareness (Kim et al, 2003; Aaker, 2010; Sawant, 2012; Ateke and Nwulu, 2017).

With the emergence of social media, customer engagement has become an important goal for reaching superior brand performance (Barger et al., 2016; Oviedo-García et al., 2014). Furthermore, perceived brand interactivity (Gligor et al., 2019b) and satisfaction with the brand (Pansari and Kumar, 2017) positively impact customer engagement. Effective communication is essential for successful lead generation (Poevry et al., 2017) and sales increase (David et al., 1988; Gregori and Pascucci, 2019).

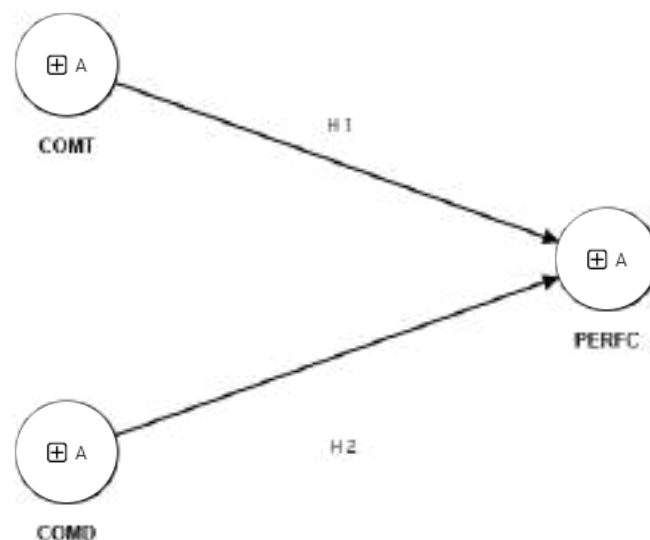
Purpose of the paper. The purpose of the study was to analyze the impact that traditional communication (COMT) and digital communication (COMD) have on communication performance (PERFC). The research question was the following: How much does corporate communication, integrated with the principles and practices of sustainability and food safety, improve the company’s performance?

We hypothesized that:

H1: There is a positive direct relationship between COMT and PERFC;

H2: There is a positive direct relationship between COMD and PERFC.

Figure 1: Research model



Methodology. We collected survey data from January to February 2021 from Italian SMEs. We selected a sub-sample made of 149 micro and small firms, from the representative sample of 900 SMEs from the AIDA database. Our sub-sample uses the following search criteria: number of employees between 1 and 49 available financial statements, active businesses, with available telephone contacts, operating in sectors identified by the ATECO codes 10 - Food industries and 11 - Beverage industries.

Out of 900 firms, 149 took part in the research, representing about 7%. No questionnaires were excluded because they were all filled in. Approximately 54% of the firms employed up to 9 employees while the remaining 46% between 10 and 49 employees.

The questionnaire was administered using two methods: CAWI (Computer Assisted Web Interviewing) and CATI (Computer Assisted Telephone Interviewing). The companies that participated through the CAWI method were 139 (93.2%), while those that participated through the CATI method were 10 (6.8%).

The research model includes three first-order constructs. Measurement scales for COMT were taken or adapted from (Kotler and Armstrong, 2010; Invernizzi and Romenti, 2020). Scales for COMD were taken or adapted from previous work of (Gregori and Pascucci, 2019; Tuten and Solomon, 2018) Finally, PERFC scale was taken from (Barger et al., 2016; Gligor et al., 2019b; Pansari and Kumar, 2017; Poeyry et al., 2017; David et al., 1988)

Measurement scales include the following items:

- COMT: Traditional communication (impersonal communication, such as brochures, advertising in magazines, etc.) personal communication (internal staff and external collaborators) and social or environmental sustainability report.
- COMD: Digital communication (corporate website, social network, email, etc.)
- PERFC: Performance of communication on awareness, engagement, lead generation, and sales.

Results. Internal consistency reliability, convergent validity and divergent validity

We assessed the psychometric properties of scales in terms of reliability, convergent validity and discriminant validity. For reliability test we used Cronbach's Alpha ($\alpha \geq 0.7$) and Dillon-Goldstein's rho ($\rho \geq 0.7$) (Hair et al, 2010). As shown in Table 1 measurement scales have adequate convergent validity (Hair et al, 2010). We assess discriminant validity using both Heterotrait-Monotrait Ratio (Table 2) (Henseler et al., 2015) and Fornell-Larcker criterion (Table 3). No value is above the recommended threshold and discriminant validity is assured.

Table 1: Reliability and convergent validity

Reliability and convergent validity					
Inherent variables	Items	Loadings	Cronbach's alpha	Dillon-Goldstein rho	AVE
COMD			0.775	0.785	0.686
	COMD1	0.818			
	COMD2	0.844			
	COMD3	0.824			
COMT			0.720	0.728	0.640
	COMT1	0.822			
	COMT2	0.802			
	COMT3	0.775			
PERFC			0.921	0.926	0.809
	PERFC1	0.886			
	PERFC2	0.874			
	PERFC3	0.931			
	PERFC4	0.905			

Table 2: Heterotrait-Monotrait Ratio (HTMT)

HTMT			
	COMD	COMT	PERFC
COMD			
COMT	0.883		
PERFC	0.613	0.758	

Table 3: Fornell-Larcker criterion

Fornell-Larcker			
	COMD	COMT	PERFC
COMD	0.828		
COMT	0.667	0.800	
PERFC	0.532	0.626	0.899

Testing of hypothesis

Data were analyzed using PLS-SEM and SmartPLS software (4.1.0.0) (Ringle et al., 2022)

PLS is a structural equation modeling technique widely used in the marketing and management field. It requires a sample size ten times the number of indicators associated with the most complex construct (four in this study) or the largest number of antecedent constructs linking to an endogenous construct (two: COMT, COMD) (Hair et al, 2010). Therefore, the present research model would have been valid with 40 responses. Figure 2 shows the results of the structural model.

Figure 2 – Results of the structural model

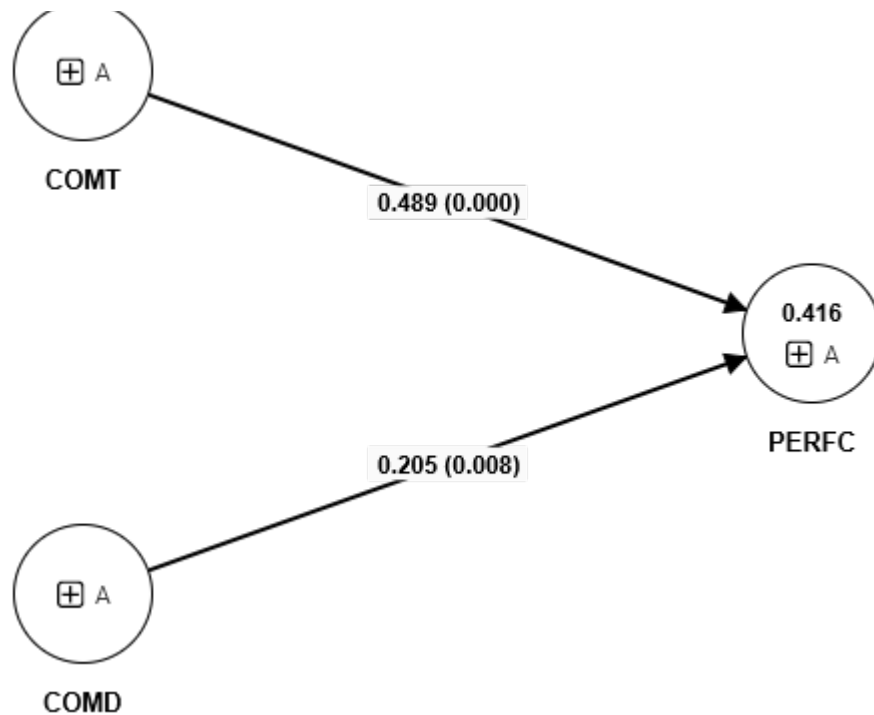


Table 4: Results of the structural model

Hypothesis	Path	Path coefficient	T-value	P-value	Status
H1	COMD -> PERFC	0.205	2.651	0.008	Supported
H2	COMT -> PERFC	0.489	6.417	0.000	Supported

Table 5: Effect size

	f ²
	PERFC
COMD	0.040
COMT	0.228

Discussion and Conclusion

The goal of the present paper is to empirically test the impact that traditional and digital communication tools have on communication performance.

We tested our hypotheses on a sample of 149 Italian SMEs using PLS-SEM and found good parameters for all latent variables.

As shown in Table 4 both hypotheses are supported confirming the theoretical assumption and empirical results.

Table 5 shows the effect size f^2 , that is the change in the value of R^2 when an exogenous construct is omitted, and it is used to understand whether its impact on the dependent variable is substantial or not. Values of 0.02, 0.15, and 0.35 represent small, medium, and large effects, respectively (Hair et al., 2010). As evident from Table 5, the most substantial impact on the PERFC variable is exerted by COMT, confirming that traditional communication tools have a stronger impact on PERFC.

As the sample is made of half of the micro firms and the other half of small firms, most probably entrepreneurs invest more in traditional communication tools for disseminating information about food safety such as personal communication, advertising, environmental reports, or PR such as participation in sector fairs.

Conversely, the adoption of new digital communication tools is still very low, thus confirming the results of previous studies conducted in the agri-food sector. The results of this empirical study show that probably entrepreneurs of small firms lack the digital culture and financial resources that characterize many small businesses.

Research limitations. We created and empirically tested a structural model on a sample of 149 Italian SMEs. We found that both traditional and digital communication have a significant direct impact on communication performance. This study's main limitation concerns its focus on a single European country. The research is a work in progress.

Managerial implications. The research results suggest entrepreneurs in this sector to invest in effective communication as it impacts positively and significantly on communication performance, especially in traditional communication. European and national policymakers should support micro and small firms with marketing training and the recruitment of young personnel with digital marketing skills.

Future research should investigate a larger sample of firms, and identify how each communication tool impacts

communication goals and qualitative research is also required. In particular, it could be interesting to identify best practices for effective communication in the Agri-food sector.

Originality of the paper. This is the first study, to our knowledge, that empirically investigates the relationships between communication of food security and communication performance in the Agri-food sector.

References

- AAKER D.A. (2010), *Building strong brands*. London: Free Press.
- ATEKE B.W., NWULU C.S. (2017), "The brand communication-brand awareness nexus", *Business Master*, vol. 5, n. 1, pp. 210-221.
- BAERT K., VAN HUFFEL X., WILMART O. (2011), "Measuring the safety of the food chain in Belgium: Development of a barometer", *Food Research International*, vol. 44, n. 4, pp. 940-950.
- CONTI E., GABBIANELLI L., PENCARELLI T. (2023), *Food Safety and Communication in Italian Agri-Food Firms*, EISIC Conference, Paisley, Scotland
- HAIR J.F., BLACK W.C., BABIN B.J., ANDERSON R.E. (2010), *Multivariate data analysis. A global perspective*, Pearson, New Jersey, NJ.
- HOLLIMAN G., ROWLEY J. (2014), Business to Business Digital Content Marketing: Marketers' Perceptions of Best Practice, *Journal of Research in Interactive Marketing*, vol. 8, n. 4, pp. 269-93.
- INGRASSIA M., ALTAMORE L., BACARELLA S., COLUMBA P., CHIARONI S. (2020), "The wine influencers: Exploring a new communication model of open innovation for wine producers-A netnographic, factor and AGIL analysis", *Journal of Open Innovation: Technology, Market, and Complexity*, vol. 6, n.4, pp. 165.
- INVERNIZZI E., ROMENTI S. (2020), *Corporate Communication e Relazioni Pubbliche*, McGrawHill.
- GLICOR D.M., BOZKURT S., RUSSO I. (2019), "Achieving customer engagement with social media: A qualitative comparative analysis approach", *Journal of Business Research*.
- KJELL O.N.E. (2011), "Sustainable well-being: A potential synergy between sustainability and well-being research", *Review of General Psychology*, vol. 15, n. 3.
- KIM H., KIM W.G., AN J.A. (2003), "The effect of consumer-based brand equity on firms, financial performance", *Journal of Consumer Marketing*, vol. 20, n. 4, pp. 335-351.
- KOTLER P., ARMSTRONG G. (2010), *Principles of Marketing*, Prentice Hall.
- MORGAN N.A. (2011), "Marketing and business performance", *Journal of the Academy of Marketing Science*.
- POEYRY E., PARVINENS P., MCF R.R. (2017), "Generating leads with sequential persuasion: should sales influence tactics be consistent or complementary?", *Journal of Personal Selling & Sales Management*, vol. 37, n. 2, pp. 89-99.
- ROBERTS L., BROWER A., KERRG., LAMBERT S., MCWILLIAM W., MOORE K., et al. (2015), *The nature of wellbeing: How nature's ecosystem services contribute to the wellbeing of New Zealand and New Zealanders*, Wellington: Department of Conservation, 145.
- RINGLE C.M., WENDE S., BECKER J.M. (2022), "SmartPLS 4." Oststeinbek: SmartPLS GmbH, <http://www.smartpls.com>.
- SANTERAMO F.G., LAMONACA E. (2021), "Objective risk and subjective risk: The role of information in food supply chains", *Food Res. Int.*
- SAWANT R.P. (2012), "Impact of advertising on brand awareness and consumer preference (with special reference to men's wear)", *IOSR Journal of Business and Management*, vol. 5, n. 6, pp. 54-61.
- TEECE D.J., PISANO G., SHUEN A. (1997), "Dynamic capabilities and strategic management", *Journal of Strategic Management*, vol. 18, n. 7, pp. 509-533.
- TUTEN T.L., SOLOMON M.R. (2018), *Social Media Marketing*, SAGE Publications Ltd.

Leveraging Italianness abroad: A corpus-assisted discourse approach to restaurant branding

WALTER SPEZZANO¹ STEFANO DE CANTIS² JOHN D. BUSCHMAN³

Abstract

Brands are carriers of meanings, shaping consumers' perceptions while influencing their behavior through discourse. This study examines restaurant branding from a discourse perspective, specifically focusing on Italian restaurants in Miami-Dade County, Florida, United States. Through a corpus-assisted discourse approach (CADS), the study investigates the use of the "Italianness" tactic in these restaurants' digital brand positioning strategy. Findings reveal that restaurants employing this tactic create highly humanized brands, conveying values such as authenticity, tradition, and high-quality ingredients, among others. This study aims to contribute to existing research at the intersection of branding and discourse while raising awareness among hospitality professionals about the impact that a discourse-based brand strategy and the semiotic power of food on consumer behavior.

Keywords: hospitality; strategic communication; marketing; digital branding; digital discourse; CADS

Framing of the research. Contemporary society is deeply influenced by brands, as they shape cultural, economic, and social practices (Schroeder, 2009). Branding involves and is grounded in discourse (Fitchett & Caruana, 2015), defined by Fairclough (2015) as "a way of construing aspects of the world associated with a particular social perspective" (p. 87). Companies rely on discourse to communicate with the world at large, both internally (e.g., with employees) and externally (e.g., with consumers) (Breeze, 2013). From a marketing perspective, discourse is crucial in brand positioning, described by Keller & Swaminathan (2020) as "the heart of marketing strategy" (p. 47). Effective brand positioning entails understanding the target consumers and recognizing key competitors to find the proper location both in the minds of consumers and in the market, making the brand positively identified and differentiated.

In today's digital world, companies rely on corporate websites to establish their online presence on the Web, influence their audiences, and mediate meanings. Just as physical stores utilize display windows and store design to influence consumer perceptions, so in cyberspace, website visitors form their image of the brand based on the content, design, and organization of the website (Breeze, 2013). Despite today's widespread use of social media, official websites are still regarded as the most important and reliable communication channels for marketing, playing a key role in brand positioning and the subsequent brand image formation, thus influencing consumer behavior (Hallett & Kaplan-Weinger, 2010; Wu, 2018; Yu et al., 2023). More specifically, the "about us" webpage of a corporate website is a pivotal tool for brand positioning (Breeze, 2013), as it is the specific website section where companies disseminate their brand identity. Notably, with advancements in technology, the "about us" content may be found either in its dedicated section of the website, directly embedded in the homepage, or in both locations simultaneously.

In the context of the restaurant business, which is the focus of this paper, digital discourse on restaurant websites includes a food storytelling based on the rhetoric between a specific culture and its culinary rituals (Burton, 2016), which is at the core of restaurant branding. This discourse shapes, in the minds of consumers, positive images of the restaurant products/services, as well as of the restaurant as a company. Consumers are more willing to choose well-known brands with positive attributes, which consequently are perceived as commitments to quality (Dabeva, 2012).

A significant segment of the food and beverage industry worldwide is represented by Italian cuisine. The current globalization processes and Italians' migratory movements have contributed to the global spread of Italian cuisine, as witnessed by the Italian restaurants distributed all over the world (Giampiccoli, 2017). The "Made in Italy" brand evokes attributes in the minds of consumers that positively characterize the perception of Italian products and the image of Italy (Cappelli et al., 2017; Temperini et al., 2016). The relationship between Italy and food is a symbiotic and culturally deep bond; Italy's intricate and illustrious culinary heritage has not only played an integral role in shaping the nation's cultural identity, but it has also left an indelible mark on the global food and beverage landscape. Rooted in centuries of history and regional diversity, Italian cuisine is a fundamental trait of Italianness (Bandini & Corduas, 2019).

¹ University of Palermo, Italy
email: walter.spezzano@unipa.it

² University of Palermo, Italy
email: stefano.decantis@unipa.it

³ Chaplin School of Hospitality & Tourism Management, Florida International University, United States
email: jbuschma@fiu.edu

Discourse investigations of Italianness in the food and beverage industry remain relatively limited. Federici & Bernardelli (2016) carried out a cultural analysis of food discourse in advertising, focusing on how Italian food products are promoted to U.S. consumers and how Italian sounding products are presented in this context. The work edited by Naccarato et al. (2017) examined how representations of Italian food and foodways shape specific ideologies about Italy and Italian culture across different media. Corrizzato (2018) analyzed the promotional representation of made-in-Italy products, focusing on the official websites of Italian wineries. Guzzo & Gallo (2019) investigated Italianness in migration contexts and corporate discourse in food-related practices by analyzing Anglo-Italian food and beverage business managers' replies to negative online reviews. Nichele (2019) and Bandini & Corduas (2019) explored consumer perceptions of Italian restaurants abroad and the image of Italianness held by consumers.

More recent studies have focused on celebrity chefs' food discourse, considering that "chefs have achieved the popularity and status of superstars, as perhaps only pop music singers and actors had in the past" (Rossato, 2022, p. 11). In this regard, Rossolatos (2020) examined how Italy's place brand and Italianness are discursively articulated, (dis)placed, and appropriated in British celebrity chef Jamie Oliver's travelogues. Irimiás & Volo (2022) scrutinized Italian celebrity chef Massimo Bottura's online food discourse, with respect to pro-environmental behavior. Rossato (2022) conducted a cross-cultural diachronic study of food television discourse, focusing on the discursive evolution of mainly British and Italian television cookery programs. Despite the significant relationship between discourse and branding, research within this framework, specifically focusing on Italian restaurants abroad, is still scarce. As little attention has been dedicated to the analysis of the digital brand positioning strategy of Italian restaurants abroad and their use of digital discourse, the present work aims to contribute to filling this gap by focusing on Italian restaurants in Miami-Dade County, Florida, United States (hereafter Miami).

Florida has emerged as a prominent culinary destination, boasting a vibrant and diverse food and beverage scene. Its official destination marketing organization (DMO), Visit Florida, has engaged in marketing efforts with partner DMOs in the state, along with the prestigious Michelin Guide, to collectively promote Florida as a world-renowned culinary destination (Michelin North America, 2021; Visit Florida, 2023). Florida's food and beverage landscape is particularly vibrant in Miami, which has been granted the title of "2023 Food City of the Year" by the esteemed food and beverage publication *Bon Appétit* (Greater Miami Convention & Visitors Bureau, 2023). Miami indeed offers a unique fusion of flavors and culinary traditions that captivate both residents and visitors alike. Italian restaurants in Miami are a significant segment of its food and beverage industry: in February 2024, TripAdvisor recorded the presence of 430 restaurants offering Italian cuisine in Miami out of a total of 6,077 establishments.

Purpose of the paper. This paper is part of a wider ongoing research project, aiming to explore digital branding in hospitality and tourism from a discourse perspective. The project involves collaboration among the University of Palermo (Italy), Florida International University (United States), and Greater Miami Convention & Visitors Bureau (United States).

The purpose of this study is to investigate digital branding in the context of Italian restaurants abroad. Specifically, by focusing on Italian restaurants in Miami, the study examines the use of the Italianness tactic (i.e., emphasizing the Italian brand identity) in the restaurants' strategy of digital brand positioning. The digital discourse used by the restaurants on their corporate websites is analyzed through a corpus-assisted discourse approach.

Methodology. The methodological framework at the core of this paper is Corpus-Assisted Discourse Studies (CADS) (Baker, 2023; Partington et al., 2013), which draws upon the triangulation of Corpus Linguistics (CL) (Brezina, 2018; McEnery & Hardie, 2011) and Critical Discourse Studies (CDS) (Wodak & Meyer, 2015). In CADS research, statistical techniques and software tools are utilized for the collection and analysis of corpora (i.e., large electronic sets of textual data), while adopting a critical stance for a more in-depth analysis of textual data embedded in their co-text and social context. On the one hand, CL provides objective results that reduce the researcher bias. Indeed, "an association between two words, occurring repetitively in naturally occurring language, is much better evidence for an underlying hegemonic discourse which is made explicit through the word pairing than a single case" (Baker, 2023, p. 16). On the other hand, CDS "incorporates critical thoughts into their meaning construction and examines texts together with a broad social context" (Qian et al., 2018, p. 527). Both the computational and the human-led investigations of data are pivotal in CADS research.

In February 2024, Italian restaurants in Miami were surveyed on TripAdvisor, resulting in a population of 430 Italian restaurants out of a total of 6,077 restaurants in Miami. For the purpose of this paper, the label "Italian restaurants" specifically refers to those classified as Italian by TripAdvisor because they offer Italian cuisine. From this initial population of 430 Italian restaurants, a systematic sampling approach yielded a sample of 215. However, 78 restaurants were excluded from the sample due to the unavailability of their corporate websites, resulting in a final sample size of 137 restaurants. Each restaurant's website was meticulously examined by focusing on its homepage and "about us" webpage. This process identified the restaurants employing the Italianness tactic within their digital brand positioning strategy and those which do not employ the tactic. Furthermore, close reading and manual data extraction guaranteed the collection of specific textual data related to the "about us" content and the food storytelling. The textual data extracted from each website were compiled into individual text files, resulting in a one-to-one correspondence between the websites and the text files. Two corpora, whose features are displayed in Table 1, were created by means of #LancsBox (Brezina et al., 2021). The same software was used to analyze the corpora.

Table 1 Corpora features

Corpus	Restaurants	Files	Tokens	Types
corpus_a	Italian restaurants employing the Italianness tactic	91	31,704	5,042
corpus_b	Italian restaurants not employing the Italianness tactic	46	8,928	2,387

A keyword analysis was conducted to investigate the use of the Italianness tactic in the digital brand positioning strategy of the restaurants included in corpus_a. Keyword analysis involves comparing a corpus of interest against a baseline reference corpus, by using a statistical measure, to identify words that occur either more frequently (i.e., positive keywords) or less frequently (i.e., negative keywords) in the corpus of interest when compared to the reference corpus. Corpus_a was chosen as the corpus of interest and corpus_b as the reference corpus, while Cohen's d was utilized as the comparison statistic to measure keyness. A threshold of $s \geq 0.35$ was set, considering the standard interpretation of this effect size measure (Cohen, 1988), which is reported in Table 2. Setting a threshold of $s \geq 0.35$ indicates a focus on identifying keywords with a moderate or higher effect size, which implies a substantial difference in occurrence between the two corpora. In other words, this choice produced keywords that demonstrate a noticeable difference in language usage between corpus_a and corpus_b. Additionally, absolute frequency and the coefficient of variation were utilized to analyze keyword frequency and dispersion, respectively. Both positive and negative keywords were further investigated through concordance analysis, which involves the investigation of keywords embedded in their co-text. Out of the 63 positive keywords identified, 5 were omitted due to lacking semantic relevance. Similarly, out of the 38 negative keywords, 7 were excluded from the analysis. Subsequently, both positive and negative keywords were classified by discourse category, semantically grouped by topic, and analyzed in relation to their social context.

Table 2 Cohen's d: Standard interpretation of effect size

Effect	Cohen's d
Small	0.2
Medium	0.5
Large	0.8

Results. The positive keywords identified in the analysis reveal how restaurants in corpus_a employ the Italianness tactic in their digital brand positioning strategy. Conversely, negative keywords, occurring less frequently in corpus_a but more frequently in corpus_b, are particularly useful for contrasting the two corpora. The analysis revealed keywords belonging to four discourse categories: corporate, food, ideological, and persuasive discourse. Table 3 below shows the keywords characterizing the corporate discourse of Italian restaurants in Miami. In corpus_a, emphasis is placed on the commitment of restaurant staff, highlighting qualities such as cure, passion, dedication, and professionalism. Furthermore, restaurants employing the Italianness tactic often share a history rooted in the migration of past generations from Italy to the United States, often stressing their status as family businesses. In contrast, corpus_b addresses corporate social responsibility (CSR) issues and emphasizes customer benefits, such as time and cost efficiency. Both corpora share keywords related to corporate mission and establishment type. In corpus_a, the corporate mission focuses on addressing customer needs and providing support, while in corpus_b, it emphasizes ensuring customer satisfaction. Keywords defining the types of establishment include "trattoria" in corpus_a and "bar" in corpus_b. The former suggests the idea of a small restaurant serving traditional, home-style dishes, while the latter indicates a potential focus on beverages and lighter food offerings.

Table 3 Keywords of corporate discourse

Keyword	Topic	Cohen's d	Frequency corpus_a	Dispersion corpus_a	Frequency corpus_b	Dispersion corpus_b
passion	commitment	0.47	34.00	2.10	1.00	6.71
dedication	commitment	0.43	11.00	3.27	0.00	0.00
dedicated	commitment	0.38	10.00	3.70	0.00	0.00
curated	commitment	0.37	18.00	3.06	1.00	6.71
passionate	commitment	0.37	8.00	3.79	0.00	0.00
professional	commitment	0.35	8.00	4.06	0.00	0.00
trattoria	establishment	0.42	20.00	3.35	0.00	0.00
moved	history	0.38	7.00	3.77	0.00	0.00
family	history	0.36	110.00	1.56	14.00	2.72
spread	history	0.36	6.00	3.97	0.00	0.00
father	history	0.36	6.00	3.92	0.00	0.00
needs	mission	0.37	9.00	3.83	0.00	0.00
help	mission	0.35	7.00	3.99	0.00	0.00
...	...	...	...	...	...	...
offer	mission	-0.55	26.00	2.55	17.00	-1.66
industry	mission	-0.37	1.00	9.49	4.00	-3.54
satisfaction	mission	-0.36	1.00	9.49	3.00	-3.81
Pickup	benefit	-0.47	1.00	9.49	5.00	-2.95
easy	benefit	-0.41	2.00	7.00	6.00	-3.24
save	benefit	-0.39	2.00	6.72	5.00	-3.25
money	benefit	-0.38	1.00	9.49	4.00	-3.38
curbside	benefit	-0.37	0.00	0.00	3.00	-3.79
credit	benefit	-0.37	0.00	0.00	3.00	-3.79
deals	benefit	-0.35	0.00	0.00	4.00	-4.04
easier	benefit	-0.35	0.00	0.00	4.00	-4.08
convenience	benefit	-0.35	1.00	9.49	3.00	-3.83
community	CSR	-0.40	10.00	3.68	10.00	-2.79
bar	establishment	-0.36	18.00	3.05	19.00	-2.56

The keywords related to food discourse are presented in Table 4. Both corpora contain keywords pertaining to food types, restaurant location, and restaurant offerings. Typical Italian foods such as “pasta” and “desserts” are prominent in corpus_a, while typical American foods like “burger” and “fries” characterize corpus_b. Interestingly, the keyword “pizza” is not among the positive keywords in corpus_a, despite its cultural association with Italian cuisine. A collocation analysis could provide further insights into its discursive use. Within the topic of food types, the keyword “white” is used to qualify specific foods, such as wines, truffle, and onion.

Concerning location, corpus_a emphasizes an elegant experience, while corpus_b focuses on the lounge area, aligning with the idea conveyed by the keyword “bar” in corporate discourse. Both corpora highlight the dining experience in the open-air areas of the restaurants, as the keywords “outside” and “outdoor” indicate.

With regard to the restaurant offerings, the keyword “list” refers to the list of wines offered by the restaurants. The keyword “event” indicates that restaurants in corpus_a position a niche-oriented brand, offering specific types of events (e.g., artistic, philanthropic, sportive, private, etc.). In contrast, the keywords “breakfast” and “power” (the latter referring to power business lunches) suggest that restaurants in corpus_b focus on practical and everyday dining options to cater a broader audience, including business professionals among others.

Additionally, while corpus_b features dietary options as a key element, corpus_a relies on the narrative of food preparation, which enhance customer trust and loyalty, increase perceived value and quality, educates customers about culinary techniques and ingredients, and creates emotional connection by humanizing the brand.

Table 4 Keywords of food discourse

Keyword	Topic	Cohen's d	Frequency corpus_a	Dispersion corpus_a	Frequency corpus_b	Dispersion corpus_b
desserts	food type	0.53	21.00	2.37	1.00	6.71
pasta	food type	0.48	78.00	1.82	4.00	3.62
meat	food type	0.44	13.00	3.20	0.00	0.00
white	food type	0.40	9.00	3.57	0.00	0.00
cheese	food type	0.39	20.00	3.42	1.00	6.71
pastas	food type	0.39	25.00	2.93	1.00	6.71
list	restaurant offering	0.46	19.00	2.48	2.00	4.87
event	restaurant offering	0.37	24.00	3.13	1.00	6.71
prepare	food preparation	0.39	11.00	3.66	0.00	0.00
cooked	food preparation	0.38	13.00	3.68	0.00	0.00
elegance	restaurant location	0.39	10.00	3.60	0.00	0.00
outside	restaurant location	0.35	10.00	4.00	0.00	0.00
...	...	...	...	...	...	...
breakfast	restaurant offering	-0.47	1.00	9.49	10.00	-2.69
options	restaurant offering	-0.46	12.00	3.08	16.00	-2.33
power	restaurant offering	-0.37	0.00	0.00	7.00	-3.84
lounge	restaurant location	-0.38	2.00	6.77	9.00	-3.50
outdoor	restaurant location	-0.36	10.00	3.49	12.00	-2.94
fries	food type	-0.38	1.00	9.49	4.00	-3.48
burger	food type	-0.35	0.00	0.00	5.00	-3.99
...	...	...	...	...	...	...
pizza	food type	-0.33	209.00	1.89	76.00	-1.67

Table 5 below displays the keywords pertaining to ideological discourse. In corpus_a, a set of cultural values integral to Italianness is evident, defining Italian cuisine and recipes as authentic and traditional, and emphasizing the value of sharing the dining experience with friends and family. Conversely, corpus_b does not exhibit keywords conveying cultural values. Both corpora share topics related to the origin and quality of food ingredients and products, although in an unbalanced manner (i.e., 11 keywords in corpus_a and only 2 keywords in corpus_b). In corpus_a, ingredients and products are imported from Italy, with an emphasis on the regional dimension of Italian cuisine, particularly from the South. On the other hand, corpus_b features local ingredients and products. Additionally, restaurants in corpus_a highlight the high quality of their imported ingredients and products, while those in corpus_b emphasize that theirs are not frozen.

Table 5 Keywords of ideological discourse

Keyword	Topic	Cohen's d	Frequency corpus_a	Dispersion corpus_a	Frequency corpus_b	Dispersion corpus_b
italian	origin	1.26	409.00	0.87	17.00	2.21
italy	origin	1.10	96.00	1.26	1.00	6.71
neapolitan	origin	0.43	43.00	2.93	1.00	6.71
imported	origin	0.40	14.00	3.14	1.00	6.71
bolognese	origin	0.40	8.00	3.58	0.00	0.00
italy's	origin	0.39	7.00	3.67	0.00	0.00
southern	origin	0.36	7.00	3.94	0.00	0.00
traditional	cultural value	0.66	65.00	1.79	2.00	4.99
authentic	cultural value	0.62	87.00	1.40	7.00	3.53
cuisine	cultural value	0.54	77.00	1.45	11.00	3.02
tradition	cultural value	0.54	31.00	2.60	0.00	0.00
traditions	cultural value	0.53	27.00	2.54	1.00	6.71
recipes	cultural value	0.46	44.00	2.13	2.00	5.01
sharing	cultural value	0.40	9.00	3.55	0.00	0.00
finest	quality	0.48	17.00	2.92	0.00	0.00
freshness	quality	0.46	12.00	3.05	0.00	0.00
highest	quality	0.37	22.00	3.18	3.00	4.00
selected	quality	0.37	7.00	3.84	0.00	0.00
...	...	...	...	...	...	...
frozen	quality	-0.36	1.00	9.49	5.00	-3.79
local	origin	-0.35	29.00	2.94	17.00	-2.25

The keywords of persuasive discourse are listed in Table 6 and categorized by rhetorical techniques. The following rhetorical devices were identified by Dann (1996) in his investigation of promotional discourse in tourism settings: euphoria, testimony, comparison, languaging, and ego-targeting. Ethos was deeply explored by Breeze (2013), while call to action is typical of the AIDA model (Lewis, 1899, as cited in Manca, 2016; Strong, 1925). Both corpora share euphoria, comparison, and call to action. Euphoria is a property of promotional discourse, involving the use of positive and glowing terms to create a positive frame of what is promoted (e.g., “acclaimed” and “celebrated” in corpus_a; “delicious” and “refreshing” in corpus_b). Comparison uses metaphors and similes to create vivid mental images and evoke emotional connections (e.g., “feed both your appetite and soul” in corpus_a; “just like my Grandma used to cook” in corpus_b). Call to action employs imperatives, whose pragmatic function is not that of giving orders but to encourage consumers to participate in a specific brand experience (e.g., “join us in celebrating Italian cuisine in Miami” in corpus_a; “try some of the local top dishes” in corpus_b). Restaurants in corpus_a position themselves as part of a collective, with prominent figures such as founders and chefs taking center stage. This technique strengthens the corporate ethos (Breeze, 2013) and enhances credibility. Consumers often perceive a group entity as more established and trustworthy compared to an individual one. Additionally, restaurants in corpus_a leverage external validation to bolster a positive image by employing the testimony technique. They showcase, on their websites, the positive reviews written by customers on social media, as showed by keywords reflecting the sentiments of satisfied customers. Furthermore, the rhetorical technique of languaging is evident in corpus_a, utilizing foreign (i.e., Italian) words to evoke exotic qualities associated with products or dishes. A rhetorical technique characterizing corpus_b is ego-targeting, aimed at enhancing audience engagement through direct forms of address.

Table 6 Keywords of persuasive discourse

Keyword	Technique	Cohen's d	Frequency corpus_a	Dispersion corpus_a	Frequency corpus_b	Dispersion corpus_b
group	ethos	0.46	22.00	2.84	1.00	6.71
chefs	ethos	0.42	17.00	2.95	1.00	6.71
founder	ethos	0.36	7.00	3.98	0.00	0.00
chef	ethos	0.35	59.00	2.02	9.00	3.22
truly	euphoria	0.46	15.00	3.05	0.00	0.00
well	euphoria	0.41	40.00	2.07	5.00	3.01
acclaimed	euphoria	0.35	9.00	4.08	0.00	0.00
celebrated	euphoria	0.35	7.00	4.06	0.00	0.00
wonderful	testimony	0.41	15.00	3.44	0.00	0.00
loved	testimony	0.40	10.00	3.55	0.00	0.00
attentive	testimony	0.35	8.00	4.04	0.00	0.00
brings	comparison	0.38	10.00	3.75	0.00	0.00
soul	comparison	0.35	9.00	4.01	0.00	0.00
di	languaging	0.42	38.00	3.35	0.00	0.00
join	call to action	0.41	19.00	2.67	1.00	6.71
...	...	...	...	...	...	...
try	call to action	-0.42	15.00	2.83	14.00	-2.46
order	call to action	-0.40	14.00	3.13	15.00	-2.32
refreshing	euphoria	-0.46	0.00	0.00	5.00	-3.10
delicious	euphoria	-0.43	51.00	2.16	20.00	-1.88
top	euphoria	-0.36	19.00	3.07	12.00	-2.45
your	ego-targeting	-0.38	139.00	1.52	56.00	-1.31
you'll	ego-targeting	-0.35	2.00	7.05	5.00	-3.88
like	comparison	-0.36	31.00	3.45	22.00	-2.19

In conclusion, the analysis reveals significant insights into the digital brand positioning strategy of Italian restaurants in Miami. The Italianness tactic shows four different discourse categories, which emphasize Italian values in corporate, food, and ideological contexts, while relying on specific rhetorical techniques. The restaurants employing the Italianness tactic position strongly humanized brands, conveying values such as authenticity, tradition, and high-quality ingredients.

Research limitations. One limitation of the paper is that it solely focuses on data extracted from corporate websites. This narrow focus may overlook valuable insights that could be gained from other sources, such as social media. A more comprehensive approach incorporating diverse data sources could provide a richer understanding of restaurant branding practices. Moreover, the paper focuses particularly on Italian restaurants in Miami, which may not represent the economic and cultural conditions of other food and beverage businesses and locations.

Another limitation arises concerning the nature of the data since the analysis relies exclusively on textual data. A multimodal analysis of the discourse employed online by Italian restaurants abroad would undoubtedly yield more insightful and accurate findings about their branding practices.

Managerial implications. Overall, the paper informs businesses, particularly Italian restaurants abroad, about the pivotal role of discourse in shaping a positive brand image online.

The work highlights the importance of corporate websites as crucial digital platforms to increase customer loyalty and differentiation in a competitive market. By paying attention to the content, design, and organization of their websites, with a special focus on the “about us” section, restaurants can create a strong online presence and positively influence consumer perceptions. The four identified discourse categories suggest that restaurants can leverage storytelling and narrative techniques to strategically communicate their brand messages. Additionally, by considering the cultural and social dimensions of food, restaurants can tailor their brand strategies with specific culture-based tactics to better engage with their target audiences and create meaningful connections.

Originality of the paper. The paper is strongly interdisciplinary, both theoretically and methodologically, encompassing the disciplines of Management and Organization Studies, Statistics, and Linguistics. By focusing on the

role of discourse in branding practices, the work highlights an original framework to investigate strategic communication. The originality of the paper lies, above all, in its methodology, especially in its application in business contexts. As a matter of fact, the uptake of CADS within the field has not been particularly fervent. Instead, the literature shows an abundance of works relying on exclusively-quantitative forms of textual analysis, which present some significant limitations (Gillings et al., 2024). On the one hand, they often overlook how language shapes perceptions of the world, ignoring issues of meaning. On the other hand, they assume that words operate independently from their co-text and social context, whereas CADS considers these factors as crucial to understand the construction of meaning through language. CADS facilitates both a broad overview of the entire corpus and a detailed examination of subtle linguistic nuances, thus allowing the transition between a macroscopic and microscopic analysis of the data within the same interface. Throughout the investigation, continuous access to the complete documents within the corpus is maintained, using software tools that are relatively user-friendly in terms of IT proficiency required for their use. The application of this methodology in business contexts can be particularly insightful for strategic communication research and practice.

References

- BAKER P. (2023), *Using corpora in discourse analysis*, Bloomsbury.
- BANDINI A., CORDUAS M. (2019), "Italian food perception as a marker of the spread of Italian identity in Germany", in Balirano G., Guzzo S. (eds.), *Food across Cultures: Linguistic Insights in Transcultural Tastes*, Palgrave Macmillan.
- BREEZE R. (2013), *Corporate discourse*, Bloomsbury.
- BREZINA V. (2018), *Statistics in corpus linguistics: A practical guide*, Cambridge University Press.
- BREZINA V., WEILL-TESSIER P., MCENERY A. (2021), *#LancsBox* (version 6.0.) [Computer Software], Lancaster University.
- BURTON K.L. (2016), *You are what you eat: Investigating food discourse and digitally-mediated identities* [Doctoral dissertation], University of Rhode Island.
- CAPPELLI L., D'ASCENZO F., NATALE L., ROSSETTI F., RUGGIERI R., VISTOCCO D. (2017), "Are consumers willing to pay for a 'made in' Italy product? An empirical investigation on 'made in Italy'", *Sustainability*, vol. 9, n. 4, 556.
- COHEN J. (1988), *Statistical power analysis for the behavioral sciences*, Lawrence Erlbaum.
- CORRIZZATO S. (2018), "Made in Italy provides the American market with added value: A linguistic analysis of wine websites", *Iperstoria*, n. 11, pp. 145–155.
- DABEVA T. (2012), "Contemporary characteristics of restaurant branding", *Tourism & Hospitality Management 2012, Conference Proceedings*, pp. 254–261.
- DANN G.M.S. (1996), *The language of tourism: A sociolinguistic perspective*, CAB International.
- FAIRCLOUGH N. (2015), "A dialectical-relational approach to critical discourse analysis in social research", in Wodak R., Mayer M. (eds.), *Methods of Critical Discourse Studies*, SAGE.
- FEDERICI E., BERNARDELLI A. (2016), "Selling Italian food in the USA: Pride, history, and tradition", *Voices in Italian Americana*, vol. 27, n. 2, pp. 11–29.
- FITCHETT J., CARUANA R. (2015), "Exploring the role of discourse in marketing and consumer research", *Journal of Consumer Behaviour*, vol. 14, n. 1, pp. 1–12.
- GIAMPICCOLI A. (2017), "Desserts on 'Italian' franchise restaurants' menus in South Africa", *African Journal of Hospitality, Tourism and Leisure*, vol. 6, n. 4, pp. 1–16.
- GILLINGS M., LEARMONTH M., MAUTNER G. (2024), "Taking the road less travelled: How corpus-assisted discourse studies can enrich qualitative explorations of large textual datasets", *British Journal of Management*, vol. 0, pp. 1–13.
- GUZZO S., GALLO A. (2019), "'Please accept my apologies': English, food, and identity in TripAdvisor discourse", *International Journal of Language Studies*, vol.13, n. 4, pp. 141–158.
- HALLET R., KAPLAN-WEINGER J. (2010), *Official tourism websites: A discourse analysis perspective*. Channel View Publications.
- IRIMIÁS A.R., VOLO S. (2022), "Food discourse: Ethics and aesthetics on Instagram", *British Food Journal*, vol. 125, n. 13, pp. 34–44.
- KELLER K. L., SWAMINATHAN V. (2020), *Strategic brand management: Building, measuring, and managing brand equity* (5th ed.), Pearson.
- MANCA E. (2016), *Persuasion in tourism discourse: Methodologies and models*, Cambridge Scholars Publishing.
- MCENERY T., HARDIE A. (2011), *Corpus linguistics: Method, theory and practice*, Cambridge University Press.
- NACCARATO P., NOWAK, Z., ECKERT, E.K. (2017), *Representing Italy through food*. Bloomsbury.
- NICHELE E. (2019), *All about authenticity? TripAdvisor customer evaluations of an Italian dining experience: The case of lower-scale restaurants in Lancaster, UK* [Doctoral dissertation], Lancaster University.
- PARTINGTON A., DUGUID A., TAYLOR C. (2013), *Patterns and meanings in discourse: Theory and practice in corpus-assisted discourse studies (CADS)*, John Benjamins.
- ROSSATO L. (2022), *Food television discourse: A cross-cultural diachronic approach*, Paolo Loffredo.
- ROSSOLATOS G. (2020), "The supplement at the... saur(r)ce: On Jamie Oliver's (dis)placed global brand identity", *Place Branding and Public Diplomacy*, vol. 16, n. 2, pp. 109–120.
- QIAN J., WEI J., LAW R. (2018) "Review of critical discourse analysis in tourism studies", *International Journal of Tourism Research*, vol. 20, n. 4, pp. 525–537.
- SCHROEDER J.E. (2009), "The cultural codes of branding", *Marketing Theory*, vol. 9, n. 1, pp. 123–126.
- STRONG E. (1925), *The psychology of selling and advertising*, McGraw-Hill.
- TEMPERINI V., GREGORI G.L., PALANGA P. (2016), "The brand made in Italy: A critical analysis", *Management Studies*, vol. 4, n. 3, pp. 93–103.
- WODAK R., MEYER M. (2015), *Critical discourse studies*, SAGE, London.
- WU G. (2018), "Official website as a tourism marketing medium: A contrastive analysis from the perspective of appraisal theory," *Journal of Destination Marketing & Management*, vol. 10, pp. 164–171.
- YU J., DROULERS O., LACOSTE-BADIE S. (2023), "Blowing minds with exploding dish names/images: The effect of implied explosion on consumer behavior in a restaurant context", *Tourism Management*, vol. 98, 104764.

Websites

- GREATER MIAMI CONVENTION & VISITORS BUREAU (2023), <https://www.miamianbeaches.com/press-and-media/miami-press-releases/2023-miami-bon-appetit-food-city-of-the-year>
- MICHELIN NORTH AMERICA (2021), <https://michelinmedia.com/pages/blog/detail/article/c0/a1132/>
- VISIT FLORIDA (2023), <https://visitflorida.app.box.com/s/ifsylp8ycj03ly9512rq1ka2i3pi7sj2>

Strategic Agility in Error Management: Bridging Theory and Practice in Strategic Communication

MARCO BALZANO¹

Abstract

Errors put firms' capabilities to critical tests. The present research delves into the role of strategic agility in the pursuit of effective error management strategies. By integrating strategic agility and error management literature, the analysis illuminates on how resource fluidity, leadership unity and strategic sensitivity are key in each phase of error management strategies, encompassing error detection, error communication, and damage control. Through a historical analysis, the present study examines the Samsung's strategic moves post the Galaxy Note 7 malfunctions reported by various consumers in August 2016. The study reveals that the three core components of strategic agility indeed facilitated the Samsung's recovery from the initial error. The findings extend strategic agility discourse beyond prompt adjustments to the external environment, highlighting its potential in proactive internal error management. Framing strategic agility as a response mechanism to an internal error, this study underscores the necessity of cultivating the three capabilities associated with strategic agility to be prepared to effectively cope with an error, offering a novel perspective on how to firms can deal with an error and how to navigate crisis periods sometime activated by such an error. In this perspective, the present study sheds lights on the nexus between theory and practice in strategic communication, providing insights on how strategic agility can foster an organizational culture that openly cope with an error through tailored actions and consistent communication strategies.

Key words: error management; strategic agility; strategic communication; error detection; error communication; damage control.

Framing of the research. This research is situated at the intersection of error management and strategic agility literature. Error management literature suggests that the way organizations perceive, handle, and learn from an error is crucial to their adaptability and performance (Akgün et al., 2022; Lei and Naveh, 2023). Central to this debate is the idea that an error, while sometimes inevitable (and sometimes not even promptly recognized as such), can be managed, and possibly open valuable learning opportunities (Frese and Keith, 2015; Van Dyck et al., 2005).

As error management scholars identified, there exist three main phases characterizing an effective error management strategy: error detection, error communication, and damage control (Frese and Keith, 2015; Lei and Naveh, 2023). Specifically, once an error occurred, error detection is the first phase in the error management process. This phase is critical as an undetected error cannot be corrected or learned from. Effective error detection mechanisms include monitoring systems, regular audits, and a culture that encourages reporting without fear of punitive consequences. The literature emphasizes the importance of creating an organizational climate that supports vigilance and openness, facilitating the early detection of an error (Edmondson, 1999; Tucker and Edmondson, 2003).

After that an error is detected, the next phase is error communication, which involves the dissemination of information about the error to relevant stakeholders of the organization. Effective communication ensures that the error is understood and that corrective actions can be taken. This requires clear channels of communication and a culture that values transparency over blame. Research highlights the role of psychological safety in promoting open dialogue about an error, enabling teams to address and resolve issues more effectively (Edmondson, 2004).

Damage control includes the actions taken to mitigate the negative consequences of an error. In this phase, firms undertake immediate corrective actions to rectify the identified error and prevent its reiteration. Damage control often involve analyzing the root causes of an error, implementing changes to processes or systems, and providing training or resources to avoid similar errors in the future. In this perspective, the literature underscores the importance of resilience and adaptability in this phase, as organizations must quickly adjust to correct an error and minimize its impact (Desjardine et al., 2019; Weick and Sutcliffe, 2007).

From a holistic management perspective, it is evident that firms entering error management strategies should be equipped with multiple capabilities to effectively cope with an error. For example, during the error detection phase, firms should be capable to rapidly address possible stakeholder concerns, to reallocate resource functionally, and to deliver consistent messages to their audience, indicating a shared concern for an incurred error. As well, management should

¹ University of Ca' Foscari Venezia
e-mail: marco.balzano@unive.it

prove internal cohesiveness during the other two phases of error management strategies, while remaining sensitive toward the issue, for example regularly updating them on the error management progresses. Moreover, beyond inspecting the nature of the error, which can thus require resource mobilization, resource demanding activities for supporting key stakeholders and internally reconfigure may be necessary.

Consistently, the present study argues that firms willing to effectively cope with an incurred error should possess the three capabilities related to strategic agility. Strategic agility is increasingly recognized as a central tool for firms operating in dynamic and uncertain environments (Doz, 2020; Doz and Kosonen, 2008). This concept encompasses a firm's capacity to swiftly adapt, pivot, or realign its strategic directions and operational processes in response to emerging challenges and opportunities (Doz and Kosonen, 2008; 2010). Strategic agility necessitates the activation of response mechanisms to changes in external business landscape, coupled with an internal capability to enact change efficiently and effectively. The literature conceptualized strategic agility around three meta-capabilities: strategic sensitivity, leadership unity, and resource fluidity (Doz and Kosonen, 2010; Fourné et al., 2014; Tarba et al., 2023; Weber and Tarba, 2014). Each of these capabilities plays a critical role in enabling a firm to navigate the complexities of a rapidly evolving business landscape.

Strategic sensitivity involves a firm's ability to perceive and interpret a situation with acuteness and accuracy (Doz, 2020; Tarba et al., 2023). This capability requires a robust process of continuous sense-making, where strategic insights are gleaned in real-time and used to inform decision-making. The development of strategic sensitivity hinges on fostering a prompt and fresh mindset within the organization, encouraging broad participation in the strategy process to leverage diverse perspectives. Leadership unity refers to the capacity of leadership to make rapid and cohesive decisions (Doz and Kosonen, 2010; Morton et al., 2018). This unity is crucial for overcoming the inertia and resistance that can plague decision-making processes, especially in times of uncertainty. Resource fluidity indicates the firm's agility in reallocating and reconfiguring its resources in response to changes (Heracleous et al., 2023; Doz and Kosonen, 2010). This capability is functional for enabling the organization to adapt its operational processes and business models swiftly. Resource fluidity is enhanced through flexible resource allocation processes, effective people management, and fostering a culture of adaptability.

Despite the established importance of strategic agility in enabling firms to adapt to external changes, there has been limited exploration of its role in internal error management. Error management is critical for organizational learning and resilience, yet the mechanisms through which strategic agility can enhance error correction remain underexplored. Indeed, the integration of strategic agility into error management strategies offers a promising avenue for research. For instance, strategic sensitivity can enhance a firm ability to detect an error early and respond proactively. By fostering an environment where insights and feedback are continuously gathered and analyzed, firms can identify potential errors before they escalate into more significant issues. Similarly, leadership unity is critical for effective error management. When an error is detected, swift and decisive action is often required to mitigate their impact. Leadership unity ensures consistent organizational signals to the outside, without being hampered by indecision or internal conflict. Finally, resource fluidity enables the organization to adapt its operations in response to an identified error. By reallocating resources efficiently, the firm can address the root causes of errors and implement changes to prevent their recurrence.

Purpose of the paper. The purpose of this paper is to critically assess the role of strategic agility in error management within strategic communication frameworks. It delves into how the three capabilities associated with strategic agility—strategic sensitivity, leadership unity, and resource fluidity—enhance error management across error detection, error communication, and damage control phases. Integrating strategic agility with the strategic communication debate, especially focusing on error management, the study sheds light on the significance of adept, adaptable responses and the role of communication strategies in error mitigation, spotlighting the necessity for organizations to swiftly detect, correct, and communicate an error to maintain stakeholder trust. This exploration offers insights into leveraging strategic agility for strategic communication efforts, advancing practices in dynamic environments and providing a holistic perspective on navigating strategic communication challenges.

Methodology. The applied methodological framework employs a multi-source triangulation approach, analyzing various archival and secondary data pertaining to Samsung's Galaxy Note 7 case. This encompasses an in-depth review of internal reports, press releases, news articles, and social media discourse, aiming to capture a comprehensive view of the case management. Integrating single case study methods (Eisenhardt and Graebner, 2007; Siggelkow, 2007; Yin, 2017), with an interpretive historical analysis (Foster et al., 2017; Vaara and Lamberg, 2016; Wadhvani and Decker, 2017), the study focuses on source analysis to deconstruct public narratives and media engagements related to the case. This strategy facilitates a nuanced examination of Samsung's strategic response, highlighting the firm leverage of strategic sensitivity, leadership unity, and resource fluidity in addressing the incurred error. The analysis is further enriched through discussions with academic and industry experts, ensuring a robust interpretation of the data. This methodological approach allows for exploring the intricate processes of error detection, public acknowledgment, and strategic recalibration employed by Samsung, thereby illuminating the role of strategic agility in coping with the error and initiating recovery.

As far as it regards the context for the analysis, key historical and technical details are reported as follow. In a notable event during August of 2016, Samsung, market leader in the mobile phone industry, unveiled the Galaxy Note 7 in New York. This launch was anticipated to further cement Samsung's dominant position in the smartphone innovation. However, the trajectory of the Galaxy Note 7 took an unforeseen downturn shortly after its release to the market on the 19th of August. By the 24th of August, the initial instance of the device exploding was reported, sparking significant safety concerns surrounding the product. The gravity of these concerns was intensified when, on the 29th of August, a video

showcasing a damaged Galaxy Note 7 circulated on YouTube, escalating public alarm over the issue. A statement from a Samsung representative disclosed that the distribution of the Galaxy Note 7 was being postponed conducting further quality assurance tests.

In response to these episodes, Samsung embarked on a global recall on the 2nd of September. This situation escalated with a formal recall in the U.S. on September 15, alongside a program for battery replacement. In the wake of a prohibition by the US Department of Transportation against the carriage of the Galaxy Note 7 on flights, Samsung deployed personnel to airports to assist consumers and collect the devices, aiming for a complete recall. Within a span of less than three months, the firm achieved a global return rate of 96 percent.

On October 10, 2016, Samsung formally acknowledged the critical nature of the issue, announcing a cessation of sales and a voluntary recall of the Galaxy Note 7. This action was supported by the involvement of regulatory bodies worldwide, including the U.S. Consumer Product Safety Commission, and major carriers ceased the sale and exchange of the device, prioritizing consumer safety. Samsung's statement to the Seoul stock exchange emphasized the decision to discontinue the Galaxy Note 7 was taken with consumer safety as the paramount concern. Also, Samsung launched a refund and exchange program in the U.S. on October 13, offering remedies to affected customers while maintaining transparent communication with its stakeholders.

The repercussions of this issue were manifested, for example, in a decline in the smartphone sales for the quarter ending December 31, 2016, as compared to the preceding quarter. Samsung's business report from December 31, 2016, reflects a commitment to prioritizing consumer safety and innovation, detailing the implementation of comprehensive safety measures and the establishment of a dedicated safety verification team to avert similar incidents.

The technical challenges that led to the Galaxy Note 7 safety incidents were fundamentally rooted in the lithium-ion batteries' design and manufacturing flaws. At the core of the issue were internal short circuits and the propensity for thermal runaway, conditions that can lead to overheating, combustion, or explosions in such batteries. Lithium-ion batteries, which consist of positive and negative electrodes separated by an electrolyte, rely on this architecture for energy storage and release. However, the compactness of this design leaves minimal margin for error, as any breach in the separator or the introduction of metal particles can create a direct electrical pathway between the cathode and anode. This can cause rapid heat generation, culminating in hazardous outcomes.

For the Galaxy Note 7, these safety risks materialized due to specific technical shortcomings in the batteries supplied by SDI and ATL. The SDI batteries were found to suffer from internal short circuits, potentially caused by damaged or deformed electrodes and overly long negative electrodes. These defects could lead to bending and breaching of the separator, facilitating a short circuit. Similarly, the ATL batteries were compromised by the absence of insulation tape and the presence of protruding weld points, which could also pierce the separator or exert excessive pressure, resulting in short circuits.

Subsequent efforts by Samsung to address the issue included a detailed technical report presented on January 23, 2017, which elucidated the battery-related causes of the Note 7 incidents. This report was part of Samsung's broader commitment to enhancing product safety, evidenced by the establishment of an 8-Point Battery Safety Check and the formation of a Battery Advisory Group to ensure ongoing evaluation and improvement of battery safety standards.

By March 31, 2017, Samsung had managed to recover its smartphone sales to levels surpassing those prior to the Galaxy Note 7 incident. The launch of the Galaxy Note 8 on September 15, 2017, signified a new phase for Samsung, characterized by a renewed focus on quality and safety, alongside strategic investments in safety technologies and brand repositioning efforts.

Results. Utilizing strategic agility as a response mechanism to cope with the Galaxy Note 7 case, Samsung displayed a multi-faceted approach to error management, structured around three pivotal phases: error detection, error communication, and damage control.

At the outset, during August 2016, Samsung exercised strategic sensitivity, rapidly acknowledging stakeholder concerns following the initial reports of the Note 7's safety issues. A swift decision to halt shipments for additional quality assessments reflected the firm's immediate concern for consumer safety and brand reputation. In parallel, Samsung demonstrated resource fluidity by reallocating financial and human resources to bolster quality control and enhance customer service capabilities, which was pivotal for the initial recovery process. Leadership unity was evident as Samsung delivered clear and consistent messages, reflecting a concerted signal of concern and a commitment to resolution.

In the subsequent phase, during September 2016, Samsung's strategic sensitivity was marked by the proactive implementation of recalls, signaling an acute awareness of consumer perspectives and a readiness to address their safety concerns. Resource fluidity was manifested in the logistical coordination of the product recall, including the mobilization of employees and rapid technical updates to mitigate risks. Leadership unity during this phase was characterized by a unified public response from executives, setting clear objectives for the recall and ensuring alignment across the firms' various departments and regions.

Samsung's actions during the damage control phase (October 2016 – September 2017) reflected an integrated application of strategic agility's core capabilities. Strategic sensitivity was observed in the regular updates provided to the public and the formation of a Battery Expert Advisory Group to advise on safety and innovation. Resource fluidity was demonstrated by the extensive mobilization of research and development teams and the reallocation of resources towards R&D and safety investments. Leadership unity was evidenced by the clear and transparent communication from

the top executives, the strategic reprioritization of the firm's objectives, and the concerted effort to enhance the brand's focus on quality and safety.

Throughout all the phases, Samsung's approach to error management was marked by a commitment to transparency, customer safety, and quality assurance. The integration of strategic agility enabled the firm to navigate the complexities of the issue effectively, ensuring that both the immediate response and the long-term strategic realignment were handled with precision. This case illustrates how strategic agility can be a response mechanism for managing an internal error, with each phase of the error management process benefiting from the three capabilities underpinning strategic agility, namely strategic sensitivity, leadership unity, and resource fluidity.

Research limitations. This study, while offering new insights from the integration of strategic agility literature into error management strategies, acknowledges a number of limitations. Firstly, the reliance on a single case study, although in-depth, may limit the generalizability of the findings across different industries and organizational contexts. Future research could address this by examining a broader range of cases across various sectors. Secondly, the historical analysis approach might not capture the real-time decision-making processes and the dynamism of strategic agility in action. Incorporating longitudinal studies or real-time tracking of strategic decisions could provide additional depth. Lastly, the focus on strategic communication as a mechanism for error management may overlook other critical factors such as internal dynamics that may also play significant roles in the strategy process.

Managerial implications. The findings of this study hold practical implications for practitioners aiming to enhance their firms' strategic agility and, accordingly, their error management strategies. Firstly, cultivating an organizational culture that prioritizes strategic sensitivity, leadership unity, and resource fluidity can significantly improve error detection, communication, and damage control processes. Managers should invest in systems and training that encourage open communication and swift response to an error. Secondly, the case of Samsung underscores the importance of a unified leadership approach in navigating the incurred error, suggesting that leadership development programs should emphasize agility, consensus-building, and strategic decision-making. Lastly, the study highlights the need for organizations to maintain flexibility in resource allocation, suggesting that managers should regularly review and adjust resource deployment strategies to support rapid response to an error and market changes. Implementing these strategies can help organizations to manage an error more effectively, and possibly turn potential crises into learning opportunities.

Originality of the paper. This paper contributes to the existing literature by integrating strategic agility with error management within the context of strategic communication. By focusing on the Samsung Galaxy Note 7 case, this study illustrates how strategic sensitivity, leadership unity, and resource fluidity can collectively enhance an organization's ability to manage an error effectively. Unlike previous research that primarily examines strategic agility in the context of external environmental adaptation, this study highlights its significance in internal error management and strategic communication. This original contribution extends the discourse on strategic agility and provides a nuanced understanding of its application in critical situations, offering insights for both scholars and practitioners in the field of strategic management.

References

- AKGÜN A.E., KESKIN H., GÖLGEÇİ İ., ÖZERDEN S.S. (2022), "Error management in new product development teams", *Technology Analysis & Strategic Management*, vol. 34, n. 10, pp. 1202-1214.
- DESJARDINE M., BANSAL P., YANG Y. (2019), "Bouncing back: Building resilience through social and environmental practices in the context of the 2008 global financial crisis", *Journal of Management*, vol. 45, n. 4, pp. 1434-1460.
- DOZ Y. (2020), "Fostering strategic agility: How individual executives and human resource practices contribute", *Human Resource Management Review*, vol. 30, n. 1, 100693.
- DOZ Y., KOSONEN M. (2008), "The dynamics of strategic agility: Nokia's rollercoaster experience", *California Management Review*, vol. 50, n. 3, pp. 95-118.
- DOZ Y., KOSONEN M. (2010), "Embedding strategic agility: A leadership agenda for accelerating business model renewal", *Long Range Planning*, vol. 43, n. 2-3, pp. 370-382.
- EDMONDSON A. (1999), "Psychological safety and learning behavior in work teams", *Administrative Science Quarterly*, vol. 44, n. 2, pp. 350-383.
- EDMONDSON A. (2004), "Learning from failure in health care: Frequent opportunities, pervasive barriers", *Quality and Safety in Health Care*, vol. 13, n. 2, pp. 3-9.
- EISENHARDT K.M., GRAEBNER M.E. (2007), "Theory building from cases: Opportunities and challenges", *Academy of Management Journal*, vol. 50, n. 1, pp. 25-32.
- FOSTER W.M., CORAIOLA D.M., SUDDABY R., KROEZEN J., CHANDLER D. (2017), "The strategic use of historical narratives: A theoretical framework", *Business History*, vol. 59, n. 8, pp. 1176-1200.
- FOURNÉ S.P., JANSEN J.J., MOM T.J. (2014), "Strategic agility in MNEs: Managing tensions to capture opportunities across emerging and established markets. *California Management Review*, vol. 56, n. 3, 13-38.
- FRESE M., KEITH N. (2015), "Action errors, error management, and learning in organizations", *Annual Review of Psychology*, vol. 66, pp. 661-687.
- HERACLEOUS L., TARBA S.Y., GONZALEZ S.A. (2023), "Strategic agility through strategic networks: the role of trust and tacit knowledge", *Strategic Management Journal*, vol. 44, n. 4, pp. 745-764.
- LEI Z., NAVEH E. (2023), "Unpacking Errors in Organizations as Processes: Integrating Organizational Research and Operations Management Literature", *Academy of Management Annals*, In Press.
- MORTON J., SNOWDON B., GOUSSEON C. (2018), "Leadership unity and strategic agility in complex organizations", *Leadership & Organization Development Journal*, vol. 39, n. 5, pp. 620-635.

- SIGGELKOW N. (2007), "Persuasion with case studies", *Academy of Management Journal*, vol. 50, n. 1, pp. 20-24.
- TARBA S.Y., AHAMMAD M.F., JUNNI P., STOKES P., MORAG O. (2023), "Strategic agility and firm performance: The role of a flexible IT infrastructure and compatibility with the corporate strategy", *International Journal of Information Management*, vol. 43, n. 1, pp. 102-116.
- TUCKER A.L., EDMONDSON A.C. (2003), "Why hospitals don't learn from failures: Organizational and psychological dynamics that inhibit system change", *California Management Review*, vol. 45, n. 2, pp. 55-72.
- YIN R.K. (2017), "Case Study Research and Applications: Design and Methods", Sage Publications, London.
- VAARA E., LAMBERG J.A. (2016), "Taking historical embeddedness seriously: Three historical approaches to advance strategy process and practice research", *Academy of Management Review*, vol. 41, n. 4, pp. 633-657.
- VAN DYCK C., FRESE M., BAER M., SONNENTAG S. (2005), "Organizational error management culture and its impact on performance: A two-study replication", *Journal of Applied Psychology*, vol. 90, n. 6, pp. 1228-1240.
- WADHWANI R.D., DECKER S. (2017), "Clio's Toolkit: The Practice of Historical Methods in Organizational Research", In *Routledge Companion to Qualitative Research in Organization Studies*, edited by R. Mir and S. Jain, pp. 113–127, New York: Routledge.
- WEBER Y., TARBA S.Y. (2014), "Strategic agility: A state of the art introduction to the special issue on strategic agility", *California Management Review*, vol. 56, n. 3, pp. 5-12.
- WEICK K.E., SUTCLIFFE K.M. (2007), "Managing the unexpected: Resilient performance in an age of uncertainty", 2nd Edition, Jossey-Bass.

Track 11
Strategy & Governance

Do executive actions reflect their personality traits?: A review of organizational misconduct

PIERLUIGI GIARDINO¹ ANDREA CAPUTO²

Abstract

This study endeavors to delve into the personality traits that contribute to ineffectual management practices within companies, concentrating specifically on key decision-makers such as CEOs and other top-tier management personnel. It is underpinned by two established theoretical frameworks: the Upper Echelon Theory and the Theory of Planned Behavior. Furthermore, this research adopts a meticulous approach to systematically gather, assess, and analyze existing knowledge, with the dual goal of establishing a thorough research agenda. Consequently, upon completion, this study promises to offer valuable insights for scholars, professionals, investors, policymakers, and stakeholders alike.

Keywords: irresponsible management, corporate misconduct, apical decision makers, systematic literature review, research agenda

1. Introduction

In a context of increasing emphasis on firms' commitment to a positive and sustainable impact on society, incidents of irresponsible management - defined as "activities and actions that organizational members engage in to deceive or swindle investors or other key stakeholders, including acts that violate laws or regulations or that are legal but considered morally wrong,

such as earnings management, financial statement or other accounting fraud, regulatory violations, actions that result in class action lawsuits, and anti-competitive actions, potentially harming firm stakeholders, eliciting negative reactions from those stakeholders, and being perceived as reasonably avoidable" (Neville et al., 2019; p. 2541) - generate always great perplexity. In the last decades, notable examples include Enron, Volkswagen, Boeing, Theranos, Wells Fargo, Lehman Brothers, WorldCom, France Telecom, Tyco International, Wirecard, Parmalat, FTX, Goldman Sachs and many others.

Comprehending why firms act irresponsibly poses a significant challenge. However, by examining the behavior of apical decision-makers (i.e., top managers, executives, and entrepreneurs), it is possible to gain valuable insights, as they hold the ultimate authority in resource allocation, shaping organizational culture, managing stakeholder relationships, setting strategic visions, handling risks, and addressing legal and ethical concerns. To do so, this article is grounded in the Theory of Planned Behavior (TPB) by Ajzen (1991), which posits that individuals' intention to pursue a specific action is influenced by their behavioral, normative, and control beliefs, moderated by skills and environmental constraints. Thus, grounding in TPB is helpful to engage in a comprehensive exploration of the various dimensions influencing apical decision-makers misconduct (i.e., psychological, behavioral, and socio-demographic factors), while also accounting for contextual elements such as culture, incentives, regulations, competition, board structure, and the role of other stakeholders.

Among the various dimensions under consideration, the psychological one presents the most challenging issues given its nature. Notably, within this complex realm, the enduring nature of personality traits makes them pivotal when dealing with the inclination towards misconduct. This holds because personality traits are "relatively stable, consistent, and enduring internal characteristics inferred from patterns of behaviors, attitudes, feelings, and habits in individuals [they prove] useful in summarizing, predicting, and explaining an individual's conduct" (American Psychological Association, 2023a). However, understanding and evaluating the role of personality traits face substantial theoretical and practical constraints. For instance, scholars encounter difficulties in directly assessing the personality traits of top decision-makers (Van Scotter, 2020), leading them to overemphasize easily accessible traits such as narcissism (Borgholthaus et al., 2023). Additionally, the lack of a clinical psychology background among these scholars (Van Scotter and Roglio, 2020) has resulted in the analysis of specific traits separately rather than as part of a complex biopsychosocial system (Garcia, 2020).

¹ University of Trento
e-mail: pierluigi.giardino@unitn.it

² University of Trento
e-mail: andrea.caputo@unitn.it

Despite these challenges, recent advancements in unobtrusive assessment techniques, such as videometric, paralinguistic, and text analyses (Petrenko et al., 2016; Harrison et al., 2019, Marrero et al., 2022), offer promising solutions for scholars to address and overcome these limitations, thus reinvigorating this field of research. Yet, these research avenues are not exempted from challenges and critical flaws, consequently, this paper aims to address the following research questions paving the way for future scholars: What is the role of personality traits as catalyst for apical decision-makers' irresponsible management? and What is the current state of knowledge in this field of research?

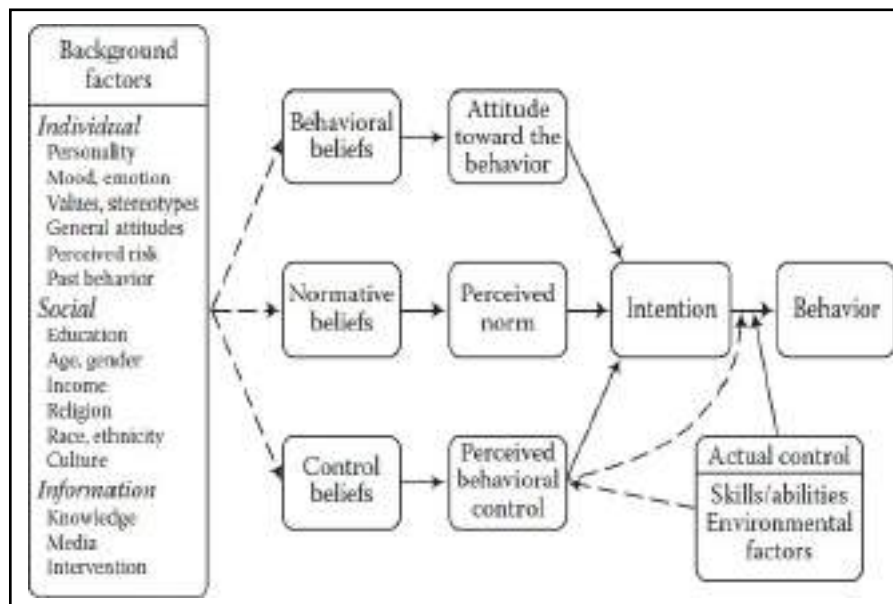
To tackle these questions, this study is based upon a systematic literature review (SLR) of 36 articles published between 2002 and 2023 providing a fine-grained assessment of the current knowledge on this field of research. Within the following sections, this study meticulously examines the theoretical underpinnings, elucidates the methodological approach, engages in a comprehensive discussion of the state-of-the-art literature, and formulates a research agenda.

2. Theoretical background

2.1 Theory of Planned Behavior

Grounded in social psychology, the Theory of Planned Behavior (TPB) (Ajzen, 1991; Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980) posits that intention to perform a behavior stems from attitude, subjective norm, and perceived behavioral control (Ajzen, 1991, p. 188). Background factors indirectly shape intentions and behaviors (Ajzen & Fishbein, 2005; Ajzen, 2011), with TPB serving to elucidate these influences (Ajzen, 2020, p. 318).

Figure 1 Theory of Planned Behavior (Ajzen and Fishbein, 2005).



TPB's versatility is evident in its application to various management topics, including unethical decisions. Carpenter and Reimers (2005) studied managers' decisions to violate accounting standards, while Kulik et al. (2008) examined factors influencing ethical behavior. Cohen et al. (2010) linked individual managers' psychological aspects to fraud opportunities. Egor et al. (2022) used TPB to explore unethical practices among CEOs and crony directors.

2.2 The role of personality considering the Theory of Planned Behavior

Personality, a crucial determinant of intention, encompasses interconnected behavioral, cognitive, and emotional traits shaping individuals' adaptation to life (Ajzen, 2011; American Psychological Association, 2023b). These enduring patterns of thoughts, feelings, and behaviors influence how individuals perceive and respond to various situations (American Psychological Association, 2023a). Psychologists categorize these traits into broad factors like the Big Five or Dark Triad, understanding that individuals exhibit varying levels of each trait (Garcia, 2020). These trait configurations yield distinct cognitive, emotional, and social responses.

The Theory of Planned Behavior (TPB) offers a valuable framework for exploring the interplay between personality traits and behavioral outcomes. For instance, in organizational contexts, decision-makers high in conscientiousness tend to comply with rules due to their positive attitude towards them. Those high in extraversion may be swayed by normative influence, while those high in neuroticism may struggle with emotional regulation, impacting their behavior under stress. Studying personality traits associated with unethical management sheds light on the dark side of top management behaviors and their influence on corporate misconduct.

3. Methodology

3.1 Research design

To ensure a rigorous, transparent, and replicable review of existing knowledge, as well as to enhance the legitimacy of our findings, we opted for conducting a systematic literature review (SLR) (Tranfield et al., 2003). This methodological choice allows us to synthesize all relevant evidence, effectively mapping and evaluating the current intellectual landscape. This, in turn, enables us to refine existing theoretical foundations and develop an agenda to move ahead in this research domain (Fan et al., 2022).

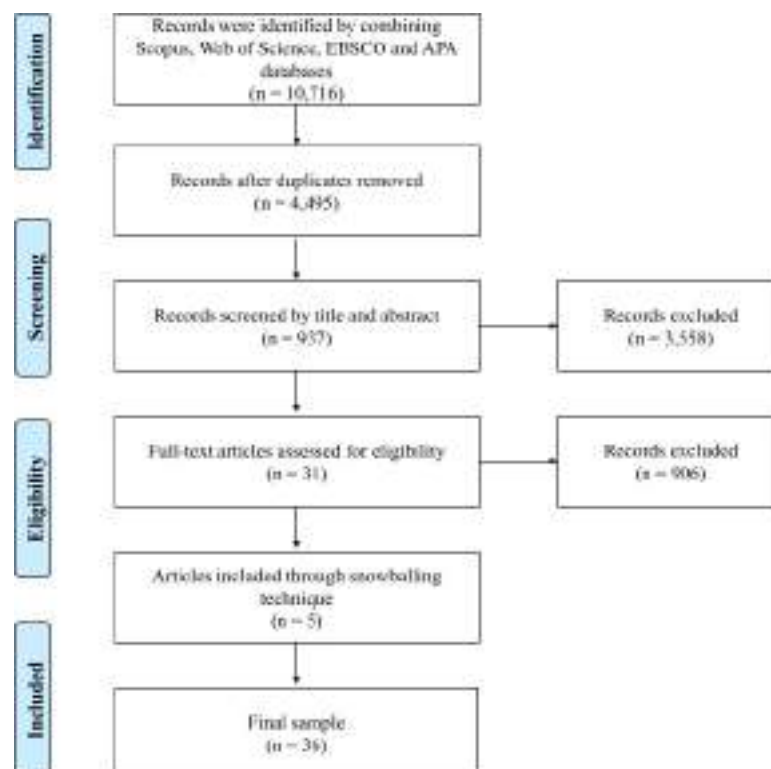
3.3 Article collection

By using the query string (see Table 1) we proceed with article collection. The flowchart illustrated in Figure 2 shows that the research began with a broad search across databases, yielding 4,495 articles in business, management, and accounting. After screening titles and abstracts, 937 relevant articles remained. Full-text examination, guided by strict inclusion criteria, narrowed the selection to 31 pertinent articles addressing corporate governance, organizational misconduct, and personality traits in top decision-makers, all peer-reviewed. Further scrutiny of referenced works identified four additional articles meeting the criteria, resulting in a final sample size of 36.

Table 1 Strings of keywords.

Area	Keywords
Corporate governance	"entrepreneur*", "own*", "found*", "president*", "direct*", "lead*", "senior*", "executive*", "Chief*", "C*O", "CAO*", "CCO*", "CDO*", "CEO*", "CFO*", "CIO*", "CMO*", "COO*", "CRO*", "CSO*", "CTO*", "top manage*", "TMT*", "board*", "c suit*", "c level*", "upper echelon*", "chair*", "white collar"
Personality traits	"personality trait*", "personalit*", "trait*", "Machiavelli*", "psycopath*", "narcissis*", "sadis*", "sociopath*", "darkpersonalit*", "dark triad", "dark tetrad", "dark core", "Mach IV", "machiavellian personality scale", "MPS", "narcissistic personality inventory", "NPI", "hare", "psychopathy checklist", "PCL", "self-report psychopathy", "SRP III", "conscientious*", "agreeable*", "neurotic*", "extr?version*", "big five", "FFM", "overconfiden*", "antagonis*", "antisocial*", "deceit*", "dishonest*", "fraud*", "assertive*", "aversive*", "impulsive*", "manipulative"
Business ethics	"abus*", "bribery*", "cheat*", "collusive*", "corrupt*", "crim*", "deceit*", "dishonest*", "embezzl*", "fraud*", "gambl*", "harm*", "illegal*", "immoral*", "inside*", "investigat*", "irresponsib*", "launder*", "lawsuit*", "manipulat*", "negligen*", "penal*", "sanction*", "scandal*", "theft*", "transgressi*", "unauthoriz*", "unethic*", "violat*", "wash*", "whistleblow*", "wrongdo"

Figure 2 Papers' collection strategy (Author's own elaboration).



4. Results

4.1 Preliminary analyses

We followed the method by Caputo and Kargina (2022) to extract and merge the data regarding the 36 (34 articles and 2 reviews) contributions, enabling then an in-depth analysis using the Bibliometrix R package (Aria and Cuccurullo, 2017). By doing so it appeared that scholars' interests can be categorized into three clusters: those who focused on narcissism ($n = 22$; $\% = 61$), psychopathy ($n = 6$; $\% = 17$), and Machiavellianism ($n = 3$; $\% = 8$). It is noteworthy, however, that only the remaining five articles ($\% = 14$) addressed two or more personality traits simultaneously. This is significant, considering psychological literature emphasizes that individual behavior is not solely defined by a single personality trait but rather by a combination of various traits. This discrepancy highlights a crucial flaw in the management literature that needs to be addressed. Consequently, the rest of the article is structured as follows: first, we delve into each of the three clusters independently, and later, in the discussion section, we aim to fill this gap by presenting a more integrated and holistic examination of the literature.

4.2 Cluster analysis

4.2.1 Narcissism and corporate misconduct

The American Psychological Association Dictionary (2023c) defines narcissism as “excessive self-love or egocentrism”. Within academic discourse, various perspectives on narcissism exist. Despite the American Psychiatric Association's (2013) classification of narcissism as a personality disorder, this article adopts the perspective put forth by Raskin and Hall (1979) and by Emmons (1987), treating it as a normal personality trait.

Among the scholarly articles that have dealt with narcissistic apical decision-makers, it is noteworthy to mention the contribution of Lubit (2002). He was among the first in management and business sciences to emphasize the need for identifying and addressing the potentially destructive effects of narcissistic behavior within the organizational hierarchy. Specifically, Lubit (2002) highlighted the importance for organizations to examine their cultural setting to prevent and discourage the presence of people with such characteristics.

A few years later, Chatterjee and Hambrick (2007) empirically demonstrated that narcissistic CEOs are naturally more inclined to make attention-grabbing decisions that may lead to either significant successes or tremendous failures. Specifically, CEOs' egocentrism represents a double-edged sword. For instance, narcissism can prompt apical decision-makers to invest in innovation, but it can also lead them to prioritize their interests over stakeholders' interests, compromising ethical and safety standards (Petrenko et al., 2016; Kashmiri et al., 2017).

In this vein, O'Reilly et al. (2018) unveiled the tendency of narcissistic CEOs to discount expert advice, making them more prone to risk-taking and intuitive decisions. This finding aligns with Li et al. (2022), who highlighted the correlation between prestigious awards and the propensity for financial misconduct among CEOs, indicating how their grandiose sense of superiority increases the likelihood of unethical or illegal behaviors. However, this latter conclusion is contradicted by Kalbuana et al. (2023) who identified a positive correlation between high CEO narcissism and a decrease in corporate tax avoidance.

4.2.3 Psychopathy and corporate misconduct

According to the 2023 edition of the American Psychological Association Dictionary, the term “psychopathy” is synonymous with antisocial personality disorder. It is defined as “a chronic and pervasive disposition to disregard and violate the rights of others. Manifestations include repeated violations of the law, exploitation of others, deceitfulness, impulsivity, aggressiveness, reckless disregard for the safety of self and others, and irresponsibility, accompanied by lack of guilt, remorse, and empathy”. Despite the current identification by the American Psychological Association (2023d), the business and management literature predominantly refer to this phenomenon as “psychopathy” - consequently, to maintain consistency, this study will adopt the same terminology.

According to the information retrieved from the dataset, Clive R. Boddy is credited as the first to conceptualize the notion of “corporate psychopaths” in 2006. He underscored the necessity of investigating the influence of such individuals - who represent 1% of the world

population - on organizational misconduct, business sustainability, and corporate social responsibility. Adding to this discourse, Babiak et al. (2010) shed light on the capacity of psychopaths to manipulate others through their communication skills and charisma. These scholars specifically suggested that corporate psychopaths manage to progress in their careers despite exhibiting poor performance in the workplace.

This assertion was corroborated by Boddy et al. (2010), who highlighted that corporate psychopaths are more prevalent in senior positions within organizations. This suggests that individuals without conscience may be in control of significant corporate resources and may prioritize their self-interest over the organization and its stakeholders' interests. Boddy (2011) further posited that corporate psychopaths played a significant role in precipitating the 2007-2008 global financial crisis, which originated with a subprime mortgage lending crisis in 2007 and evolved into a global banking emergency when Lehman Brothers crashed into bankruptcy (Kenton, 2023).

This claim is also supported by Boddy et al. (2015), who empirically demonstrated that despite their short-term successes, corporate psychopaths' conduct is detrimental to the long-term prosperity of the organizations they oversee because they often engage in fraudulent activities as well as displaying bullying, fear-mongering, and manipulative behaviors - ultimately jeopardizing organizational outcomes. For instance, Boddy (2023) found that, due to their profound disregard for corporate social responsibility and their willingness to falsify environmental impact reports, corporate psychopaths are likely to engage in deceptive practices (e.g., unlawful disposal of toxic waste materials).

4.2.3 Machiavellianism and corporate misconduct

The American Psychological Association Dictionary (2023e) defines Machiavellianism as “a personality trait marked by a calculating attitude toward human relationships and a belief that ends justify means, however ruthless. A Machiavellian is one who views other people more or less as objects to be manipulated in pursuit of his or her goals, if necessary through deliberate deception”.

Among the scholarly articles that have studied the link between personality traits and apical decision-makers' inclination to misconduct, Machiavellianism has received less attention compared with narcissism and psychopathy. However, scholars have produced interesting results. For example, in their exploration of Chinese decision-makers, Al-Khatib et al. (2007) revealed a tendency for individuals high in Machiavellianism to resort to deceptive negotiation tactics, such as misrepresentation and false promises. Their inclination toward viewing negotiations as zero-sum games, can erode trust and cooperation, ultimately fracturing long-term relationships between organizations and their stakeholders.

Further shedding light on the link between Machiavellianism and unethical behavior, Kish-Gephart et al. (2010) emphasized how Machiavellian decision-makers tend to manipulate interpersonal relationships opportunistically, using deception and exploitation to serve their personal interests. This manipulation can extend to actions such as falsifying financial results,

deceiving shareholders, and engaging in other unethical practices to further personal gains, disregarding ethical standards and potentially causing harm to stakeholders.

Moreover, the study by Shafer and Lucianetti (2018) elucidated how Machiavellian apex decision-makers may exhibit resistance to sustainability and environmental responsibility reports. In fact, these individuals, by prioritizing immediate gains, might view such reports as a hindrance to short-term profits due to their focus on long-term investments. Additionally, these reports demand transparency and accountability, challenging the secretive nature and desire for control of Machiavellians. Changes associated with such initiatives could disrupt the status quo that serves their interests. Finally, implementing these reports would represent an emphasis on communal benefit over personal gain, which does not align with the self-serving nature of Machiavellian decision-makers.

5. Discussion and research agenda

This article explores the nexus between personality traits and the proclivity of top decision-makers towards misconduct. Through a systematic literature review (SLR), we highlight narcissism, psychopathy, and Machiavellianism as pivotal factors in fostering such inclinations, employing the Theory of Planned Behavior (TPB) (Ajzen, 1991) as a conceptual scaffold to elucidate their contributions to unethical behaviors.

Ajzen (1991) delineates the TPB's first determinant, attitude, as pivotal in shaping intentions. Decision-makers with grandiose narcissism often prioritize personal acclaim over ethics, facilitating misconduct (Li et al., 2022). Similarly, those high in psychopathy manipulate situations to their advantage, disregarding ethical standards (Boddy, 2023). Likewise, Machiavellian decision-makers exploit circumstances for personal gain, indifferent to potential harm (Kish-Gephart et al., 2010), suggesting a direct link between dark triad traits and unethical conduct.

The TPB's second determinant, subjective norm, underscores the influence of social pressure. Narcissistic leaders seek validation, sometimes resorting to misconduct (Kashmiri et al., 2017). Psychopathic decision-makers feign compliance while furthering self-interests (Boddy, 2023), fostering a culture that tolerates unethical practices (Shafer and Lucianetti, 2018), aligning with the dark triad's manipulation of norms.

Lastly, perceived behavioral control, the TPB's third determinant, reflects ease or difficulty in behavior execution. Narcissistic decision-makers exhibit high perceived control due to their inflated self-perception (Li et al., 2022). Similarly, psychopaths navigate situations effortlessly due to their manipulative skills (Boddy, 2011), as do Machiavellians, owing to strategic thinking (Al-Khatib et al., 2007), suggesting a positive correlation between dark triad traits and perceived control.

Despite synthesizing literature comprehensively, this study identifies significant gaps, including disproportionate focus on narcissism and challenges in measuring decision-makers' personalities. Hence, insights drawn from the SLR suggest avenues for future research (Table 2).

Table 2 Research agenda.

Future Research Avenues	
CEOs... and not only	Current research primarily focuses on CEO misconduct, but it's essential to also study other board members or founders. Organizations are rarely led solely by one person nowadays. Broadening research scope can provide a better understanding of how personality traits affect misconduct in firms.
Angels vs Demons	Understanding how "dark" executives influence board members and how "light" executives reduce misconduct risks remains unclear. Investigating potential selection bias in board turnover towards either "angels" or "demons" executives is intriguing. Exploring executive contagion, where personalities shift, offers valuable insights.
V.I.P. (very important personality traits)	Assessing top decision-makers has historically been challenging for scholars, often resorting to unreliable indicators like CEO picture size. New unobtrusive assessment techniques like videometric and text analyses are revolutionizing research. However, studies tend to analyze personality traits individually rather than within a comprehensive biopsychosocial framework.
Even scholars need Heroes	Business and management scholars should start collaborating more often with clinical psychologists and psychiatrists. This will allow not only to produce more robust results but also to implement additional and more sophisticated measures that are still uncommon in the business and management literature (e.g., the B-Scan which may allow to gain more nuanced insights into psychopathic strategies in the corporate world).
See the full landscape	Corporate misconduct is multifaceted and not solely attributable to personality traits. Understanding why top decision-makers engage in unethical behavior requires considering various factors at individual, group, industry, and macro levels. For example, tenured executives may exhibit overconfidence due to experience, while individuals from impoverished backgrounds may turn to fraud for financial security. Industry dynamics and regulatory loopholes also play significant roles. Integrating these perspectives is vital for a comprehensive understanding and effective prevention of corporate misconduct.
Scandals echo through time	While modern research methodologies have their own merits, the use of seemingly archaic approaches like historical case studies can offer unique insights. Investigating corporate misconduct through historical case studies yields valuable insights into recurring patterns in decision-making and regulatory flaws. By comparing similar instances over time, scholars can understand how apical decision-makers think, act, and react. The resulting knowledge will be beneficial also for policymakers to refine robust and adaptable legal measures to prevent corporate unethical or illegal behaviors.

Moreover, to advance research on why firms misconduct, there is a critical need to shift focus beyond the CEO and examine the roles of other key figures like other board members and founders. This includes investigating the interplay between executives with "dark" and "light" traits as well as addressing potential biases and heuristics behind the choice of pursuing unethical or illegal behaviors. Leveraging on advanced assessment tools such as videometric and text analyses can provide deeper insights as well as allowing scholars to stop dealing with personality traits separately rather than as part of a complex biopsychosocial system. To facilitate this, fostering collaborations between business scholars and clinical psychology experts is crucial. This interdisciplinary approach can not only lead to more trustworthy and empirically valid results but also to the adoption of more sophisticated measures like the B- Scan 360. Furthermore, scholars should consider diverse factors like experience, socioeconomic backgrounds, industry dynamics variables - possibly simultaneously - when investigating unethical and illegal decisions. In fact, by integrating these perspectives, future studies can offer a comprehensive understanding of the complex drivers behind corporate misconduct, paving the way for effective preventive measures and adaptable legal frameworks within organizations.

6. Conclusion

This article presents a pioneering systematic literature review (SLR) on the influence of personality traits on top-level decision-makers' attitudes, subjective norms, and perceived behavioral control in the context of irresponsible management. It offers a twofold contribution: firstly, addressing the fragmented treatment of personality traits in management literature by advocating a holistic approach, and secondly, enhancing the understanding of irresponsible management beyond specific frameworks like the fraud triangle to encompass broader catalyst forces.

The research holds significant implications for scholars, practitioners, and policymakers. Organizations can utilize insights to screen and train leaders for ethical decision-making, while policymakers can enact preventive measures and legal frameworks to curb misconduct. Additionally, the study provides a timely and comprehensive SLR, filling a gap in the literature and setting a research agenda for future exploration.

Acknowledging limitations, such as potential errors in article selection or interpretation, the article encourages further inquiry into the generation of corporate misconduct. Overall, it serves as a foundational step for advancing understanding and addressing such occurrences effectively.

References

AL-KHATIB J.A., VOLLMERS S.M., LIU Y. (2007), "Business-to-business negotiating in China: The role of morality", *Journal of Business & Industrial Marketing*, vol. 22, n. 2, pp. 84-96.

- AMERICAN PSYCHIATRIC ASSOCIATION (2013), *Diagnostic and statistical manual of mental disorders: DSM-5™* (5th ed.), Washington, DC, USA: American Psychiatric Publishing, Inc.
- AMERICAN PSYCHOLOGICAL ASSOCIATION (2023a), Personality trait. Available at <https://dictionary.apa.org/personality-trait> [accessed on October 4, 2023].
- AMERICAN PSYCHOLOGICAL ASSOCIATION (2023b), Personality. Available at <https://dictionary.apa.org/personality> [accessed on January 7, 2024].
- AMERICAN PSYCHOLOGICAL ASSOCIATION (2023c), Narcissism. Available at <https://dictionary.apa.org/narcissism> [accessed on October 21, 2023].
- AMERICAN PSYCHOLOGICAL ASSOCIATION (2023d), Antisocial personality disorder. Available at <https://dictionary.apa.org/antisocial-personality-disorder> [accessed on October 21, 2023].
- AMERICAN PSYCHOLOGICAL ASSOCIATION (2023e), Machiavellianism. Available at <https://dictionary.apa.org/machiavellianism> [accessed on October 21, 2023].
- AJZEN I. (1991), "The theory of planned behavior", *Organizational Behavior and Human Decision Processes*, vol. 50, n. 2, pp. 179-211.
- AJZEN I. (2011), "The theory of planned behaviour: Reactions and reflections", *Psychology & health*, vol. 26, n. 9, pp. 1113-1127.
- AJZEN I. (2020), "The theory of planned behavior: Frequently asked questions", *Human Behavior and Emerging Technologies*, vol. 2, n. 4, pp. 314-324.
- AJZEN I., FISHBEIN M. (1980), *Understanding attitudes and predicting social behavior*. Englewood Cliffs, N.J, USA: Prentice-Hall.
- AJZEN I., FISHBEIN M. (2005), "The influence of attitudes on behavior", In Albarracín D., Johnson B.T., Zanna M.P. (Eds.), *The handbook of attitudes* (pp. 173-221), Mahwah, NJ, USA: Lawrence Erlbaum Associates
- ARIA M., CUCCURULLO C. (2017), "bibliometrix: An R-tool for comprehensive sciencemapping analysis", *Journal of Informetrics*, vol. 11, n. 4, pp. 959-975.
- BABIAK P., NEUMANN C. S., HARE R. D. (2010), "Corporate psychopathy: Talking the walk", *Behavioral Sciences & The Law*, vol. 28, n. 2, pp. 174-193.
- BODDY C.R. (2006), "The dark side of management decisions: Organisational psychopaths", *Management Decision*, vol. 44, n. 10, pp. 1461-1475.
- BODDY C.R. (2011), "The corporate psychopaths theory of the global financial crisis", *Journal of Business Ethics*, vol. 102, pp. 255-259.
- BODDY C.R. (2023), "Moving sustainability towards flourishing for all: The critical role of (toxic) leadership", *Business and Society Review*, forthcoming.
- BODDY C.R., MILES D., SANYAL C., HARTOG M. (2015), "Extreme managers, extreme workplaces: Capitalism, organizations and corporate psychopaths", *Organization*, vol. 22, n. 4, pp. 530-551.
- BORGHOLTHAUS C.J., WHITE J.V., HARMS P.D. (2023), "CEO dark personality: A critical review, bibliometric analysis, and research agenda", *Personality and Individual Differences*, vol. 201, 111951.
- CAMPBELL D.W., SHANG R. (2022), "Tone at the bottom: Measuring corporate misconduct risk from the text of employee reviews", *Management Science*, vol. 68, n. 9, pp. 7034-7053.
- CAPUTO A., KARGINA M. (2022), "A user-friendly method to merge Scopus and Web of Science data during bibliometric analysis", *Journal of Marketing Analytics*, vol. 10, n. 1, pp. 82-88.
- CARPENTER T.D., REIMERS J.L. (2005), "Unethical and fraudulent financial reporting: Applying the theory of planned behavior", *Journal of Business Ethics*, vol. 60, pp. 115-129.
- CHATTERJEE A., HAMBRICK D.C. (2007), "It's all about me: Narcissistic chief executive officers and their effects on company strategy and performance", *Administrative Science Quarterly*, vol. 52, n. 3, pp. 351-386.
- COHEN J., DING Y., LESAGE C., STOLOWY H. (2010), "Corporate fraud and managers' behavior: Evidence from the press", *Journal of Business Ethics*, vol. 95, pp. 271-315.
- CRESSEY D.R. (1973), *Other people's money: A study of the social psychology of embezzlement*. Montclair, NJ, USA: Patterson Smith.
- EMMONS R.A. (1987), "Narcissism: theory and measurement", *Journal of Personality and Social Psychology*, vol. 52, n. 1, pp. 11.
- EVDOKIMOV E., HANLON D., LIM E.K. (2021), "Do generalist CEOs magnify boardroom backscratching?", *Journal of Business Ethics*, vol. 181, pp. 221-247.
- GARCIA D. (2020), "Dark cube. In *Encyclopedia of personality and individual differences* (pp. 988-993), "Cham: Springer International Publishing.
- GARFIELD E. (2004), "Historiographic mapping of knowledge domains literature", *Journal of Information Science*, vol. 30, n. 2, pp. 119-145.
- HARRISON J.S., THURGOOD G.R., BOIVIE S., PFARRER M.D. (2019), "Measuring CEO personality: Developing, validating, and testing a linguistic tool", *Strategic Management Journal*, vol. 40, n. 8, pp. 1316-1330.
- KALBUANA N., TAQI M., UZLIAWATI L., RAMDHANI D. (2023), "CEO narcissism, corporate governance, financial distress, and company size on corporate tax avoidance", *Cogent Business & Management*, vol. 10, n. 1, pp. 2167550.
- KASHMIRI S., NICOL C.D., ARORA S. (2017), "Me, myself, and I: influence of CEO narcissism on firms' innovation strategy and the likelihood of product-harm crises", *Journal of the Academy of Marketing Science*, vol. 45, pp. 633-656.
- KENTON W. (2023), Financial crisis: Definition, causes, and examples. Available at: <https://www.investopedia.com/terms/f/financial-crisis.asp> [accessed on October 21, 2023].
- KISH-GEPHART J.J., HARRISON D.A., TREVIÑO L.K. (2010), "Bad apples, bad cases, and bad barrels: meta-analytic evidence about sources of unethical decisions at work", *Journal of Applied Psychology*, vol. 95, n. 1, pp. 1.
- KULIK B.W., O'FALLON M.J., SALIMATH M.S. (2008), "Do competitive environments lead to the rise and spread of unethical behavior? Parallels from Enron", *Journal of Business Ethics*, vol. 83, pp. 703-723.
- LI J., SHI W., CONNELLY B.L., YI X., QIN X. (2022), "CEO awards and financial misconduct", *Journal of Management*, vol. 48, n. 2, pp. 380-409.

- LUBIT R. (2002), "The long-term organizational impact of destructively narcissistic managers", *Academy of Management Perspectives*, vol. 16, n. 1, pp. 127-138.
- MARRERO Z.N., GOSLING S.D., PENNEBAKER J.W., HARARI G.M. (2022), "Evaluating voice samples as a potential source of information about personality", *Acta Psychologica*, vol. 230, 103740.
- MUDRACK P. (2007), "Individual personality factors that affect normative beliefs about the rightness of corporate social responsibility", *Business & Society*, vol. 46, n. 1, pp. 33-62.
- NEVILLE F., BYRON K., POST C., WARD A. (2019), "Board independence and corporate misconduct: A cross-national meta-analysis", *Journal of Management*, vol. 45, n. 6, pp. 2538-2569.
- O'REILLY III C.A., DOERR B., CHATMAN J.A. (2018), "'See You in Court': How CEO narcissism increases firms' vulnerability to lawsuits", *The Leadership Quarterly*, vol. 29, n. 3, pp. 365-378.
- PAGE M.J., MCKENZIE J.E., BOSSUYT P.M., BOUTRON I., HOFFMANN T.C., MULROW C.D., MOHER D. (2021), "The PRISMA 2020 statement: An updated guideline for reporting systematic reviews", *International Journal of Surgery*, vol. 88, 105906.
- PETRENKO O.V., AIME F., RIDGE J., HILL A. (2016), "Corporate social responsibility or CEO narcissism? CSR motivations and organizational performance", *Strategic Management Journal*, vol. 37, n. 2, pp. 262-279.
- POWELL T.C., LOVALLO D., FOX C.R. (2011), "Behavioral strategy", *Strategic Management Journal*, vol. 32, n. 13, pp. 1369-1386.
- RASKIN R.N., HALL C.S. (1979), "A narcissistic personality inventory", *Psychological Reports*, vol. 45, n. 2, pp. 590-590.
- SHAFER W.E., LUCIANETTI L. (2018), "Machiavellianism, stakeholder orientation, and support for sustainability reporting", *Business Ethics: A European Review*, vol. 27, n. 3, pp. 272-285.
- TRANFIELD D., DENYER D., SMART P. (2003), "Towards a methodology for developing evidence-informed management knowledge by means of systematic review", *British Journal of Management*, vol. 14, n. 3, pp. 207-222.
- VAN SCOTTER J.R. (2020), "Narcissism in CEO research: a review and replication of the archival approach", *Management Review Quarterly*, vol. 70, n. 4, pp. 629-674.
- VAN SCOTTER J.R., ROGLIO K.D.D. (2020), "CEO bright and dark personality: Effects on ethical misconduct", *Journal of Business Ethics*, vol. 164, pp. 451-475.

Governing Micro-Municipalities: A Literature Review

MATTEO CRISTOFARO¹ NICOLA CUCARI² ANTONELLA MONDA³

DAVIDE LIBERATO LO CONTE⁴ ANASTASSIA ZANNONI⁵ LEUL GIRMA⁶ PINALBA SCHILLECI⁷

FRANCESCO LAVIOLA⁸ SIMONA MARE⁹

Abstract

The study explores the significance of Micro-Municipalities as prevalent forms of local governance globally, focusing on network relationships that shape community dynamics. Through a systematic literature review of 30 articles, it identifies four key nodes impacting municipal governance: society, stakeholders, residents and administrators. These nodes influence governance differently, depending on the resources exchanged in their relationships. The research proposes a network-based framework highlighting the need for multifaceted cooperation among these entities to enhance municipal governance. This framework offers insights for researchers, administrators and policymakers, addressing critical issues such as resource allocation, development initiatives, depopulation challenges, and sustainability. Overall, the study contributes to a deeper understanding of Micro-Municipalities and offers practical implications for improving their governance.

Key words: Micro-Municipality; Governance; Network; Systematic literature review

Framing of the research. Micro-municipalities, a form of local government with a population of approximately 5000 inhabitants (Giacomini et al., 2018; United Nations, 2019), constitute the majority of local public entities in states around the world. In the U.S., about 76% of the approximately 19,500 municipalities have fewer than 5,000 residents; of those, almost 42% have fewer than 500 people (Statista, 2019). In Europe, 47% of micro-municipalities have less than 5,000 inhabitants (OECD, 2018, p. 6). Additionally, municipalities constitute an integral part of national and regional cultural heritage and play a pivotal role in current efforts toward sustainable revitalization (Baiocco et al., 2023) - a key driver for achieving the United Nations Sustainable Development Goals (UN Tourism, 2023). Due to their peculiar characteristics, municipalities require network support in managing urbanization, building/renovating infrastructures, and providing essential services, which has significant implications for their administrative structures (Atkinson, 2019).

Previous scholarly investigations have produced various models concerning public governance, also considering a network perspective (Provan and Kenis, 2008; Klijn and Koppenjan, 2015; Koliba et al., 2017). Notably, Naveed and Azhar (2022) uncovered the significance of self-governance mechanisms within public networks, emphasizing the independent participation and interactions among various actors. This dynamic fosters the generation of collective solutions to shared problems. However, despite scholars investigating municipalities' governance facets (e.g., Kasymova and Schachter, 2014; Catlaw and Stout, 2016; Lara-Rubio et al., 2022), there is no systematization of results that would guide the reader to a deeper understanding of the various relationships that influence municipal governance. Failing to fill this void hinders our ability to comprehend the dynamics influencing micro-municipal governance, potentially leading to ineffective governance strategies, misallocating resources, and an inadequate response to the challenges posed by

¹ University of Roma Tor Vergata
e-mail: matteo.cristofaro@uniroma2.it

² Sapienza University of Roma
e-mail: nicola.cucari@uniroma1.it

³ University of Roma Tor Vergata
e-mail: antonella.monda@uniroma2.it

⁴ Sapienza University of Roma
e-mail: davideliberato.loconte@uniroma1.it

⁵ University of Roma Tor Vergata
e-mail: anastassia.zannoni@uniroma2.it

⁶ e-mail: l.haylemariam@studenti.unint.eu

⁷ University of Roma Tor Vergata
e-mail: pinalba.schilleci@uniroma2.it

⁸ Sapienza University of Roma
e-mail: francesco.laviola@uniroma1.it

⁹ University of Roma Tor Vergata
e-mail: mare@economia.uniroma2.it

depopulation. The cost of not addressing this gap is a missed opportunity for informed governance, policymaking, and sustainable development tailored to the unique dynamics of municipal communities (Powe et al., 2022). Since they have a different role than towns and metropolises within their administrative dynamics, municipalities require a governance that resonates with their unique characteristics (Bel and Warner, 2015), challenging the notion of a one-size-fits-all approach.

Purpose of the paper. This study reviews the network relationships that influence municipalities' governance. Adopting a network perspective of public governance (Dimitrijevska-Markoski and Nukpezah, 2022; Naveed and Azhar, 2022), we first identified the four most significant network entities influencing micro-municipal governance: society, stakeholders, residents and administrators. For each, we identified the positive, neutral, or negative influences exerted on municipal governance and the resources exchanged within the relationship. In doing that, our work resonates with the call for further research on the relationship between network structure and mechanisms (Giacomini et al., 2018). Departing from the results, we propose a network-based framework depicting micro-municipal governance from a network perspective, prioritizing a multifaceted collaboration among the recognized entities. Furthermore, the framework highlights the relationships that need more attention in future studies that complement the research agenda for scholars we propose from the literature analysis - which includes the call for a nuanced definition of municipalities, in-depth analyses of identified relationships, and methodological pluralism.

Methodology. A systematic literature review (SLR) has been considered the most appropriate research design to consolidate and synthesize academic research regarding micro-municipal governance (as suggested by Edmondson and McManus, 2007). We followed an established process used in other SLRs (e.g., Cristofaro and Giannetti, 2021). In particular:

- 1) We used these databases to search for studies: Business Source Complete (EBSCO), Econlit, ISI Web of Science, Scopus, and ProQuest's ABI/Inform.
- 2) We limited our search to only peer-reviewed journal articles published in English. The research was not restricted to a given starting period (end period December 2023), and we did not apply any Journal exclusion criteria.
- 3) We selected articles if they include at least one of the following keywords: "municipal*"¹⁰ or "village*" or "town*" or "city" or "cities" or "suburb*" or "hamlet*" or "borough*" or "burg*" or "local*" or "urban" or "settlement*". We reached 68,563 hits.
- 4) We filtered for articles including at least one of the following keywords: "admin*" "manage*" or "govern*." We reached 6,567 hits.
- 5) We eliminated duplicates using reference-manager software. 4,290 hits remained.
- 6) From the 4,290 hits, we scanned articles by reading their titles and abstracts to ensure their substantive context was consistent with the aim of our review. This resulted in a sample of 598 articles.
- 7) The remaining articles were read in full to ensure their alignment with the research objective: contributing to the governance of municipalities. We specifically provided that the precise municipal dimension given by the practice (i.e., 5,000) could have been retrieved by reading the article; we discarded contributions that did not specifically identify the municipal dimension or give cues to it. This resulted in a sample of 27 articles. Cronbach's alpha regarding inter-rater reliability was 0.84.
- 8) We added three articles to the sample via the snowballing technique. The final sample is composed of 30 articles.

For steps 6) and 7), three authors individually read the articles and then compared their evaluation. If there was disagreement, the authors re-assessed their reports and decided whether to include the articles within the sample or otherwise. Chronbach's alpha regarding inter-rater reliability was 0.85.

For each article, we collected/coded publication i) year, ii) author(s), iii) Journal, iv) research question/goal/aim of the article, v) type of article, vi) adopted theory, vii) data collection, viii) study setting, ix) data analysis, x) dimension of the municipality, xi) node 1 and node 2, xii) the effect of node 1 on node 2 (positive, neutral, or negative), xiii) type of resource(s) exchanged, and xiv) public administration practice. Thanks to the identified nodes and relationships we built a framework for micro-municipal administration following a network perspective (Kim, 2006; Koliba et al., 2017).

Results. This section provides descriptive statistics of the investigated sample regarding the a) distribution of articles over time, b) the distribution of articles by journal, c) the adopted theoretical perspective, d) the adopted data collection and analysis methods, e) the public administration practices behind the exchange of resources, and f) the criteria considered for defining the micro-municipality.

Concerning the distribution of publications by year, between 2007 and 2017, articles were consistently produced at a low frequency. However, there was a notable improvement from 2018 to 2023 (from two to six articles). The frequency of publications suggests that the administration of micro-municipalities debates in the academic literature are a niche despite their relevance in public administration. Regarding the journal distribution, the most prolific outlet is *Cities* (4; 13%).

Regarding the adopted theoretical perspective, the most adopted perspectives were Good Governance (4; 13%) and Stakeholder Theory (3; 9%). The most common method for data collection is secondary data, accounting for 27% of total occurrences, followed by interviews (24%); accordingly, the descriptive approach was the most frequently used data analysis method (29%). Among the public administration practices behind the exchange of resources, the subject of inter-

¹⁰ The asterisk at the end of a search word allows for different suffixes.

administrational interactions is discussed in ten articles (33%), while participatory tools, transparency, public service commitment, and financial management are explored in four articles each (52% in total). Regarding the adopted criteria used for defining a micro-municipality, the number of inhabitants is the most adopted, and 25 articles (83%) identify this local entity as having no more than 5,000 inhabitants.

Finally, the research uncovers four nodes that affect micro-municipal administration:

- 1) *Society*: encompassing citizens, media, political parties, and universities, sets the broader context;
- 2) *Stakeholders*: this node includes various entities such as local self-administrations, entrepreneurs, investors, bureaucratic agencies, and informal community leaders;
- 3) *Residents*: citizens subject to the influence of the administration who can in turn actively influence the administration;
- 4) *Administrators*: this node centralizes the formal leadership and administrative structures.

These factors influence micro-municipalities' administration differently, according to the resources exchanged in these relationships. The analysis of exchanged resources among nodes shows that intellectual ones account for 26% (14) of the total.

Table 1. Summary of identified network influences on micro-municipality' governance

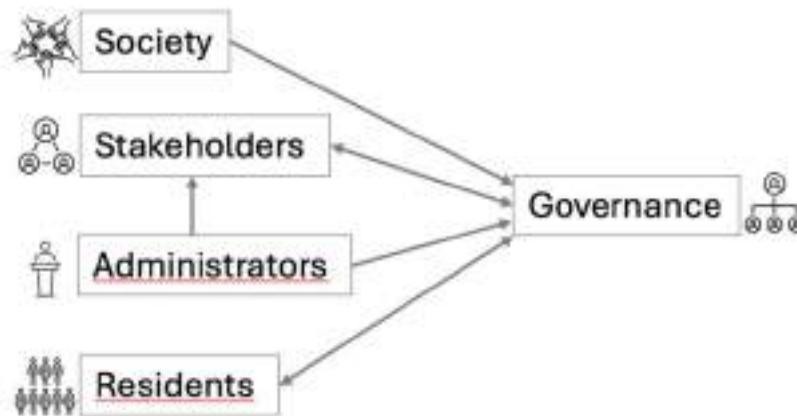
Node 1	Node 2	Relationship drivers	Authors	Direction	Public administration practice
Society	Micro-Municipality Administration	Unemployment Increased income per capita Reduced fiscal pressure	Lara-Rubio <i>et al.</i> (2022)	Positive	Financial management
		Higher population Lower unemployment Female municipal leadership Micro-Municipality public servant	Zagrapan and Spáč (2022)	Positive	Transparency
		Economic expansion Infrastructure investment Government intervention Targeted poverty alleviation Connection with towns	Tang <i>et al.</i> (2023)	Negative Negative Negative Positive Neutral	Inter administrative relationships
Stakeholders	Micro-Municipality Administration	Inter-local service agreements	Previtali, P. (2015)	Neutral	Inter administrative relationships
		Mandatory inter-municipal cooperation (IMC)	Giacomini <i>et al.</i> (2018)	Positive	Inter administrative relationships
		Tools for stakeholder participation in local development	Vitálišová <i>et al.</i> (2021)	Positive	Participatory tools
		Involvement of higher-level governments	Yi <i>et al.</i> (2018)	Positive	Inter administrative relationships
		Community leadership	Liu and Han (2023)	Positive	Inter administrative relationships
		Dissemination of methods of good governance	Sara and Saputra (2021)	Positive	Financial management
		Intergovernmental fiscal factors Service-sharing mechanisms with towns	Zhang and Holzer (2020)	Negative Positive	Inter administrative relationships
Micro-Municipality Administration	Residents	Efficient services and municipality Richest and most indebted municipality Right-wing or female mayors Lower voter turnout	Benito <i>et al.</i> (2021)	Positive	Transparency
		Proactive transparency	Sofyani <i>et al.</i> (2023)	Positive	Financial management
		Government-led redevelopment	Zhang <i>et al.</i> (2019)	Positive	Inter administrative relationships

		Top-down facilitation of public participation Politicization of public space Inadequate information disclosure	Hidayat <i>et al.</i> (2019)	Negative	Participatory tools
		Community report cards Budget discussion	Kasymova and Schachter (2014)	Positive	Participatory tools
		Accountability practices involving the community Micro-Municipality responsiveness Streamlined processes	Annahar <i>et al.</i> (2023)	Positive	Participatory tools
		Performance management systems	Beeri <i>et al.</i> (2019)	Positive	Performance management
Administrators	Micro-Municipality Administration	Familial and peer encouragement Social acceptance	Pamungkas <i>et al.</i> (2020)	Positive	Transparency
		Public service motivation and compassion	Liu <i>et al.</i> (2022)	Positive	Public service commitment
		Local leadership strategies for legitimation	Steenbergen (2016)	Positive	Urban regeneration
		Appointed volunteer boards provided with information and procedures and training	Dougherty and Easton (2011)	Positive	Public service commitment
Administration	Stakeholders	Good administration principles	Zaitul <i>et al.</i> (2023)	Positive	Inter administrative relationships
		Italian initiative "Houses at 1€"	Pera (2021)	Neutral	Urban regeneration
		Urban regeneration policies	Xiao <i>et al.</i> (2022)	Neutral	Urban regeneration
		Communication and coordination challenges	Fatimah <i>et al.</i> (2023)	Negative	Inter administrative relationships
Residents	Micro-Municipality Administration	Accountability and value for money attitude of residents	Jayawarsa <i>et al.</i> (2021)	Positive	Financial management
		Power distance Uncertainty avoidance Collectivism Femininity	Sonbay <i>et al.</i> (2022)	Negative Positive Positive Positive	Financial management
		Perception of micro-municipality elections	Tan and Qiushui (2007)	Positive	Public service commitment
		Collective self-governance	Zhang <i>et al.</i> (2022)	Positive	Inter administrative relationships
		Representative participation Project participation Problem-oriented self-organization	Kondratyev and Fadeeva (2021)	Negative Positive Positive	Public service commitment

Source: own elaboration

In Table 1, we present a comprehensive summary of network influences on micro-municipal administration, focusing on the relationships and effects (positive, negative or neutral) between the studied nodes (society, stakeholders, residents and administrators) and the micro-municipal governance. The table is organized based on the nodes from which the effect departs. This table serves as a foundational reference for the subsequent sections of this article, where influences will be examined and discussed. Figure 1 summarizes the relationships that emerged from the systematic review, the influences of which are observed below.

Figure 1. Relationships emerging from the SLR between the nodes of the network and the Micro-Municipal Governance



Source: own elaboration

Impact of Society on Micro-Municipal Governance

The studies conducted by Lara-Rubio et al. (2022), Zagraban and Spáč (2022), and Tang et al. (2023) examine the intricate relationship between society and municipal governance functioning. Lara-Rubio et al. (2022) focus on financial resources' role in society-municipality relations, identifying societal drivers such as unemployment, income per capita, and fiscal pressure influencing loan default risk in Spanish villages. They suggest tailored financial policies, including subsidizing loan interest rates, to address depopulation, promote youth employment, and reduce property tax burdens. Zagraban and Spáč (2022) investigate proactive transparency in Slovakian villages, finding associations between population size, unemployment rates, female leadership, and transparency levels, albeit challenged by personnel shortages and limited resources. Tang et al. (2023) analyze factors influencing built-up land development in Chinese villages, highlighting the complex interplay of scarcity, development intensity, economic expansion, infrastructure investment, and administration intervention. They recommend prioritizing urban development policies and integrated approaches for balanced village-town relationships, emphasizing the importance of physical, natural, and financial resources.

Impact of Stakeholders on Micro-Municipal Governance

This section synthesizes findings from six studies focusing on different aspects of village stakeholders' impact on micro-municipal governance. Previtali (2015) examines the effect of Italian administrative reform on inter-local service agreements, revealing a prevalent "collaborative inertia" among local governments. Giacomini et al. (2018) highlight the efficiency benefits of mandatory inter-municipal cooperation (IMC) in small Italian municipalities, particularly in reducing administrative costs and enhancing institutional legitimacy. Yi et al. (2018) explore interlocal collaboration in China, noting its focus on achieving sustainable economic growth and the formalizing role of national and provincial administrations. Vitálišová et al. (2021) investigate stakeholder participation tools in Slovakian villages, noting citizens' involvement in planning phases but decreased engagement in review and communication stages. Liu and Han (2023) observe that informal community leadership significantly enhances local governance through interactive feedback processes, stressing the importance of credibility and strategic organization to foster continuous participation and involvement in collective action.

Impact of Residents on Micro-Municipal Governance

This section explores studies highlighting how residents influence the practices of micro-municipal governance. In Bali, Jayawarsa et al. (2021) examined economic and financial management in traditional villages, emphasizing community commitment to empowerment and the need for value-based performance. Sonbay et al. (2022) explored how local culture affects financial system implementation in an Indonesian village, stressing the importance of cultural sensitivity. In China, Tan and Qiushui (2007) investigated village elections, revealing villagers' skepticism despite perceiving elections as fair, suggesting the importance of education and empowering elected committees. Kondratyev and Fadeeva (2021) and Zhang et al. (2022) focused on human and social resources' role. Zhang et al. (2022) discussed rural collaborative governance in Liushe Village, advocating for a combined top-down and bottom-up approach for sustainable rural development. Kondratyev and Fadeeva (2021) analyzed rural residents' self-organization in Russian villages, highlighting the need for nuanced governance strategies and inclusive practices.

Impact of Administrators on Micro-Municipal Governance and Stakeholders

This section examines studies elucidating the impact of micro-municipal administrators on local governance and stakeholders. Dougherty and Easton (2011) emphasize human resources' significance in U.S. local administrations, focusing on appointed volunteer boards' effectiveness in 274 villages. They find that management capacity significantly

influences board effectiveness, stressing the importance of a thoughtful selection process and training provided by local administrators. Pamungkas et al. (2020) investigate intellectual resources in an Indonesian village, analyzing fraud prevention models. They highlight the role of social support in officials' decisions to report fraud, emphasizing the importance of effective whistleblowing systems and culturally sensitive strategies. Liu et al. (2022) assess the public service motivation of village cadres in China, finding that it significantly influences effective garbage and sewage treatment. They advocate for strengthening cadres' motivation to protect public interests, emphasizing the crucial role of human resources in rural administration. Steenbergen's (2016) ethnographic research in Indonesia explores interactions between village administrators, local governance, and stakeholders. They highlight the mediating role of customary leaders in program success, underscoring the importance of inclusive governance and locally driven interventions for effective resource management, while recognizing the complexities within community leadership and administration.

Impact of Micro-Municipal Governance on Stakeholders

This section focuses on the relationship between micro-municipal governance and stakeholders. Zaitul et al. (2023) emphasize specific governance principles crucial for sustainable and inclusive practices, including fairness, inclusivity, legitimacy, participation, performance, transparency, and accountability. Numerous studies support the relevance of these principles in promoting inclusive and sustainable community development. The examination of the Italian initiative "Houses at 1€" by Pera (2021) provides insights into urban regeneration challenges and opportunities. The initiative aims to address depopulation and urban decay by selling abandoned properties for 1 euro, highlighting the need for tailored strategies considering local nuances. In China, improving the rural living environment is crucial. Xiao et al. (2022) evaluate local administration's role in enhancing the rural living environment, emphasizing fair policies, information transparency, and accountability. They stress the importance of considering regional differences in natural and financial endowments for effective policy design. In Indonesia, Fatimah et al. (2023) explore the regulation-making process in Rimba Sari village, highlighting communication and coordination challenges. They underscore the significance of intellectual resources and effective collaboration within village administration and consultative bodies, advocating for enhanced communication channels and coordination mechanisms for a more participatory approach to governance.

Impact of Micro-Municipal Governance on Residents

These studies collectively illuminate the relationship between micro-municipal governance and residents, uncovering various dimensions of administrative impact and identifying factors crucial for community well-being. Benito et al. (2021) and Sofyani et al. (2023) emphasize the importance of transparency in efficient governance, drawing insights from Spanish municipalities and post-reform Indonesian villages. They stress the role of transparency in building community trust and advocate for aligning transparency practices with communal norms. Zhang et al. (2019) highlight the significance of economic empowerment and formalization of informal economic activities in enhancing community resilience, based on the administration-led redevelopment of Tangjialing village. Hidayat et al. (2019) address challenges in negotiable administration in Bajo village, stressing the need for transformative changes to promote citizen engagement and overcome elitism, fostering democratic administration and citizen empowerment. Kasymova and Schachter (2014) and Annahar et al. (2023) explore inclusive administration in Kyrgyzstan and Indonesian villages, focusing on citizen involvement and participatory tools. They underscore the effectiveness of participatory tools in empowering citizens and advocate for merit-based recruitment practices and capacity building for village officials to ensure successful, inclusive governance. Beeri et al. (2019) analyze public performance management in Israeli local authorities, establishing links between performance management and citizens' perceptions of good governance, trust, and satisfaction with administration. They highlight the importance of performance management in enhancing citizen satisfaction and trust, recognizing it as a crucial tool for effective local governance.

Research limitations. As we advocate for a paradigm shift in micro-municipal administration, it is imperative to acknowledge the study's limitations. The selection criteria, though systematic, introduce subjectivity, and the interpretation of micro-municipalities may not capture the diverse nuances of local contexts. The limited number of articles, while a reflection of the current state of research, underscores the need for further interdisciplinary approaches and participatory research methods. Future research should bridge gaps by embracing cross-sectoral analyses, involving stakeholders, and addressing practical limitations. Prioritizing quantitative and qualitative approaches tailored for a network-oriented public administration will contribute to a more nuanced understanding of micro-municipal administration dynamics. This collaborative effort holds the promise of shaping more effective, responsive, and inclusive administrative structures for the evolving needs of our communities.

Managerial implications. Policy makers can enhance micro-municipal governance by implementing tailored financial policies to address issues like depopulation and unemployment. Supporting local enterprises and creating local supply chains can boost urban development. Sustainable practices should be embedded in policies, emphasizing fairness, inclusivity, and transparency, while fostering public service motivation among appointed volunteers. Facilitating resident participation in decision-making ensures effective engagement and inclusion. Aligning financial systems with local values empowers elected municipal committees, enhancing municipal autonomy. These measures collectively aid micro-municipalities in overcoming administrative challenges and promoting community well-being.

Public managers/administrators play a crucial role in efficiently managing municipal practices, particularly in urban development and collaborative initiatives. Leveraging resources strategically and formalizing collaborations with national and provincial governances is vital for sustainable economic growth. They should oversee education and training programs aimed at enhancing relationships within the network and engaging stakeholders effectively. Recognizing and involving informal community leaders strengthens local governance. Continuous improvement in transparency fosters openness and accountability, while inclusive governance practices ensure holistic information flow. Public administrators must maintain balanced and inclusive leadership, acknowledging diverse perspectives and fostering resilience. Embracing these recommendations can help cultivate a resilient, transparent, interconnected network, promoting effective governance and community well-being.

Originality of the paper. *Our framework emphasizes the needed multifaceted cooperation among identified entities influencing municipal governance. Being the first systematic literature review on this peculiar kind of governance, we provide researchers, administrators and policy makers with insights into critical issues in municipalities' governance and identify trajectories for future research.*

References

- ANNAHAR N., WIDIANINGSIH I., MUHTAR E.A., PASKARINA C. (2023), "The Road to Inclusive Decentralized Village Governance in Indonesia", *Sustainability*, vol. 15, n. 11.
- ATKINSON, R. (2019), "The Small Towns conundrum: what do we do about them?", *Regional Statistics*, vol. 9, n. 2, pp. 3-19.
- BAIOCCO S., LEONI L., PANICCIA P.M.A. (2023), "Managing rural destinations in an evolving society: An empirical research", *Corporate Governance and Research & Development studies*, vol. 1, pp. 85-102.
- BEERI I., USTER A., VIGODA-GADOT E. (2019), "Does performance management relate to good governance? A study of its relationship with citizens' satisfaction with and trust in Israeli local government", *Public Performance & Management Review*, vol. 42, n. 2, pp. 241-279.
- BEL G., WARNER M.E. (2015), "Inter-municipal cooperation and costs: expectations and evidence", *Public Administration*, vol. 93, n. 1, pp. 52-67.
- BENITO B., GUILLAMÓN M.D., RÍOS, A.M. (2021), "Transparency and efficient management in local governments", *Cities*, vol. 115.
- CATLAW T.J., STOUT M. (2016), "Governing small-town America today: The promise and dilemma of dense networks", *Public Administration Review*, vol. 76, n. 2, pp. 225-229.
- CRISTOFARO M., GIANNETTI F. (2021), "Heuristics in entrepreneurial decisions: a review, an ecological rationality model, and a research agenda", *Scandinavian Journal of Management*, vol. 37, n. 3.
- DIMITRIJEVSKA-MARKOSKI T., NUKPEZAH J.A. (2022), "Determinants of network effectiveness: evidence from a benchmarking consortium", *International Journal of Public Sector Management*, vol. 35, n. 1, pp. 61-75.
- DOUGHERTY JR G.W., EASTON J. (2011), "Appointed public volunteer boards: exploring the basics of citizen participation through boards and commissions", *The American Review of Public Administration*, vol. 41, n. 5, pp. 519-541.
- FATIMAH H., SURYADI B., JAMALUDDIN J. (2023), "The Process of Making Village Regulations in the Rimba Sari Village Council", *International Journal of Social Science Research and Review*, vol. 6, n. 2, pp. 428-433.
- GIACOMINI D., SANCINO A., SIMONETTO A. (2018), "The introduction of mandatory intermunicipal cooperation in small municipalities: preliminary lessons from Italy", *International Journal of Public Sector Management*, vol. 31, n. 3, pp. 331-346.
- HIDAYAT R., HENDRA H., IPTIDAIYAH M. (2019), "The steep road to institutionalizing negotiable governance in the management of village development", *Journal of Governance*, vol. 4, n. 1, pp. 45-67.
- JAYAWARSA A.K., PURNAMI A.S., SAPUTRA K.A.K. (2021), "Meaning the economic existence and financial management of the small organization of a traditional village in Bali", *International Journal of Business, Economics and Law*, vol. 24, n. 5, pp. 8-15.
- KASYMOVA J.T., SCHACHTER H.L. (2014), "Bringing participatory tools to a different level: a case study of local participatory practices in Kyrgyzstan", *Public Performance & Management Review*, vol. 37, n. 3, pp. 441-464.
- KLIJN E.H., KOPPENJAN J. (2015), *Governance networks in the public sector*, Routledge, London.
- KOLIBA C.J., MEEK J.W., ZIA A., MILLS R.W. (2017), *Governance networks in public administration and public policy*, Routledge, New York, NY.
- KONDRATYEV M.V., FADEEVA O.P. (2021), "Practices of Public Participation in Local Self-Governance: case Studies of Siberian Villages", *Regional Research of Russia*, vol. 11, pp. 605-612.
- LARA-RUBIO J., NAVARRO-GALERA A., BUENDÍA-CARRILLO D., GOMEZ-MIRANDA M.E. (2022), "Analysing financial risks of local governments to design sustainability policies for public services: an empirical study by the population size", *Cities*, vol. 128.
- LIU J., WANG X., HOU Y. (2022), "The Impact of Village Cadres' Public Service Motivation on the Effectiveness of Rural Living Environment Governance: An Empirical Study of 118 Chinese Villages", *SAGE Open*, vol. 12, n. 1.
- LIU P., HAN A. (2023), "How Does Community Leadership Contribute to Rural Environmental Governance? Evidence from Shanghai Villages", *Rural Sociology*, vol. 88, n. 3, pp. 856-894.
- NAVEED S., AZHAR A. (2022), "Structure, governance and challenges of networks in the public sector: the case of the power network in Pakistan", *International Journal of Public Sector Management*, vol. 35, n. 1, pp. 16-33.
- OECD (2018), *Key data on Local and Regional Governments in the European Union*, OECD, Paris, available at: www.oecd.org/regional/regional-policy (accessed 01 January 2024).
- PAMUNGKAS I.D., WAHYUDI S., ACHMAD T. (2020), "Whistleblowing system and fraud early warning system on village fund fraud: the Indonesian experience", *International Journal of Environmental Science*, vol. 5.

- PERA A. (2021), “One House for €1: case Studies on the Governance of Abandoned Properties in Small Villages”, *Global Jurist*, vol. 21, n. 3, pp. 537-560.
- POWE N. A., CONNELLY S., NEL E. (2022), “Planning for small town reorientation: key policy choices within external support”, *Journal of Rural Studies*, vol. 90, pp. 65-75.
- PREVITALI P. (2015), “The Italian administrative reform of small municipalities: state-of-the-art and perspectives”, *Public Administration Quarterly*, vol. 39, n. 4, pp. 548-568.
- PROVAN K.G., KENIS P. (2008), “Modes of Network Governance: structure, Management, and Effectiveness”, *Journal of Public Administration Research and Theory*, vol. 18, n. 2, pp. 229–252.
- SARA I.M., SAPUTRA K.A.K. (2021), “Socialization of the implementation of good village governance and sustainability village credit institutions: community service in Pejeng Village, Tampaksiring district, Gianyar Regency, Bali”, *International Journal of Business, Economics and Law*, vol. 24, n. 4, pp. 58-65.
- SOFYANI H., YAYA R., SALEH Z. (2023), “Transparency and community trust in village government: does corruption perception matter?”, *Financial Accountability & Management*, vol. 39, n. 2, pp. 355-374.
- SONBAY Y.Y., TJAHJADI B., NARSA I.M. (2022), “Cultural challenges in implementing village funds management system in achieving good village governance”, *International Journal of Public Sector Performance Management*, vol. 10, n. 1, pp. 90-102.
- STATISTA (2019), *Number of cities, towns, and villages (incorporated places) in the United States in 2019, by population size*, available at: <https://www.statista.com/statistics/241695/number-of-us-cities-towns-villages-by-population-size/> (accessed 02 January 2024).
- STEENBERGEN D.J. (2016), “Strategic customary village leadership in the context of marine conservation and development in Southeast Maluku, Indonesia” *Human Ecology*, vol. 44, pp. 311-327.
- TAN Q., QIUSHUI X. (2007), “Village Election and Governance: do villagers care?”, *Journal of Contemporary China*, vol. 16, n. 53, pp. 581-599.
- TANG J. GAO H., SONG X., XU H. (2023), “Convergence or divergence between small towns and villages: a perspective from changes in built-up land development intensity”, *Habitat International*, vol. 138.
- UN TOURISM (2023), “UNWTO World Tourism Barometer and Statistical Annex, November 2023”, *UNWTO World Tourism Barometer*, vol. 21, n. 4.
- UNITED NATIONS (2019), *World Urbanization Prospects The 2018 Revision*, available at: <https://population.un.org/wup/publications/Files/WUP2018-Report.pdf> (accessed February 1st, 2024).
- VITÁLIŠOVÁ K., MURRAY-SVIDROŇOVÁ M., JAKUŠ-MUTHOVÁ N. (2021), “Stakeholder participation in local governance as a key to local strategic development”, *Cities*, vol. 118.
- XIAO C., ZHOU J., SHEN X., CULLEN J., DOBSON S., MENG F., WANG X. (2022), “Rural Living Environment Governance: a Survey and Comparison between Two Villages in Henan Province of China”, *Sustainability*, vol. 14, n. 21.
- YI H., SUO L., SHEN R., ZHANG J., RAMASWAMI A., FEIOCK R.C. (2018), “Regional governance and institutional collective action for environmental sustainability”, *Public Administration Review*, vol. 78, n. 4, pp. 556-566.
- ZAGRAPAN J., SPÁČ P. (2022), “Factors of Proactive Disclosure of Information at the Local Level”, *Public Performance & Management Review*, vol. 45, n. 6, pp. 1346-1370.
- ZAITUL Z., ILONA D., NOVIANTI N. (2023), “Good Governance in Rural Local Administration”, *Administrative Sciences*, vol. 13, n. 1, pp. 1-19.
- ZHANG P., HOLZER M. (2020), “Do small local governments fare well? A survey of villages in New York”, *The American Review of Public Administration*, vol. 50, n. 1, pp. 77-91.
- ZHANG Q., YE C., DUAN J. (2022), “Multi-dimensional superposition: rural collaborative governance in Liushe Village, Suzhou City”, *Journal of Rural Studies*, vol. 96, pp. 141-153.
- ZHANG Y., LONG H., MA L., TU S., LIAO L., CHEN K., XU Z. (2019), “How does the community resilience of urban village response to the government-led redevelopment? A case study of Tangjialing village in Beijing”, *Cities*, vol. 95.

Un modello di governance ESG integrato per una strategia aziendale sostenibile

ILENIA CEGLIA¹ MASSIMO BATTAGLIA² NORA ANNESI³ FRANCESCO MERCURI⁴

Abstract

Le nuove direttive Europee sulla sostenibilità, quali la Corporate Sustainability Reporting Directive (CSR-D) e la Corporate Sustainability Due Diligence Directive (CSDDD), richiedono alle imprese di promuovere comportamenti responsabili nei confronti dell'ambiente e dei diritti umani e di informare gli stakeholder riguardo ai risultati economici, sociali e ambientali generati nello svolgimento delle attività aziendali. Queste direttive hanno aperto nuove sfide di sostenibilità e le aziende si trovano, quindi, a dover gestire diverse tensioni riguardanti gli impatti economici, ambientali e sociali. Lo scopo di questa ricerca è quello di identificare un modello per l'analisi e l'integrazione della sostenibilità nella strategia aziendale che consenta una governance "integrata" in grado di gestire le diverse aspettative degli stakeholder. Il presente lavoro è condotto attraverso un approccio di ricerca-azione che coinvolge una grande azienda italiana operante nel settore alimentare. La ricerca ha adottato un modello che ha coinvolto, direttamente o indirettamente, i membri del CdA e l'alta dirigenza, i clienti industriali e commerciali ed i consumatori finali. Il disegno di una strategia di sostenibilità è emerso, quindi, come valido strumento per guidare il CdA nella gestione di tutte le pressioni ambientali, sociali ed economiche. L'originalità della ricerca risiede nella creazione della strategia di sostenibilità considerando l'influenza della governance e le richieste degli stakeholder strategici. Il contributo manageriale riguarda la realizzazione del modello in grado di integrare gli obiettivi di sostenibilità nella governance aziendale, in linea con le indicazioni del Forum Economico Mondiale (2020).

Key words: ESG, ricerca-azione, modello di governance integrato, strategia di sostenibilità

Inquadramento della ricerca. La sostenibilità è un tema di crescente importanza all'interno dei dibattiti politici con effetti importanti sul quadro normativo. La recente normativa Europea sulla rendicontazione di sostenibilità, ovvero la Corporate Sustainability Reporting Directive (CSR-D), ha come obiettivo quello di informare gli stakeholder dei risultati economici, sociali e ambientali generati nello svolgimento delle attività aziendali, secondo quanto stabilito nel Libro Verde della Commissione (2001). La normativa amplia in modo significativo il numero di imprese tenute a notificare le informazioni sulla sostenibilità, introduce obblighi di rendicontazione più dettagliati e introduce l'obbligo di attestare la conformità della rendicontazione di sostenibilità da parte di un revisore terzo. Un'altra recente normativa è la Corporate Sustainability Due Diligence Directive (CSDDD) che impone alle imprese di gestire in modo responsabile gli impatti sociali ed ambientali lungo l'intera catena di approvvigionamento. Quindi, le recenti normative sulla rendicontazione e sulla pianificazione di politiche aziendali di sostenibilità (quali, la CSR-D e la CSDDD) stanno impattando su tutti gli aspetti della vita organizzativa e le aziende stanno valutando sempre più modi per trovare un equilibrio tra creazione di valore economico, ecologico, sociale e culturale nei loro modelli di business (Clarke, 2001). Gli stakeholder sono sempre più consapevoli dell'impatto che le imprese generano sull'ambiente e sulla società e sono sempre più interessati alle prestazioni delle aziende in termini di sostenibilità rispetto alle questioni ambientali, sociali e di governance (ESG) (Khan, 2019). Alla luce di ciò, è fondamentale che la ricerca si concentri sul ruolo della governance aziendale per guidare l'adozione e l'integrazione di pratiche sostenibili (Aguilera et al., 2021) atte a rispondere alle aspettative socioculturali. Queste richieste sono spesso incompatibili e le imprese devono gestirle simultaneamente. In questa prospettiva, la teoria del paradosso inquadra i conflitti tra obiettivi economici e socio ambientali come paradossi che vengono gestiti simultaneamente (Gao & Bansal, 2013; Hahn et al., 2015) e consente l'esplorazione di diverse soluzioni per affrontare insieme le tensioni e gli obiettivi divergenti legati alla sostenibilità (Carmin & De Marchi, 2022). Partendo dalla teoria del paradosso e considerando le diverse aspettative socioculturali

¹ Sapienza Università di Roma
e-mail: ilenia.ceglia@uniroma1.it

² Sapienza Università di Roma
e-mail: massimo.battaglia@uniroma1.it

³ Scuola Sant'Anna di Pisa
e-mail: nora.annesi@santannapisa.it

⁴ Sapienza Università di Roma
e-mail: francesco.mercuri@uniroma1.it

e commerciali legate alla sostenibilità creiamo un modello che possa supportare la corporate governance ad integrazione i principi ESG in una strategia di sostenibilità a lungo termine considerando gli aspetti ambientali, sociali ed economici.

In questo contesto, la corporate governance ha un ruolo centrale, perché descrive le strutture, i processi e le istituzioni all'interno e intorno alle organizzazioni che allocano il potere e il controllo delle risorse tra i partecipanti (Davis, 2005) e ha il potere di gestire in modo equilibrato le tensioni esistenti tra gli attori coinvolti, ovvero azionisti, management, Consiglio di amministrazione e dipendenti. L'integrazione dei criteri ESG e una buona governance aziendale contribuiscono alla creazione di valore a lungo termine (Kocmanová & Dočekalová, 2012), infatti, la corporate governance contribuisce non solo alla prosperità aziendale, ma anche alla responsabilità aziendale.

Con lo sviluppo dei mercati globali sono aumentate le aspettative e le pressioni degli investitori e di tutti gli stakeholder che richiedono standard più elevati di responsabilità, condotta e performance legate alla sostenibilità (Kocmanová & Dočekalová, 2012) che possono essere definiti dalla governance aziendale. La corporate governance ha un ruolo fondamentale perché è il sistema attraverso il quale le aziende vengono gestite e controllate (Kavaliř, 2005) e rispondono ai diritti e alle richieste degli stakeholder (Demb & Neubauer, 1992). La corporate governance, quindi, definisce obiettivi strategici di un'azienda, controlla la realizzazione degli obiettivi e informa gli azionisti sull'andamento delle attività (Cadbury, 1992) e per questo motivo ha un ruolo fondamentale nell'integrazione di obiettivi sociali, ambientali ed economici, spesso contrastanti tra loro, nella strategia aziendale di lungo periodo con l'obiettivo di creare valore economico e sostenibile (Kocmanová & Dočekalová, 2012). Tuttavia, data la varietà di interessi dei membri della governance aziendale, è possibile che la stessa società debba gestire anche i conflitti interni (Aguilera et al., 2021). In questo senso, è necessaria l'adozione di un "modello di governance integrato" (UNEP FI, 2014: 35) per gestire contemporaneamente le diverse questioni di sostenibilità che possono essere in conflitto tra loro.

Nonostante le recenti e fiorenti ricerche sulla teoria del paradosso, le sue applicazioni non hanno ancora pienamente incorporato una prospettiva strategica sistemica (Carmine & De Marchi, 2022) e ciò costituisce uno dei contributi alla letteratura di questo lavoro. La letteratura ha considerato principalmente la relazione tra governance aziendale e sostenibilità ambientale (Aguilera et al., 2021). Tuttavia, le applicazioni della teoria del paradosso non hanno ancora incluso pienamente una prospettiva sistemica strategica (Carmine & De Marchi, 2022), né la letteratura ha ancora sperimentato un "modello di governance integrato" alle questioni di sostenibilità (UNEP FI, 2014: 35). Lo studio presentato è stata, quindi, l'occasione per costruire un modello mirato a colmare queste lacune. Il modello sviluppato intende supportare la governance aziendale per integrare le questioni ESG, ed in questo senso fornisce una interpretazione operativa delle linee strategiche suggerite dal Forum Economico Mondiale (WEF) (2020).

Secondo il Forum Economico Mondiale (2020), una buona governance aziendale è in grado di sostenere la generazione di valore economico e il mantenimento della fiducia degli stakeholder e della società. In questa prospettiva, tale gestione dovrebbe integrare gli ESG nelle strategie a lungo termine attraverso sei aree di attenzione che sono:

1. Allineamento della strategia e dell'allocazione del capitale con i fattori di creazione di valore a lungo termine;
2. Internalizzazione dei fattori ESG materiali nella gestione del rischio d'impresa;
3. Rafforzamento della preparazione e la resilienza alle crisi e agli shock sistemici;
4. Collaborazione tra i CdA e il management per effettuare investimenti nella sostenibilità sociale e ambientale;
5. Preparazione del reporting tradizionale dell'azienda in modo integrato;
6. Adattamento dell'organizzazione, della composizione e dell'impegno del Consiglio a questi imperativi.

Le linee tracciate dal Forum Economico Mondiale devono essere considerate nel loro insieme al fine di garantire l'adozione di un modello di governo societario integrato che fornisca un sistema omogeneo in cui le priorità di sostenibilità siano pienamente considerate nel processo di creazione di valore e in cui i benefici per gli stakeholder siano assicurati in una prospettiva di lungo periodo (WEF, 2020; UNEP FI, 2014: 35).

Obiettivo del paper. Negli ultimi anni, accademici e professionisti hanno discusso dell'importanza della governance nella realizzazione di una strategia a lungo termine per garantire progressi verso un futuro inclusivo e sostenibile (Samans & Nelson, 2022) e creare valore coerente con le priorità ESG, al fine di rendere le organizzazioni più resilienti agli shock e alle crisi. Tuttavia, in letteratura mancano contributi operativi in cui il pensiero paradossale venga sfruttato come strategia per affrontare olisticamente l'integrazione della sostenibilità e per renderla parte della governance aziendale nel suo insieme (Carmine & De Marchi, 2022). La nostra domanda di ricerca riguarda cercare di capire se sia possibile creare una nuova strategia aziendale basata sui principi ESG attuati da una governance aziendale che orienti le scelte finanziarie e operative in maniera allineata alle aspettative e alle pressioni istituzionali (WEF, 2020) e degli stakeholder. Questa ricerca delinea un modello per l'integrazione della sostenibilità all'interno della strategia aziendale, volto a stimolare una governance in grado di gestire molteplici aspettative contrastanti (Carmine & De Marchi, 2022).

Metodologia. La ricerca si basa su un approccio di ricerca-azione adottato con una grande azienda italiana. La ricerca-azione (Cohen et al., 2017) comprende diverse caratteristiche, come il coinvolgimento con un'azienda, il suo processo interattivo, l'analisi dei cambiamenti nel tempo e la produzione di conoscenza scientifica. In questo processo il ricercatore entra in una situazione del mondo reale e mira sia a migliorarla che ad acquisire conoscenza (Checkland & Holwell, 2007) e ciò può contribuire alla pratica gestionale, così come al quadro teorico in cui si inquadra il problema osservato. In questo contesto, alcuni membri del Consiglio di amministrazione e top manager dell'azienda, in collaborazione con quattro ricercatori, hanno progettato la strategia basata sulla sostenibilità. I membri dell'organizzazione hanno contribuito attivamente all'analisi, lavorando con il gruppo di ricerca, in modo che i problemi potessero essere risolti e il sistema potesse essere migliorato. Da questo punto di vista, l'approccio adottato può essere profilato come un intervento in cui i ricercatori hanno raccolto le richieste, fornito risultati ed evidenze, e hanno

sviluppato il modello, mentre l'organizzazione ha fatto emergere i risultati e la strategia, dimostrando un certo approccio strategico nella governance aziendale. La ricerca-azione riguarda una impresa commerciale italiana operante nel settore alimentare. L'azienda è una società per azioni con un unico socio, fa parte di un grande gruppo europeo e in Italia dispone di due siti produttivi. L'azienda fattura circa 200 milioni di euro e conta circa 100 dipendenti. L'azienda ha ottenuto diverse certificazioni che provano l'alto livello di sensibilità verso le tematiche di sostenibilità, senza, tuttavia, aver adottato politiche, funzioni o specifici investimenti destinati. Subendo forti pressioni e richieste da parte dei propri stakeholder su tutte e tre le dimensioni della sostenibilità, l'impresa ha chiesto la collaborazione delle nostre istituzioni per iniziare il suo percorso verso l'integrazione della sostenibilità nelle sue strategie e pratiche quotidiane. In particolare, la competizione di mercato percepita ha rappresentato il primo tipo di pressione legata alla dimensione economica, le crescenti aspettative dei consumatori hanno delineato la pressione sociale, mentre la legislazione ha contribuito a stimolare l'organizzazione a definire un'integrazione olistica dei principi di sostenibilità, compresi gli aspetti ambientali.

Il disegno di ricerca prevedeva sette passaggi implementati in dieci mesi. La prima fase ha riguardato l'inquadramento del problema attraverso i dialoghi preparatori tra i ricercatori e i responsabili marketing e HSE, che sono stati responsabili del progetto, per comprendere lo scopo della collaborazione.

Nella seconda fase i ricercatori hanno implementato una revisione non sistematica della letteratura volta a identificare le tendenze del business riguardo all'integrazione delle questioni di sostenibilità a livello strategico e operativo. La revisione è stata condotta da due ricercatori e i risultati sono stati discussi con gli altri due ricercatori al fine di condividere dubbi, ridurre errori o ridondanze. Il risultato finale di questa fase è stata una lista composta da cento domande che valutavano il livello di maturità dell'azienda. La check list indaga dieci aree strategiche: innovazione sostenibile nel ciclo di vita del prodotto, sostenibilità degli imballaggi, etica e sostenibilità nella Supply Chain Management, politiche e pratiche di sostenibilità, etica nella gestione del personale e tutela dei diritti umani, gestione energetica e cambiamento climatico, gestione dei rifiuti, gestione delle risorse idriche, strategie di marketing e comunicazione, e infine, contributo alle comunità locali. La check list è stata, inoltre, discussa con i responsabili interni del progetto, per identificare eventuali integrazioni o per standardizzare le terminologie.

La terza fase ha riguardato la raccolta dei dati che è avvenuta grazie alle interviste che i ricercatori hanno condotto con dodici rappresentanti della Società. Quattro di loro erano membri del CdA (presidente, vicepresidente e due membri del CdA) e otto erano top manager (Amministratore delegato, Direttore generale, Manager delle risorse umane, Responsabile della catena di fornitura, Responsabile HSE, Responsabile del controllo qualità, Marketing Manager e Direttore delle vendite). Le interviste sono state effettuate sulla base di protocolli semi-strutturati finalizzati ad approfondire gli argomenti elencati nella check list e a identificare i rischi e le opportunità percepiti nell'implementazione di una strategia basata sulla sostenibilità. Ogni intervista è stata registrata e successivamente trascritta. Ciascuna trascrizione è stata, poi, validata dall'intervistato.

Nella quinta fase i ricercatori, i manager e i membri del CdA hanno lavorato insieme per identificare i clienti strategici. Analizzando tutti i canali di divulgazione disponibili (siti istituzionali, social network e, ove possibile, bilanci di sostenibilità), i ricercatori hanno individuato i temi prioritari per trenta clienti strategici dell'azienda che si occupano di sostenibilità. La selezione della clientela ha riguardato sia imprese industriali che commerciali, in particolare, diciotto imprese industriali e dodici commerciali. Il risultato finale di questa fase è stato un elenco di priorità dei clienti basate sulla sostenibilità.

Nella sesta fase sono stati coinvolti i consumatori finali, per raccogliere informazioni sulla loro percezione di sostenibilità e consumo responsabile. Questa ricerca è stata finalizzata ad analizzare le tendenze future rispetto ai temi legati alla sostenibilità. Ha coinvolto 1.005 consumatori. Il risultato è stato una descrizione della segmentazione della domanda, con un focus particolare sul ruolo dell'etica e della sostenibilità nelle preferenze di acquisto.

Questa analisi ha aiutato i ricercatori a identificare le potenziali aree di miglioramento mirate nella gestione delle pressioni complessive.

Infine, nell'ultima fase, i ricercatori, in stretta collaborazione con il direttore generale, il direttore marketing e il vicepresidente del CdA, hanno delineato una serie di obiettivi strategici volti a collegare tutti i risultati emersi dalle analisi sia interne che esterne. Tale proposta, denominata "strategia aziendale basata sulla sostenibilità" è stata elaborata secondo i pilastri ESG e la visione aziendale e, poi, presentata e condivisa nel CdA.

Risultati. Il metodo descritto ha portato alla progettazione di un modello per l'integrazione sistematica delle tensioni di sostenibilità che l'azienda deve affrontare nella sua gestione. La strategia è stata concepita come un insieme di iniziative a lungo termine. Nei prossimi anni l'impresa dovrebbe agire per l'adozione di queste iniziative considerando costantemente l'insieme dei suggerimenti emersi. Per quanto riguarda i contenuti complessivi della strategia, in sintesi, le principali iniziative rilevanti possono essere suddivise nelle tensioni legate alla sostenibilità sociale, ambientale ed economica che vengono spiegate di seguito, in dettaglio.

Le tensioni legate alla dimensione sociale sono state rilevate durante le interviste con i membri dell'impresa, nonché attraverso la consultazione dei consumatori. Come descritto, parte delle tensioni sociali erano legate alle aspettative dei consumatori riguardo al rispetto dei diritti sociali delle comunità locali e alle condizioni di lavoro dei dipendenti.

In particolare, il CdA si è concentrato principalmente sui dipendenti e sulle comunità locali. La valorizzazione delle potenzialità delle risorse umane è stata affrontata dalla strategia attraverso la definizione di specifiche linee dedicate all'apprendimento continuo dei dipendenti e l'adozione di sistemi di valutazione del personale, anche considerando l'impegno del lavoratore nell'acquisizione di nuove competenze o conoscenze.

Un'altra area di debolezza emersa dalle interviste era relativa ai rapporti con le comunità locali. Nella strategia sono emerse linee volte a promuovere una consultazione della comunità in cui l'impresa opera per rilevare aspettative e bisogni. In questa prospettiva è emersa come rilevante l'esigenza di un rapporto più stretto con le istituzioni locali, nonché di un più stretto collegamento con le associazioni dei cittadini. Azioni filantropiche e di collaborazione con le scuole locali per promuovere iniziative di formazione e tirocinio hanno rappresentato le proposte più rilevanti.

Le testimonianze dei clienti hanno sottolineato l'importanza di prestare attenzione al controllo etico delle catene di fornitura, con particolare attenzione alle condizioni di lavoro dei fornitori. In questa prospettiva la strategia fa riferimento all'adozione di una procedura di selezione dei fornitori basata su sistemi di controllo che includano criteri sociali e ambientali nell'ambito dei processi di accreditamento.

Per quanto riguarda le tensioni legate alla dimensione ambientale, esse si sono concentrate principalmente su questioni legate all'energia e alla catena di fornitura. Per quanto riguarda l'energia, è stato proposto un piano di ammodernamento degli edifici volto ad aumentare l'efficienza energetica.

Per quanto riguarda la gestione della catena di fornitura, ancora una volta, sia i clienti B2B che i consumatori, hanno sottolineato l'importanza dell'implementazione di sistemi di controllo della sostenibilità sui fornitori di beni (come audit di seconda parte), al fine di garantire la tracciabilità e il profilo verde dell'intera catena di fornitura.

Infine, sempre nell'ottica della logistica, la strategia si è concentrata sul miglioramento dell'efficienza del trasporto degli alimenti attraverso l'utilizzo dei treni come principale mezzo di trasporto.

Infine, le tensioni legate alla dimensione economica hanno riguardato soprattutto la competizione di mercato. Secondo la strategia proposta, la definizione di pratiche più sostenibili dovrebbe essere la base di un piano di comunicazione volto a costruire un branding di sostenibilità sociale e ambientale.

La strategia di comunicazione dovrebbe valorizzare, ad esempio, il raggiungimento delle Dichiarazioni Ambientali di Prodotto (EPD), sottolineando il rigore scientifico adottato nel calcolo degli impatti prodotti lungo l'intero ciclo di vita (prospettiva LCA). L'impegno complessivo verso una corretta comunicazione sulle strategie adottate dovrebbe rivolgersi a quell'89% dei consumatori che dichiarano di essere disposti a spendere di più per una confezione in materiale riciclato.

Limiti della ricerca. Sebbene la ricerca abbia un approccio strategico e fornisca un modello interessante, è ancora in una fase iniziale e necessita di ulteriori verifiche di efficacia, che dovranno essere valutate nel medio termine. In questa prospettiva, per mantenere un miglioramento continuo, sarebbe interessante verificare gli effetti di lungo termine dei piani delle aziende, per monitorare la crescita del loro contributo agli obiettivi di sostenibilità, misurando gli indicatori ESG nel tempo. Pertanto, si potrebbe condurre uno studio longitudinale. Gli effetti del modello implementato potrebbero, infine, essere testati osservando le dinamiche finanziarie o l'evoluzione dell'indice di fiducia dei consumatori avvenuta dopo l'integrazione del modello stesso.

Implicazioni manageriali. Il modello aziendale integrato proposto offre alle aziende un quadro per integrare una strategia sostenibile che soddisfi le richieste degli stakeholder e massimizzi il valore sociale. Incorporando i principi ESG, come quelli che emergono dal nostro modello, le aziende possono affrontare le molteplici sfide legate alla sostenibilità. In quest'ottica, la ricerca contribuisce alla comprensione della teoria del paradosso per esplorare come le organizzazioni possono sviluppare strategie per affrontare le diverse tensioni che sono legate alla sostenibilità aziendale simultaneamente (Carmin & De Marchi, 2022). Inoltre, il modello proposto consente di navigare nella complessità della sostenibilità e di promuovere un approccio olistico all'integrazione della sostenibilità nella governance aziendale, che manca in letteratura (Fineman, 1997; Friedman, 1992; Lee & Rhee, 2007; Rothenberg, 2007).

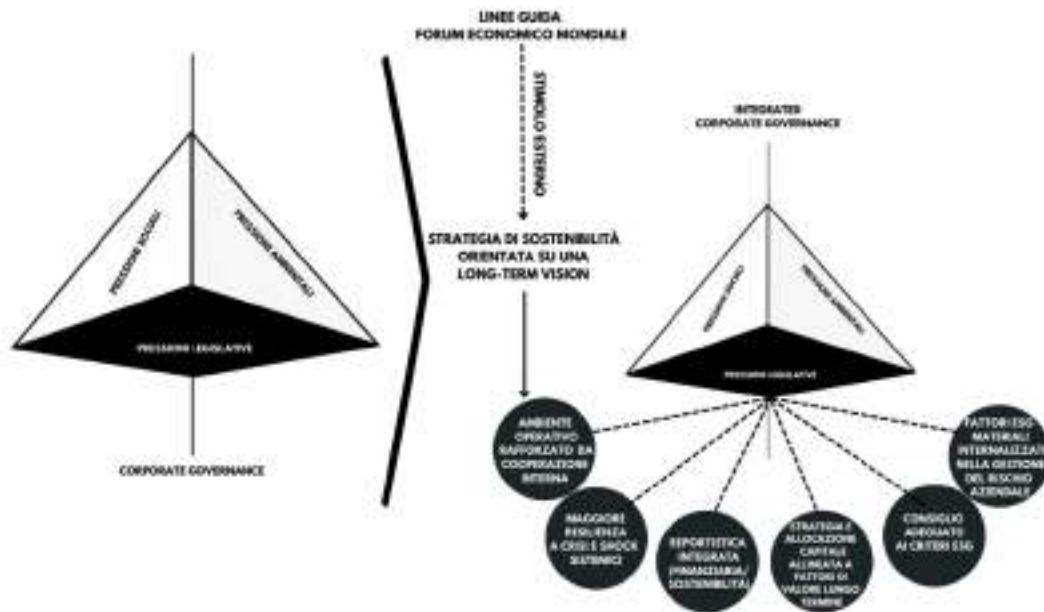
Da un punto di vista gestionale, il modello aiuta a valutare l'attuale livello di sostenibilità aziendale e a guidare lo sviluppo di strategie di sostenibilità a lungo termine basate sui principi ESG. Supporta, inoltre, la predisposizione dell'informativa societaria in linea con la nuova EU CSRD, combinando il reporting con le informazioni sui rischi e sulle opportunità ESG. Si tratta, inoltre, di un primo supporto nello sviluppo di approcci innovativi di governance finalizzati alla gestione etica della catena di fornitura, in conformità a quanto suggerito dal CSDDD. Il modello fornisce un quadro per le iniziative future e aiuta le organizzazioni ad allineare i propri obiettivi interni con gli obiettivi di sostenibilità.

Originalità del paper. La nostra ricerca si concentra sulla proposta di un modello di governance aziendale integrato che delinei una strategia d'azione per integrare e rafforzare il valore sostenibile a lungo termine per gli azionisti e gli stakeholder. Il modello sottolinea l'importanza di dare priorità ai principali stakeholder del mercato, come clienti e consumatori, e cerca di prevedere e bilanciare le tensioni legate alla sostenibilità.

Aderendo alla teoria del paradosso, è fondamentale riconoscere che i meccanismi di governance sono generalmente contraddittori, poiché sono alle prese con la sfida di conciliare gli elementi incentrati sugli azionisti e quelli incentrati sugli stakeholder. Poiché le pressioni descritte agiscono sulle aziende in relazione alla loro dimensione e non in relazione al loro settore, il modello presentato può essere applicato ad altre organizzazioni che si trovano ad affrontare gli stessi obblighi legislativi.

Il nostro approccio prevede, quindi, un modello di Corporate Governance Integrato che si può riassumere nella seguente figura.

Figura 1 - Modello di Governance ESG Integrato



Fonte: Elaborazione degli Autori.

References

- AGUILERA R.V., ARAGÓN-CORREA J.A., MARANO V., TASHMAN P.A. (2021), "The corporate governance of environmental sustainability: A review and proposal for more integrated research", *Journal of Management*, vol. 47, n. 6, pp. 1468-1497.
- CADBURY A. (1992), "The Committee on the Financial Aspects of Corporate Governance and Gee and Co", *Ltd. Report*, p. 61.
- CARMINE S., DE MARCHI V. (2022), "Reviewing paradox theory in corporate sustainability toward a systems perspective", *Journal of Business Ethics*, pp. 1-20.
- CHECKLAND P., HOLWELL S. (2007), "Action research: its nature and validity", *Information systems action research: An applied view of emerging concepts and methods*, pp. 3-17.
- CLARKE T. (2001), "Balancing the triple bottom line: Financial, social and environmental performance", *Journal of general management*, vol. 26, n. 4, pp. 16-27.
- COHEN L., MANION L., MORRISON K. (2017), "Action research", *In Research methods in education*, pp. 440-456.
- DAVIS G.F. (2005), "New directions in corporate governance", *Annu. Rev. Sociol.*, vol. 31, pp. 143-162.
- DEMB A., NEUBAUER F.F. (1992), "The Corporate Board-Confronting The Paradoxes", *New York, Oxford University Press 1992*.
- FINEMAN S. (1997), "Constructing the green manager", *British Journal of Management*, vol. 8, n. 1, pp. 31-39.
- FRIEDMAN F.B. (1992), "The changing role of the environmental manager", *Business Horizons*, vol. 35, n. 2, pp. 25-28.
- GAO J., BANSAL P. (2013), "Instrumental and integrative logics in business sustainability", *Journal of Business Ethics*, vol. 112, n. 2, pp. 241-255.
- HAHN T., PINKSE J., PREUSS L., FIGGE F. (2015), "Tensions in corporate sustainability: Towards an integrative framework", *Journal of Business Ethics*, vol. 127, n. 2, pp. 297-316.
- KAVALÍŘ P. (2005), "Hodnocení corporate governance v České republice. Centrum ekonomických studií VŠEM", *Working Paper CES VŠEM*, n. 14.
- KOCMANOVÁ A., DOČEKALOVÁ M. (2012), "Construction of the economic indicators of performance in relation to environmental, social and corporate governance (ESG) factors", *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, vol. 60, n. 4, pp. 195-206.
- KHAN M. (2019), "Corporate governance, ESG, and stock returns around the world", *Financial Analysts Journal*, vol. 75, n. 4, pp. 103-123.
- LEE S.Y., RHEE S.K. (2007), "The change in corporate environmental strategies: A longitudinal empirical study", *Management Decision*, vol. 45, n. 2, pp. 196-216.
- ROTHENBERG S. (2007), "Environmental managers as institutional entrepreneurs: The influence of institutional and technical pressures on waste management", *Journal of Business Research*, vol. 60, n. 7, pp. 749-757.
- SAMANS R., NELSON J. (2022), "Sustainable enterprise value creation: Implementing stakeholder capitalism through full ESG integration", *Springer Nature*, p. 289.
- UNITED NATIONS ENVIRONMENT PROGRAMME FINANCE INITIATIVE (UNEP) (2014), "Integrated governance: A new model of governance for sustainability" <https://www.unepfi.org/publications/investment-publications/integrated-governance-a-new-model-of-governance-for-sustainability-2>
- WEF - WORLD ECONOMIC FORUM (2020), "Integrated Corporate Governance: A Practical Guide to Stakeholder Capitalism for Boards of Directors", http://www3.weforum.org/docs/WEF_Integrated_Corporate_Governance_2020.pdf.

Does female corporate leadership improve environmental performance? A systematic literature review.

MARIA ROSA DE GIACOMO¹ MARCO FREY²

Abstract.

A part of the management literature has paid attention to the effects of governance mechanisms on business performance. Among the governance aspects investigated, gender diversity can be mentioned. In addition to financial performance, the attention to sustainable performance – the ability of organizations to achieve their business and create value, considering long-term economic, environmental, and social responsibility – has gained even more importance in the business sector. However, a limited part of the literature explores the effects of female leadership on sustainable performance at a business level, specifically on the environmental dimension of performance. Understanding the effects that female corporate leadership may have on the environmental performance of organizations is pivotal, considering two aspects: i) the relevance of improving gender balance at the societal and business level and ii) the impact that environmental challenges will have on corporate strategies.

This paper presents ongoing research based on a systematic literature review. The aim is to elucidate the current research on corporate female leadership and the effects on environmental performance at a business level. The review also aims to identify existing literature gaps and offer opportunities for further research. The preliminary findings of our review, based on a sample of 128 articles, indicate an increasing recent interest in the research on these topics. Moreover, most studies show a positive relationship between corporate female leadership and environmental performance at a business level. The existing literature identified multiple reasons that explain why gender diversity in top management positively affects the environmental performance of organizations.

We aim to identify some opportunities for further research on this topic, such as exploring the relationship between corporate female leadership and environmental performance more qualitatively and measuring the effects on single components of environmental performance. Additionally, further examination of the role that a critical mass of women on the board has in the relationship is encouraged.

This review contributes to understanding the role that a higher level of gender balance in companies may have in improving environmental performance at a corporate level, providing valuable insights to inspire future studies and to inform managers and policymakers.

Keywords: Female Corporate Leadership, Environmental Performance, Female on Board, Review.

Framing of the research. Sustainable performance has gained even more importance in business (Al-Abbadi and Abu Rumman, 2023). The literature highlights that corporate governance should be pivotal in achieving better performance, which is also confirmed for sustainability performance (Khan and Ghouri, 2022). There is an increasing research interest in topics such as the role of women at the corporate level (Terjesen and Singh, 2008; Baker et al; 2020; Green and Homroy, 2018) and the effects that women in business may have on performance (Yang et al., 2019; Khatib et al., 2021; Arora, 2022). Moreover, the literature also pays even more attention to the role that females in business may have on corporate social responsibility performance (e.g., Hyun et al., 2022; Bose et al., 2022), “in line with the triple bottom line approach, based on economic, social, environmental aims.

In this framework, the importance of the environmental dimensions of sustainability (and the related performance) at a business level is also particularly crucial. Environmental challenges related to climate change and the need for a net-zero transition, biodiversity preservation, or improving energy efficiency are only some sustainability challenges that require concrete actions and strategies from companies. At the same time, national, European, and international policymakers are increasing their attention to environmental issues and how companies must address them.

Purpose of the paper. Recent research has highlighted the importance of exploring corporate governance mechanisms to understand their effects on sustainable performance at a business level (Chijoke-Mgbame et al., 2020; Harjoto and Jo, 2011; Shaukat et al., 2016). Management scholars are even more interested in understanding whether and how corporate female leadership influences sustainability performance at a company level, especially the

¹ Sant’Anna School of Advanced Studies, Pisa
e-mail: mariarosa.degiacomo@santannapisa.it

² Sant’Anna School of Advanced Studies, Pisa
e-mail: marco.frey@santannapisa.it

environmental performance dimension of businesses. At the same time, we do not find any systematic literature review (SLR) on the relationship between corporate female leadership and the environmental dimensions of sustainable performance.

The aim of the review is to understand the main existing findings in the academic debate on the relationship between corporate female leadership and the environmental performance at a business level. Moreover, we aim to shed light on what are the main gender diversity dimensions explored by the literature and the environmental performance aspects considered.

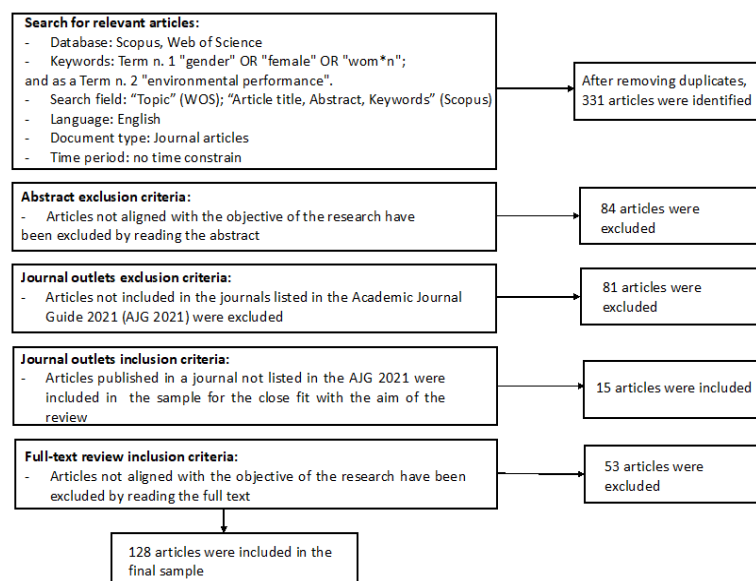
This review is based on a broad definition of environmental performance, including, for example, an ameliorate performance at a business level on waste management, on CO2 emissions, on environmental innovation, on environmental disclosure, or on the sustainability of supply chain, or on environmental-friendly products, processes or services, for example.

Methodology. We adopt a systematic literature review (SLR) methodology to review the existing literature on the relationship between female corporate leadership and environmental performance. SLR is considered a rigorous method, and it can produce reliable knowledge (Tranfield et al., 2003) and ensure a comprehensive account of the literature (Rosseau et al., 2008). It provides both the research design's replicability and the review process's transparency.

The SLR we adopted in this study has been based on two central databases, Scopus and Web of Science (WOS), "as they are considered complete databases (Linnenluecke et al., 2020) because they cover a high number of fields and ensure a wide range of articles. A set of keywords was used in the search title "Topic" for WOS and in "Article title, Abstract, Keywords" for Scopus to ensure all relevant articles were included in the research, including as term n. 1 "gender" OR "female" OR "wom*n"; AND as a term n. 2 "environmental performance". To do a comprehensive review, we decided not to limit the timeframe of the research. Therefore, the SLR is updated to the 26th of January 2024, when the data collection on the two databases has been completed. The research allowed us to select 331 (excluding duplicates extracted from the two databases). With the aim to reduce the risk of bias, all abstracts have been read by two researchers to see if the articles aligned with the review's scope. The research team has been trained for that specific task. To that purpose, 20 articles have been assessed by two researchers to test any alignment or misunderstanding on the review protocol and criteria. After that, the main findings were discussed in the research team to see any inconsistencies and define the correct process to follow before proceeding with the review of the other articles of the sample. That process allowed us to exclude 84 articles. Then, to ensure a high quality of business and management studies, we decided to focus our review on articles published in the Academic Journal Guide 2021 (AJG). The AJG's ratings are based upon peer review, editorial and expert judgements following the evaluation of hundreds of publications, and they are informed by statistical information relating to citations. The AJG is distinctive in that, unlike other journal ratings, it is not based purely on a weighted average of journal metrics. Instead, the AJG is informed by metrics. The ratings of journals reflect the outcomes of consultations carried out by the subject experts of the Scientific Committee with expert peers and scholarly associations as to the relative standing of journals in each subject area (Chartered Association of Business Schools, 2024).

Moreover, we decided to add articles published in the Sustainability journal as those studies aligned with the review's objective – even if that journal is not listed in AJG. Then, 181 full-text articles were read to examine their alignment with the objective of the review – that is, to explore the relationship between corporate female leadership and environmental performance at the business level. As a result of the full-text reading, 53 have been excluded. Therefore, the final sample of this SLR consisted of 128 papers. The steps of article selection are described in Figure n. 1.

Figure 1 Systematic literature review process.



Source: our elaboration

The research team used a shared spreadsheet to categorize the articles based on some information, such as year of publication, journal outlet, kind of research method used, gender leadership dimension considered, environmental performance dimensions considered, and the nature of the relationship between the corporate female leadership and the environmental performance. Other information will be categorized in the coming weeks as this project is ongoing.

Building upon this list, the research team conducted a qualitative analysis by coding the relevant information and data from the articles' text. The coding process has been discussed with the research team, and the coding has been reviewed and assessed more times to check for errors and inconsistencies.

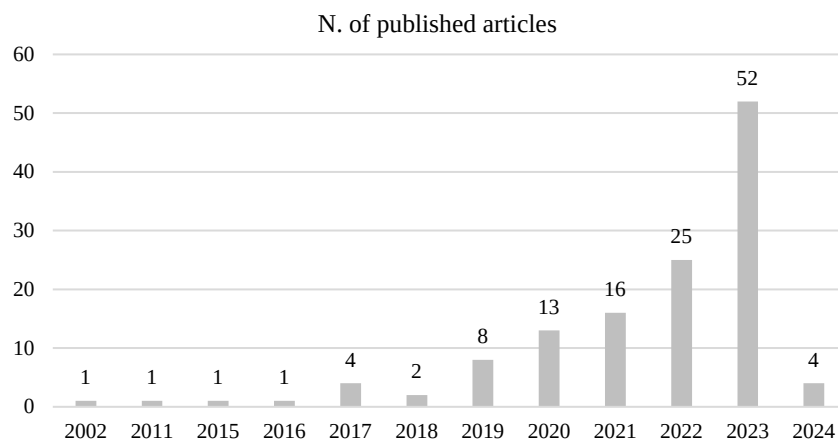
Results

Descriptive analysis.

Time frame, journals and research methods.

The research area on the effects of corporate female leadership on environmental performance at a business level has been receiving increasing attention among scholars in the last few years, as demonstrated by Figure 2. More than 40% of the sample papers have been published very recently, in 2023, and around 20% in the previous year, in 2022. We have to consider that in 2024, there are four papers in the sample that refer to the time of data collection (end of January 2024). It is also worth noting that until 2018, the topic was not explored extensively in the literature.

Figure 2. The timeframe of the sample articles



Source: our elaboration

The increasing scientific community's attention on the relationship between corporate female leadership and environmental performance at a business level is also shown by the wide range of journals interested in this kind of research. Indeed, the 128 papers of the sample have been published in 48 diverse journals (Table 1). The most relevant journals for the topic of this review are *Business Strategy & the Environment*, *Corporate Social Responsibility and Environmental Management*, and *Sustainability*.

Table 1. Academic journals.

Journal title	N. of papers
BUSINESS STRATEGY AND THE ENVIRONMENT	26
CORPORATE SOCIAL RESPONSIBILITY AND ENVIRONMENTAL MANAGEMENT	18
SUSTAINABILITY	12
JOURNAL OF CLEANER PRODUCTION	6
JOURNAL OF BUSINESS ETHICS	5
FINANCE RESEARCH LETTERS	4
TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE	4
SOCIAL RESPONSIBILITY JOURNAL	3
JOURNAL OF MANAGEMENT & GOVERNANCE	3
ACCOUNTING AND FINANCE	3
JOURNAL OF MANAGEMENT & ORGANIZATION	2
CORPORATE GOVERNANCE-THE INTERNATIONAL JOURNAL OF BUSINESS IN SOCIETY	2
EUROMED JOURNAL OF BUSINESS	2
JOURNAL OF INTERNATIONAL FINANCIAL MARKETS INSTITUTIONS & MONEY	2
JOURNAL OF ACCOUNTING IN EMERGING ECONOMIES	2
BRITISH ACCOUNTING REVIEW	2
OTHERS (32 journals with one published paper each)	32

Source: our elaboration

Regarding the method adopted by the papers, most articles (around 91%) use a quantitative method to analyze the relationship between corporate females and environmental performance at a business level. Only 2% used a qualitative approach, while the remaining part (7%) adopted a mixed approach based on both qualitative and quantitative methods.

The corporate female leadership: what aspects have been considered?

We found in our sample that multiple dimensions of corporate female leadership have been explored, such as the presence of females on board, the female CEO, or the presence of females in other top management roles. Most analysed studies focused on the female board of directors' dimension (around 80% of the papers). Another part of the papers considers both females on board and females in top management aspects in the same study (10% of the sample's studies), "while a minor part of the sample investigated the female in the top management dimension (9%), "or the female on board and female advisors' dimensions together in the same study (one single paper).

The environmental performance: what aspects have been considered?

There are multiple variables that the 128 papers have been used to measure environmental performance.

We include a summary of environmental performance dimensions based on our elaboration and some examples in Table 2:

Table 2. The environmental performance dimensions

<i>Environmental performance: dimensions</i>	<i>Examples</i>
Indexes/ratings used as proxies of the environmental performance	- Indicators of the Global Reporting Initiative (GRI) - Indexes of the Refinitiv Eikon database - Carbon Disclosure Project (CDP) score - Thomson Reuters ESG score - Thomson Reuters ASSET4 environmental pillar - ENVIP, environmental disclosure index - Sustainalytics, environmental performance score - MSCI ESG STATS - VigeoEiris environmental score
Climate change	- Carbon emissions (CO2 or GHG emissions) - Disclosure on carbon aspects - Carbon performance
Resource use	- Water consumption - Energy consumption - Renewable energy use - Resource management - Waste management
Innovation	- Sustainable innovation - Eco-innovation - Green patents - Initiatives directed toward maintaining and protecting the environment - Environmental spending - Product innovation - Process innovation
Supply chain	- Sustainability of supply chains - Environmental supply chain initiatives
SDG	- Reference to Sustainable Development Goals linked to environmental aspects
Biodiversity	- Preservation of biodiversity - Mitigation impacts on biodiversity - Impacts on ecosystems
Certification	- Environmental Management Systems (ISO14001)
Disclosure	- Disclosure of non-financial information - Disclosure of climate change aspects
Other	- Greenwashing - Corporate environmental misconduct/damage - Environmental awareness - Revenues from green offering - Other environmental initiatives - Etc.
More environmental aspects	More environmental aspects among those indicated above are considered together

Source: our elaboration

To summarize, we found a broad representation of different variables and measures that have been analysed in the papers to represent environmental performance. Moreover, sometimes, we found that within a unique paper, multiple dimensions of environmental performance have been explored. In the case of indexes and ratings used as a proxy of

environmental performance, for example, the effect of corporate female leadership is examined with reference to multiple dimensions of the environment. The limit is that it is not possible to isolate that effect based on the single environmental measures and variables that compose the indexes.

Thematic analysis: the relationship between corporate female leadership and environmental performance.

The review shows that most of the analysed studies found a positive relationship between corporate female leadership and environmental performance at a business level. Specifically, 70% of studies argued that female leadership positively affects the environmental dimensions investigated. The investigated studies reported multiple reasons explaining the positive relationship between the two variables. For that reason, we categorized qualitatively the main motivations that the analysed papers included to explain the positive effects of corporate female leadership on environmental performance in some components: 1. High engagement of women in communication and disclosure (and/or in higher quality disclosure and reporting); 2. High sensitivity or commitment of women towards risks, environmental issues, ethical or social aspects, and more ethical behaviour; 3. The capacity of women to define relationships with the relevant community of stakeholders or to defend the interests of the relevant community and stakeholders, and other capacities of females in doing networks; 4. Women are more inclined towards environmental innovation; 5. Women can promote diverse perspectives or experiences and knowledge on board and have the capacity to take a leadership role in Corporate Social Responsibility (CSR) aspects; 6. Women have specific useful competencies, such as experience and, knowledge, and resources.

Some studies (16% of the sample) found a mixed relationship. Twelve percent of the analyzed papers do not find any effects of female leadership on environmental performance, while only a minor part of the sample (2% of the papers) found a negative relationship between women's leadership and environmental performance.

Expected results and suggestions for future research.

As the review is an ongoing process, we aim to analyse if investigated studies paid attention to the role that the presence of a critical mass of women leadership (e.g., the presence of a critical mass in the board) have in explaining the relationship between corporate female leadership and environmental performance. In any case, future research on this topic may explore more in-depth that aspect.

We will also explore if there are differences between females on board and another female leadership role (e.g., females in other top management roles) in the relationship with environmental performance.

As preliminary findings of our review highlighted, the sample of papers is mainly based on quantitative methods, future researchers may explore the investigated topic more extensively using qualitative approaches, such as case studies (Eisenhardt, 1989).

Research limitations. The review aims to study the relationship between corporate female leadership and a specific dimension of sustainable performance, the environmental one. This study does not deeply explore the other dimensions of sustainability, namely, the economic and social ones. Our main findings are thus only generalizable to some dimensions of sustainability performance. For those reasons, the replication of the review for social and economic dimensions of sustainability performance would be suggested.

Moreover, the review is based on a qualitative analysis of the sample of papers. A review of the effects of corporate female leadership on environmental performance based on different methods, i.e., on quantitative methodologies, can be carried out.

Managerial implications. The study has some important implications for companies and policymakers. Our review shed light on the effects of female corporate leadership on environmental performance. Most analysed papers highlighted that women in leadership roles positively impact companies' environmental performance. Understanding that a higher level of gender diversity representation in the top management has positive effects at the business level may encourage companies to promote gender diversity in their organizations. Managers should also focus more on specific governance strategies and mechanisms to address environmental issues. Moreover, our findings may interest legislators and regulators in considering setting quotas or incentivizing organizations to increase their gender diversity.

Originality of the paper. The review makes an original contribution to the literature on corporate governance and sustainability performance, as well as to the studies exploring female leadership's role in businesses. While extant similar reviews have mainly focused on the effects of female leadership on financial performance, to the best of our knowledge, no review exists on the impact of female corporate leadership on the specific environmental dimension of sustainable performance. Moreover, we offer a comprehensive review that analyses and synthesizes previous literature on the effects of female corporate leadership on environmental performance at a business level. Our review can stimulate novel research questions and aspects to be explored in that research area.

Our study also enables us to appreciate governance aspects and their effects at the intersection between the social dimensions (i.e., the gender aspects) and the environmental dimensions (i.e., environmental business performance) of sustainability.

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References

- AL-ABBADI L.H., ABU RUMMAN A.R. (2023), “Sustainable performance based on entrepreneurship, innovation, and green HRM in e-Business Firms”, *Cogent Business & Management*, vol. 10, n. 1, 2189998.
- ARORA A. (2022), “Gender diversity in boardroom and its impact on firm performance”, *Journal of Management and Governance*, vol. 26, n. 3, pp. 735-755.
- BAKER H.K., PANDEY N., KUMAR S., HALDAR A. (2020), “A bibliometric analysis of board diversity: Current status, development, and future research directions”, *Journal of Business Research*, vol. 108, pp. 232-246.
- BOSE S., HOSSAIN S., SOBHAN A., HANDLEY K. (2022), “Does female participation in strategic decision-making roles matter for corporate social responsibility performance?”, *Accounting & Finance*, vol. 62, n. 3, pp. 4109-4156.
- CHIJOKE-MGBAME A.M., MGBAME C.O., AKINTOYE S., OHALEHI P. (2020), “The role of corporate governance on CSR disclosure and firm performance in a voluntary environment”, *Corporate Governance: The International Journal of Business in Society*, vol. 20, n. 2, pp. 294-306.
- EISENHARDT K.M. (1989). Building theories from case study research”, *Academy of management review*, vol. 14, n. 4, pp. 532-550.
- GREEN C.P., HOMROY S. (2018), “Female directors, board committees and firm performance”, *European Economic Review*, vol. 102, pp. 19-38.
- HARJOTO M.A., JO H. (2011), “Corporate governance and CSR nexus”, *Journal of Business Ethics*, vol. 100, pp. 45-67.
- HYUN S., KIM J.M., HAN J., ANDERSON M. (2022), “Female executive leadership and corporate social responsibility”, *Accounting & Finance*, vol. 62, n. 3, pp. 3475-3511.
- KHAN M., GHOURI A.M. (2022), “Corporate social responsibility, sustainability governance and sustainable performance: A preliminary insight”, *Asian Academy of Management Journal*, vol. 27, n. 1, pp. 1-28.
- KHATIB S.F., ABDULLAH D.F., ELAMER A.A., ABUEID R. (2021), “Nudging toward diversity in the boardroom: A systematic literature review of board diversity of financial institutions”, *Business Strategy and the Environment*, vol. 30, n. 2, pp. 985-1002.
- LINNENLUECKE M.K., MARRONE M., SINGH A.K. (2020), “Conducting systematic literature reviews and bibliometric analyses”, *Australian Journal of Management*, vol. 45, n. 2, pp. 175-194.
- ROUSSEAU D.M., MANNING J., DENYER D. (2008), “11 Evidence in management and organizational science: assembling the field’s full weight of scientific knowledge through syntheses”, *Academy of Management Annals*, vol. 2, n. 1, pp. 475-515.
- SHAUKAT A., QIU Y., TROJANOWSKI G. (2016), “Board attributes, corporate social responsibility strategy, and corporate environmental and social performance”, *Journal of Business Ethics*, vol. 135, pp. 569-585.
- TERJESEN S., SINGH V. (2008), “Female presence on corporate boards: A multi-country study of environmental context”, *Journal of Business Ethics*, vol. 83, pp. 55-63.
- TRANFIELD D., DENYER D., SMART P. (2003), “Towards a methodology for developing evidence-informed management knowledge by means of systematic review”, *British Journal of Management*, vol. 14, pp. 207-222.
- YANG P., RIEPE J., MOSER K., PULL K., TEREZIN S. (2019), “Women directors, firm performance, and firm risk: A causal perspective”, *The Leadership Quarterly*, vol. 30, n. 5, 101297.

Websites

<https://charteredabs.org/academic-journal-guide-2021/>

The Geography of Innovation: The Phenomenon of Urban Clustering in the Fashion Industry

ALESSIO TRAVASI¹ FABIO MUSSO²

Abstract

The geography of innovation underscores the importance of open innovation and spatial proximity in fostering collaboration. This paper explores the geography of innovation in the fashion industry through the analysis of a selection of papers focused on urban clustering in the fashion industry. A systematic search and thematic coding process using R software were employed. Findings reveal key insights into coordination, proximity, networks, entrepreneurship, and innovation dynamics in the fashion sector, highlighting the emergence of distinct clusters. Despite limitations like potential selection biases and language focus, the research offers valuable managerial implications. By leveraging geographic factors, firms can enhance competitiveness, while policymakers can support innovation and cluster growth. The paper's contribution lies in its comprehensive analysis of the fashion industry's innovation geography and its actionable insights for industry and policy. Through this research, a deeper understanding of the interplay between geography and innovation in the fashion industry is elucidated, providing a foundation for strategic decision-making and policy formulation in this dynamic sector.

Key words: Geography of innovation; Urban clusters, Fashion industry; Spatial proximity; R, Content analysis.

Framing of the research. Much has already been written about the geography of innovation. One of the first scholars to study this topic was Marshall (1920), describing the way in which firms in Britain's industrial districts shared knowledge and know-how with each other in order to develop highly innovative products. In the following years, the topic experienced a new lease of life from the 1980s onwards thanks to the work of Piore and Sabel (1984), later to include many other concepts such as learning regions (Florida, 1995), clusters (Porter, 2003) and regional innovation systems (Cooke, Heidenreich & Braczyk, 2004). What links all these ideas is the notion that innovation depends on the activities of acquiring information and knowledge from external sources. These activities fall under the definition of “open innovation”, defined as the umbrella that encompasses, connects, and integrates all information and knowledge acquisition activities (Chesborough, 2003). Economic geography today falls under this umbrella. More specifically, the multitude of concepts and ideas that associate innovation with local, or even extra-local, interaction have been brought together under the paradigm of “open innovation” (Shearmur, 2015).

Thus, when we talk about the geography of innovation, we refer to the fact that firms innovate in an open context, within which proximity between the actors involved is crucial for successful collaboration (Boschma, 2005). Based on this definition, and by extension, the geography of innovation is often interpreted as the geography of proximities (Carrincazeaux, & Coris, 2011). These proximities can be social, organizational, or cultural (Cooke & Asheim, 2011) and can be of permanent or temporary duration (Torre & Rallet, 2005). Indeed, the geography of innovation has become the geography of the networks that support these proximities, and there is also a burgeoning field of research that focuses on the ways in which the advent of the Internet, the easier and faster means of transport, and the emergence of international inter-organisational networks contribute to the exchange of information and innovation even among actors who are not geographically close to each other (Moriset & Malecki, 2009; Bathelt, 2011; Glücker, 2011; Musso & Caraganciu, 2021).

In general, the most important conclusion of these research is that innovation takes place in clusters, much more often in urban areas, which are important transport and communication hubs able to foster not only the emergence of non-geographical proximities (Bathelt, Malmberg & Maskell, 2004) but also the internal dynamics of knowledge exchange, chance encounters, and specialized knowledge spillovers (Porter, 2003). More specifically, Glaeser (2011) theorizes that innovation occurs in “creative cities” embedded in larger metropolitan areas. Following this pattern, cultural industries tend to concentrate in cities while high-tech industries tend to cluster in the immediate vicinity. This seems to be further

¹ University of Urbino
e-mail: a.travasi@campus.uniurb.it

² University of Urbino
e-mail: fabio.musso@uniurb.it

confirmed by the fact that, according to Acs et al. (2002), patents and new products are most likely to be conceived within large metropolitan areas.

However, this does not exclude the possibility that innovation may also take place outside of large metropolitan areas. Cook (2011) states that innovation can also occur in areas that are not particularly well connected, and the explanations for this phenomenon can be of various kinds: local knowledge, through which firms innovate, may be difficult to share; or innovation may be linked to specific natural resources that are exclusively present in a specific area. In any case, it is important to stress that in the current literature these examples continue to be the exception rather than the norm. Thus, the innovation landscape remains largely influenced by the processes that take place within the clusters represented by urban areas, which facilitate the exchange of information and know-how of enterprises.

Purpose of the paper. Given the above literature, an increasing number of researchers have attempted to study the geographical dimension of innovation and its implications for economic clustering. However, this literature seems to have focused excessively on clusters of small and medium-sized firms in high-tech industries, leaving aside other industries in which the geographical component plays an important role, such as the fashion industry.

This paper aims to address the gap in literature by investigating the factors shaping the geography of international production in the fashion industry. Specifically, it seeks to analyze a selection of studies focused on the dynamics of innovation and economic clustering within the fashion sector, with specific reference to urban clusters. By synthesizing existing research, the paper aims to provide insights into how geographic factors influence innovation processes in the fashion industry and explore future perspectives on this topic.

Methodology. The research methodology employed in this study involved a systematic approach to identify relevant literature and analyze its content. English-written publications only were included in the research, excluding *ad priori* papers written in other languages.

Firstly, a comprehensive search was conducted using Scopus database, employing three primary keywords: "geography," "innovation," and "urban cluster", independently from the year of publication. This initial phase resulted in ninety-eight publications.

In the subsequent phase, the papers were subjected to an initial screening process to ensure relevance to the research topic. This involved examining the titles and abstracts of the papers to identify those that potentially addressed the geography of innovation within the fashion domain. In particular, the ninety-eight publications underwent a detailed evaluation to determine their suitability for inclusion in the study. This involved a thorough examination of the full text of each paper to assess its alignment with the research objectives and the depth of its analysis on the geography of innovation in the fashion industry, removing all the papers that did not contain the following words in their title and/or text: "fashion", "apparel", "textile", and "garment". A final set of eight publications was identified as meeting the inclusion criteria. These papers were deemed to provide valuable insights into the geographic factors influencing innovation processes within the fashion industry and formed the basis for the subsequent analysis.

To analyze the content of the selected papers, thematic coding was performed using R software. This involved systematically categorizing the content of each paper into thematic areas related to the geography of innovation in the fashion industry. By dividing the content into thematic areas, this approach facilitated a structured and comprehensive analysis of the key findings and insights presented in the literature. Additionally, it allowed for the identification of common patterns, trends, and discrepancies across the selected papers, enhancing the validity and reliability of the research findings.

Overall, the methodology employed in this study aimed to ensure a rigorous and systematic approach to the identification and analysis of relevant literature on the geography of innovation in the fashion industry. Through a combination of comprehensive literature search, rigorous screening, and thematic coding, this approach facilitated the extraction of valuable insights and the generation of meaningful conclusions to contribute to the existing body of knowledge on this topic.

Results. The main findings, which are partly common to all papers, can be summarized in five main points: i) coordination, structure, and control; ii) proximity, location, and environment; iii) flow and connections; iv) enterprise and entrepreneurship; and v) innovation and knowledge.

The first point - i) coordination, structure, and control - refers to the challenges encountered by firms when operating in diverse geographical areas. Specifically, companies are confronted with the task of determining not only where to establish their operations but also the appropriate scale associated with them. Historically, these considerations were heavily influenced by the need to maintain control over production quality and efficiency, leading fashion firms to position their production facilities in close proximity to their headquarters. This approach was prevalent across all companies, whether haute couture or specializing in lower-quality garments. However, the landscape has shifted with the rise of fast fashion and the ubiquity of the Internet, facilitating greater control over production activities. On one hand, companies have streamlined their production processes to accommodate the demand for numerous collections each year. On the other hand, advancements in technology have diminished the significance of geographical constraints on production facilities, thanks to the simplicity and accessibility of new media platforms. For instance, the Inditex group, owner of the Zara brand, made strategic decisions to relocate some of its manufacturing plants from their traditional base in the Iberian Peninsula to countries like Morocco, Turkey, and Vietnam. This move capitalized on lower labor costs in these regions without compromising on quality or production speed (Tokatli, 2008).

The second point - ii) proximity, location, and environment - delves into the presence of other actors directly or indirectly associated with the company within its operational sphere. This encompasses not only competitors and consumers but also collaborators, suppliers, and various governmental or non-governmental bodies. These actors have

the potential to generate positive externalities for the company and foster the emergence of informal networks, both of which can spur innovation. This dynamic is exemplified in the world's renowned fashion hubs such as New York, Paris, and Milan (Power & Hauge, 2008), where the concentration of diverse stakeholders fuels creativity and growth. Similarly, cities like Istanbul (Olçay, 2013) and Auckland (Weller, 2014) demonstrate how the presence of major retailers (in the former) or a multitude of small and medium-sized textile firms (in the latter) contributes to the establishment of vibrant fashion clusters. These environments provide fertile ground for the inception and evolution of innovative ideas within the fashion industry.

The third point - iii) *flown and connections* - is intricately linked to the preceding discussion. These interconnected networks have the capacity to generate positive externalities, reverberating their effects across other geographical regions where the company operates. This presents the tangible prospect of fundamentally altering the production processes not only within the company itself but also within the broader network of associated enterprises within the same geographic vicinity. For instance, regions like Morocco and Turkey, notably Istanbul as mentioned earlier, exemplify this transformative phenomenon. Once simple industrial districts, they have evolved into veritable hubs of textile experimentation. Here, the expertise of the "parent" company is disseminated to, and reciprocally influenced by, its subsidiaries - a concept often termed as "reverse innovation." This paradigm shift, wherein the "bottom of the pyramid" emerges as a wellspring of innovation, is driven by organizational dynamics and the overarching corporate culture instilled in the region by major enterprises (Olçay, 2013; Tokatli, 2008).

The fourth point - iv) *enterprise and entrepreneurship* - addresses the pivotal role that small and medium-sized enterprises (SMEs) play in fostering the growth of a particular region. SMEs possess the capability to significantly influence regional development, yet they are also molded by the specific circumstances they encounter, particularly when a large enterprise chooses to establish a production center within their operational sphere. This scenario can give rise to two diametrically opposed conditions: a surge in entrepreneurial activity, as observed in instances such as Morocco and Turkey; or a decline in entrepreneurship. It is noteworthy that the latter scenario is more of an exception rather than a prevailing trend. In the majority of cases, the relocation of a major corporation to a particular area, especially if it is economically underdeveloped, results in a surge in entrepreneurial endeavors (Olçay, 2013; Tokatli, 2008).

The fifth and final point - v) *innovation and knowledge* - delineates the pivotal role played by specific urban areas, both in economically advanced and developing nations, in shaping innovation due to their inherent attributes. For instance, metropolises like New York, Los Angeles, and Montreal serve as epicenters where the rich amalgamation of art, culture, and social dynamics acts as a potent catalyst for innovation across the spectrum of the fashion industry, from designers to marketing agencies (Currid & Williams, 2010; Hauge & Hrac, 2010). Crucially, it's not merely the direct or tangential actors associated with the fashion industry - as elucidated in point ii) - but also the socio-cultural milieu within which these companies operate. In an industry profoundly invested in the pursuit of beauty and status symbols, environments such as Manhattan and Hollywood represent fertile grounds for growth and future development. These are locales steeped in accumulated knowledge, where experimentation flourishes, consequently fostering innovation (Rantisi, 2002; 2010). Conversely, in developing countries, the focus shifts from stylistic innovation to industrial innovation, emphasizing the quest for novel and more efficient production methodologies, as delineated in point iii).

The collective insights from the reviewed papers highlight several key factors crucial for understanding the dynamics of the fashion industry within various geographical contexts. Firstly, the paradigm of "coordination, structure, and control" elucidates the evolving strategies of firms in managing production operations across diverse locations, emphasizing the increasing flexibility afforded by technological advancements and global connectivity. Secondly, the significance of "proximity, location, and environment" underscores the role of vibrant fashion hubs in nurturing creativity and fostering collaboration among diverse stakeholders, thereby catalyzing innovation. Thirdly, the concept of "flown and connections" emphasizes the emergence of interconnected networks that facilitate knowledge exchange and innovation diffusion, particularly evident in regions undergoing rapid industrial transformation. Fourthly, the interaction between enterprise and entrepreneurship underscores the impact of major corporations on regional development, often stimulating entrepreneurial activity in economically underdeveloped areas. Lastly, the critical role of innovation and knowledge accentuates the influence of socio-cultural milieus on shaping innovative practices, both in established fashion capitals and emerging industrial centers.

These results show that two different types of economic clusters are being created in the fashion industry, each specializing in a different type of innovation, underscoring the complex interplay between geographical, economic, and socio-cultural factors. The "large western urban areas" clusters, whose peculiar characteristics allow continuous innovation in the style field, and the "developing countries" clusters, whose investments in the past years, by large players, have favored the birth and development of industrial agglomerations that are now able, after absorbing a high degree of knowledge and know-how, to become research and development centers in the industrial field. It is very likely that this trend, which has been going on for at least a decade now, with the improvement of means of communication and transport systems, will only strengthen, making the two-cluster model the norm in the fashion industry.

Research limitations. While this research offers valuable insights, it is essential to recognize its limitations to contextualize the findings effectively. Firstly, the selection process for papers may have introduced a degree of bias, as it relied on specific keywords and exclusion criteria. This approach might have overlooked relevant studies that did not align precisely with the search parameters. Additionally, the focus on English-language publications may have restricted the diversity of perspectives represented in the analysis, potentially excluding valuable insights from non-English sources.

Moreover, the scope of the selected papers may not fully capture the breadth of research on the geography of innovation in the fashion industry, leaving out potentially relevant studies or perspectives. In particular, the use of the Scopus database alone, may have hidden important work within the topic under analysis. Looking at future developments, it would be appropriate to include additional databases in the search spectrum - first and foremost Web of Science and Google Scholar, which were excluded in this preliminary investigation for two reasons respectively: the probable overlap of papers and the inclusion of non-scientific research in its archives. Therefore, it is crucial to interpret the findings within the context of these limitations and recognize the need for further exploration and validation through diverse sources.

Managerial implications. The implications of this research extend beyond academia to offer actionable insights for industry practitioners and policymakers. Understanding the geographic dynamics of innovation in the fashion industry can guide strategic decision-making for firms operating in this sector. By leveraging insights from the analysis, managers can make informed choices regarding production location, supply chain management, and market positioning to enhance competitiveness and innovation capabilities. Moreover, recognizing the significance of local networks and ecosystems can enable firms to tap into valuable resources and opportunities for collaboration, fostering a culture of innovation within the organization. Policymakers also have a role to play in creating an enabling environment for innovation clusters to thrive, through targeted interventions and support mechanisms that facilitate knowledge exchange, skill development, and entrepreneurship. By aligning policies with the findings of this research, stakeholders can collectively contribute to the sustainable growth and development of the fashion industry.

Originality of the paper. This paper represents a significant contribution to the literature on the geography of innovation, particularly within the context of the fashion industry. By synthesizing insights from multiple studies, it offers a comprehensive analysis of the geographic factors influencing innovation processes in this sector. The extension of this analysis to include diverse perspectives and methodologies enhances the robustness and reliability of the findings. Furthermore, by highlighting the importance of non-traditional industries like fashion in discussions of economic geography and innovation, this research broadens the scope of inquiry and opens new avenues for exploration. Overall, the originality of this paper lies in its ability to integrate disparate sources of information to provide a holistic understanding of the role of geography in shaping innovation within the fashion industry, thereby contributing to a more nuanced and comprehensive discourse on this topic.

References

- ACS, Z., ANSELIN L., VARGA A. (2002), "Patents and innovation counts as measures of regional production of new knowledge", *Research Policy*, vol. 31, pp. 1069-1085.
- BATHELT H. (2011), "Innovation, learning and knowledge creation in co-localised and distant contexts", In *Handbook of local and regional development*, ed. A. Pike, A. Rodriguez-Pose, and J. Tomaney, pp. 149-161. London: Routledge.
- BATHELT H., MALMBERG A., MASKELL P. (2004), "Clusters and knowledge: Local buzz, global pipelines, and the process of knowledge creation", *Progress in Human Geography*, vol. 28, n. 1, pp. 31-56.
- BOSCHMA R. (2005), "Proximity and innovation: A critical assessment", *Regional Studies*, vol. 39, n. 1, pp. 61-74.
- CARRINCAZEUX C., CORIS M. (2011), "Proximity and innovation", In *Handbook of regional innovation and growth*, ed. P. Cooke, B. Asheim, R. Boschma, R. Martin, D. Schwartz, and F. Tödtling, pp. 269-281. Cheltenham: Edward Elgar.
- CHESBOROUGH H. (2003), *Open innovation: The new imperative for creating and profiting from technology*. Cambridge, MA: Harvard Business Press.
- COOKE P., ASHEIM B. (2011), "Proximity and innovation", In *Handbook of regional innovation and growth*, ed. P. Cooke, B. Asheim, R. Boschma, R. Martin, D. Schwartz, and F. Tödtling, 265-268. Cheltenham: Edward Elgar.
- COOKE P., HEIDENREICH M., BRACZYK H.J., (eds.) (2004), *Regional systems of innovation: The role of governance in a globalized world*. London: Routledge.
- CURRID E., WILLIAMS S. (2010), "The geography of buzz: art, culture and the social milieu in Los Angeles and New York", *Journal of economic geography*, vol. 10, n. 3, pp. 423-451.
- FLORIDA R. (1995), "Toward the learning region", *Futures*, vol. 27, pp. 527-536. 2002.
- GLAESER E. (2011), *The triumph of the city: How our greatest invention makes us richer, smarter, greener, healthier, and happier*. New York: Penguin Books.
- GLÜCKER J. (2011), Islands of expertise: Global knowledge transfer in a technology service firm", In *Beyond territory: Dynamic geographies of knowledge creation, diffusion and innovation*, ed. Bathelt H., Feldman M., Kogler D., 207-226. London: Routledge.
- HAUGE A., HRACS B.J. (2010), "See the sound, hear the style: collaborative linkages between indie musicians and fashion designers in local scenes", *Industry and Innovation*, vol. 17, n. 1, pp. 113-129.
- MARSHALL A. (1920), *Principles of economics*. London: MacMillan.
- MORISSET B., MALECKI E. (2009), "Organization versus space: The paradoxical geographies of the digital divide", *Geography Compass*, vol. 3, n. 1, pp. 256-274.
- MUSSO F., CARAGANCIU A. (2021), *Local Business Networks, Clusters and Business Ecosystems. Factors of Influence on Firms Competitiveness in Global Markets*, Pearson Italia, Milano.
- OLCAY G.P. (2013), "Dynamics That Form the Geography of International Production of Apparel Industry and Effects of These Dynamics on Istanbul", *Journal of Planning*, vol. 23, n. 1, pp. 26-34.
- PIORE M., SABEL C. (1984), *The second industrial divide*. New York: Basic Books.
- PORTER M. (2003), "The economic performance of regions", *Regional Studies*, vol. 37, pp. 549-578.
- POWER D., HAUGE A. (2008), "No man's brand-brands, institutions, and fashion", *Growth and Change*, vol. 39, n. 1, pp. 123-143.

- RANTISI N.M. (2002), "The competitive foundations of localized learning and innovation: the case of women's garment production in New York City", *Economic Geography*, vol. 78, n. 4, pp. 441-462.
- RANTISI N. (2010), "The geography of producing and marketing design for Montreal fashion: Exploring the role of cultural intermediaries", In *Industrial design, competition, and globalization* (pp. 93-116), "Palgrave Macmillan, London.
- SHEARMUR R. (2015), "Far from the madding crowd: Slow innovators, information value, and the geography of innovation", *Growth and Change*, vol. 46, n. 3, pp. 424-442.
- TOKATLI N. (2008), "Global sourcing: insights from the global clothing industry-the case of Zara, a fast fashion retailer", *Journal of economic Geography*, vol. 8, n. 1, pp. 21-38.
- TORRE A., RALLET A. (2005), "Proximity and localization", *Regional Studies*, vol. 39, n. 1, pp. 47-59.
- WELLER S.A. (2014), "Creativity or costs? Questioning New Zealand's fashion success: A methodological intervention", *Journal of Economic Geography*, vol. 14, n. 4, pp. 721-737.

Strategic analysis of IRCCSs' sustainability management

CHIARA BELLINI¹ PAOLA OLIMPIA ACHARD² LEONARDO IOANNUCCI³

Abstract

Although Healthcare Organizations (HOs) are functional in improving and protecting health, they generate, a negative impact (mainly in terms of environmental pollution) on health itself, highlighting the need for the adoption of sustainability-oriented governance.

The paper analyzes the sustainable management modes of Scientific Research, Hospitalization and Healthcare Institutes (IRCCSs), whose businesses (care and research), include sustainability as an intrinsic dimension of their activities. The paper aims to study the sustainable strategic approach adopted by IRCCSs in the context of which it is relevant to explore also, but not exclusively, the role assumed by stakeholder management and sustainable investments.

The methodology used consists of a search for relevant documents and a joint analysis of secondary data conducted on the various strategic planning documents published by IRCCSs, and primary data from distributed questionnaires. Limitations mainly relate to statistical representativeness of the chosen sample, difficulty in accessing the documents and temporal mismatch in their publication.

The main result is the demonstration that IRCCSs, in addition to being promoters of innovation in the medical and managerial fields compared to other HOs, generate, through sustainability-based governance, positive impacts in economic, social, environmental, and ethical terms. To date, the priority areas in which IRCCSs' sustainability choices are manifested are: care services (e.g., waste management), supply chain management (e.g., supplier selection), digital innovation (e.g., telemedicine), and healthcare building (e.g., green hospitals).

The paper provides insights into the potential of adopting more sustainability-oriented governance in HOs, highlighting the crucial role of IRCCSs as promoters of sustainable strategic approaches.

Keywords: Healthcare Organizations, IRCCSs, strategic sustainability management, sustainable governance, strategic CSR

Framing of the research. The European healthcare sector, in 2021 (latest available data), led to an expenditure of 1,563 billion euros representing about 11% of GDP (Eurostat, 2024). The activities carried out by European Healthcare Organizations (HOs) result in such economic, social and environmental impacts that sustainability has become a critical issue. Health services are, in fact, intrinsically linked to social sustainability, since if the latter relates to the well-being of the community, healthcare is its driving sector. It is enough to consider that European HOs generate a significant climate impact: collectively they emit about 249 million MtCO₂ (Health Care without Harm, 2019; Karliner, 2019), equivalent to 10% of Europe's GDP (\$16.64 trillion in 2022), resulting in more than one million people dying each year due to environmental risk factors (WHO, 2023). The most recent political-institutional pressures, at the European (e.g., Next Generation EU, 2021-2027; 7th Ministerial Conference on Environment and Health, 2023; European Green Deal, 2019; Paris Agreement, 2015) and Italian (e.g., National Recovery and Resilience Plan, 2021-2027; Law decree 80/2021) levels, are also moving in this direction. The policy acts mentioned reflect a new logic regarding the roles and responsibilities of firms (Lee, 2008).

The analysis of IRCCSs' strategic sustainable management, subject of this paper, shows their value creation process. The dimensions of sustainability represent factors on which to act in managing the businesses (Engert, Rauter and Baumgartner, 2016) of IRCCSs to achieve competitive advantage.

IRCCSs (53) represent 3.5% of the total active HOs in the Italian NHS. Italy's National Health System (NHS) has a multilevel institutional set-up consisting of 21 Regional Health Systems (RHSs) in which a plurality of HOs operate (Ministry of Health, 2024).

IRCCSs were chosen for two reasons: they are knowledge-intensive firms and promoters of the evolution of the Italian NHS in the international context. In fact, by operating in the core business of healthcare R&D they have developed innovative clinical and managerial capabilities, configuring themselves also as pioneers at the regional, national and

¹ University of Aquila
e-mail: chiara.bellini@graduate.univaq.it

² University of Aquila
e-mail: paolaolimpia.achard@univaq.it

³ University of Aquila
e-mail: leonardo.ioannucci@graduate.univaq.it

European levels in the field of sustainable management of their activities. Sustainability management in IRCCSs is placed in the broader framework of strategic Corporate Social Responsibility (CSR), in which innovation plays a vital role (Verdecho et al., 2021). Although there are many approaches in the literature to support firms in managing sustainability, the strategic CSR framework fosters a better understanding of the phenomenon under study in relation to the strategic specificities of IRCCSs.

CSR has been defined as the fulfillment of a firm's responsibility to the needs of current stakeholders without compromising its ability to meet the needs of future stakeholders (Dyllick and Hockerts, 2002; Smith, 2001). Having evolved since 2000 into strategic CSR, it is an opportunity for firms to reconfigure the competitive landscape and to develop distinctive and dynamic resources and capabilities (Husted and Allen, 2007). The concept of strategic CSR can be traced predominantly to the integration of social responsibility into corporate strategic plans (Lantos, 2001), ways of pursuing strategic goals (Van Marrewik, 2003) and achieving competitive advantage (Porter and Kramer, 2006). Attributing strategic relevance to CSR for firms means moving to corporate governance that: i) rethinks the concept of stakeholders (Freeman, 2023); ii) adopts differentiated stakeholder management strategies according to the degree of involvement in decision-making processes (Colvin, Witt and Lacey, 2020; Seman et al, 2018); iii) emphasize the role of collaborative strategies (Peloza and Falkenberg, 2009) based on the enhancement of interdependencies among actors/firms belonging to the public, private and social sectors (Trapp, 2012). It is worth noting that from the strategic point of view what is relevant is the ability of the firms to read the recalled aspects as interdependent (Carroll, 2015). Indeed, firms can compete by adopting a strategic approach that leads to the creation of shared value, in terms of benefits to society, while improving the firm's competitiveness (Porter and Kramer, 2018). CSR has become a strategic need for the enterprise in which the interdependencies between firm and society are maximized.

The integration of CSR is a challenging and progressive process over time, involving the incorporation of sustainability factors into the businesses in which one operates (Nguyen and Kanbach, 2024; Baumgartner, 2014). Sustainable strategic action by firms comes through the ability to reconceive services and redefine value chain activities. More recent studies highlight how strategic CSR today is geared toward the creation of sustainable shared value (Latapí Agudelo, Jóhannsdóttir and Davídsdóttir, 2019; Chandler, 2022). The management of relationships, exchanges, and interactions between the firm and stakeholders influence the scope of value creation in its various economic, social, environmental, and ethical forms (Evans et al., 2017). Sustainability has turned into one of the dimensions of corporate governance, meaning that it is a strategic choice of firms to elevate it as a driver of their decision-making processes.

This paper, as shown in the following section, explores the strategic actions of IRCCSs in terms of their ability to achieve competitive advantage by generating positive impacts in economic, social, environmental and ethical sustainability (through the integration of CSR into their corporate governance).

Purpose of the paper. The paper aims to highlight how IRCCSs, given their strategic nature, are promoters of governance based on sustainability. To this end, the research questions addressed by the present paper are:

RQ1: Do IRCCSs integrate their strategic objectives with those that are (economically, socially, environmentally and ethically) sustainable?

RQ2: Do IRCCSs pursue sustainability strategies?

RQ3: Among the possible sustainable strategies, which ones do IRCCSs adopt and to what extent do these strategies influence investments and external collaborations?

Based on the above questions, the paper presents the first results of an exploratory study to test the following hypotheses:

H1: There is a positive correlation between social, environmental and ethical sustainability in the studied IRCCSs.

Within firms operating in sectors other than Healthcare, this correlation has been confirmed in multiple studies, (Dolcini et al., 2023; Minoglou, Gerassimidou and Komilis, 2017) also if not to every extent (e.g., sometimes a medium level of social sustainability is correlated to a medium level of environmental one, while a high level in one doesn't imply a high level in the other one) (Sulewski, Kłoczko-Gajewska and Sroka, 2018).

H2: If the first two research questions have a positive answer the amount of sustainable investments is higher than in HOs that are not sustainability-driven.

As well somehow suggested also in previous studies (AlJaberi, Hussain, and Drake, 2017; Calabrese et al., 2023), the paper intends to show that if IRCCSs truly integrate sustainability goals into their strategies, they also have more investments on socially and environmentally sustainable actions (Stobierski, 2022).

H3: Sustainability-driven IRCCSs (regarding internal activities and operations) also integrate sustainability criteria when selecting external collaborations (with suppliers, other stakeholders, partners).

Research in other sectors show the correlation between internal sustainable choices and attention to sustainability in the adoption of collaboration and procurement strategies (MacDonald, Clarke, and Huang, 2022; Valbuena-Hernandez and Ortiz-de-Mandojana, 2022).

Methodology. The setting of the study is the totality of Italian IRCCSs (53), which seem more suitable than other types of HOs for several reasons:

- Compared to other HOs, IRCCSs are characterized by the presence of a greater number of strategic interdependencies between the corporate areas of research and clinical practice.
- IRCCSs play a key role in positioning the Italian NHS in the international scenario.
- IRCCSs foster a management approach based on the transfer of knowledge into daily medical activities.

- IRCCSs operate in cooperation and collaboration with other HOs and other firms to pursue their specific strategic goals.

All these aspects give to IRCCSs a specific strategic role in the evolution of the Italian NHS (Achard and Bellini, 2022) and in its direction toward governance based on sustainability (Maghsoudi, Cascon-Pereira and Beatriz Hernández Lara, 2020).

The study is qualitative-quantitative and integrates the desk research of corporate documents accessible through the IRCCSs' websites (secondary data), with primary data coming from the responses to a questionnaire administered to key strategic positions (e.g., medical director, administrative director, scientific director, members of the board of directors, divisional managers, heads of corporate functions such as purchasing, procurement, information systems) of the IRCCSs under analysis. The definite choice of questionnaire recipients is being determined through the strategic and organizational focus analysis of an IRCCS, taken as a sample reference, at a stage prior to the administration of the final questionnaire.

The documents considered in the desk research are: Strategic Plan, Mission statement, Sustainability Report, Social Report, Waste Plan, Performance Plan, Gender Equity Plan and Integrated Plan of Activities and Organization. The public availability of these documents has been detected according to the following search method: i) research on the "transparent administration" section of the corporate website; ii) If not found in the "transparent administration" section, research using the search bar of the website; iii) if not detected through the site's "search" function, they are considered as absent (which means they are not detectable, but does not mean they are absent in an absolute sense).

The questionnaire, calibrated following the response of the first IRCCS taken as the sample reference, should consist of 5 open-ended questions, which are essential to create a base of qualitative data useful for appreciating the level of attention to sustainability dynamics (including with respect to investments and collaborations), where these are not clear enough from publicly accessible strategic documents.

In addition, in order to collect quantitative data that can be used to create a correlation analysis between the factors analyzed, the questionnaire is supplemented with 10 multiple-choice questions, where multiple choice refers to two different typologies of items with respective two different types of variables:

- dichotomous variables, so items in which the possible answers are yes or no (e.g.: Has the IRCCS defined environmental sustainability criteria for the selection of its suppliers?).
- continuous variables, so items whose possible answers are ordered on a Likert scale from 1 to 5 or whose answer is a quantitatively appreciable data (e.g.: Compared to 5 years ago, how many more partners has the institution integrated into its sustainable strategy? In other words, how many collaborations have been formed with the goal of increasing social or environmental sustainability that were not in place 5 years ago)?

Some of the items are developed from the main criteria and attributes of social and environmental sustainability, to assign specific measures to both dimensions (Erjaee et al., 2022; Mehra and Sharma, 2021) and some others focus on the investigation of sustainable investments and collaborations, where not fully retrievable from published documents.

The first phase of questionnaire distribution will last for about one month; at the end of this phase, if the number of responses obtained turns out to be poorly representative, a second call for responses will be made targeting those IRCCSs that did not answer and that are of greater strategic interest to the study (because of the particular, or conversely poor, inclination to sustainability-oriented investments and collaborations). Next to this second phase, thus after about two months from the start of questionnaire distribution, we expect to have a sufficient sample to be able to test the hypotheses posed in a sufficiently representative manner. Therefore, from the joint analysis of the secondary data and those obtained from the questionnaire, it is verified whether the IRCCSs studied are sustainability-driven, whether there is a positive correlation between the three types of sustainability (H1), and whether the sustainable strategies are correlated with stakeholders and investments selection (H2 and H3). Regarding the amount of sustainable investments, the data will be analyzed in percentage value, as a ratio to IRCCSs' total investments, and will be normalized on the basis of the regional average investments' data (since some Italian Regions and, consequently, their respective RHCs have greater investment capacity than others).

Results. The integration between sustainable aims and corporate ones is greater in IRCCSs with sustainable drivers than in other types of HOs and this aspect is attributable to the distinctive competencies of IRCCSs, such as, for example, the ability to manage innovation and strategic collaborations (other than to legal requirements). Furthermore, it is expected that in the IRCCSs, the amount of investment in sustainable actions is greater than in non-sustainability-driven HOs, and that sustainability is interrelated with the selection of sustainable stakeholders and partners. Specifically, IRCCSs that establish criteria (with subsequent monitoring) for sustainability not only on service delivery processes, but also on collaboration and investment activities, are expected to have a greater outcome, in terms of sustainable strategic management. In addition, where an IRCCS is found to perform better in terms of economic, social, environmental, and ethical sustainability, it is also supposed to establish more formally defined criteria for its choice of stakeholders and investments.

Considering that the study is still in progress, it has been decided to present only the results of the desk research, which gives initial indications of IRCCSs to which the questionnaire (for the primary data collection) can be addressed. In other words, the presented data give more meaningful results in terms of usefulness, sustainability drivers and gaps on sustainability strategic documents.

Tab. 1 shows the IRCCSs, grouped by geographical areas, having strategic programming acts from which information on social, environmental and/or ethical strategies can be detected and indicates the quantitative values of the IRCCSs

that possess them (in absolute terms and as a percentage of both RHS and NHS). Year(s) of publication stands for the year in which the last available document among Sustainability Report, Social Plan and Mission Statement has been published by each IRCCS.

Tab. 1: Sustainable strategies in Italian IRCCSs, grouped by geographical areas

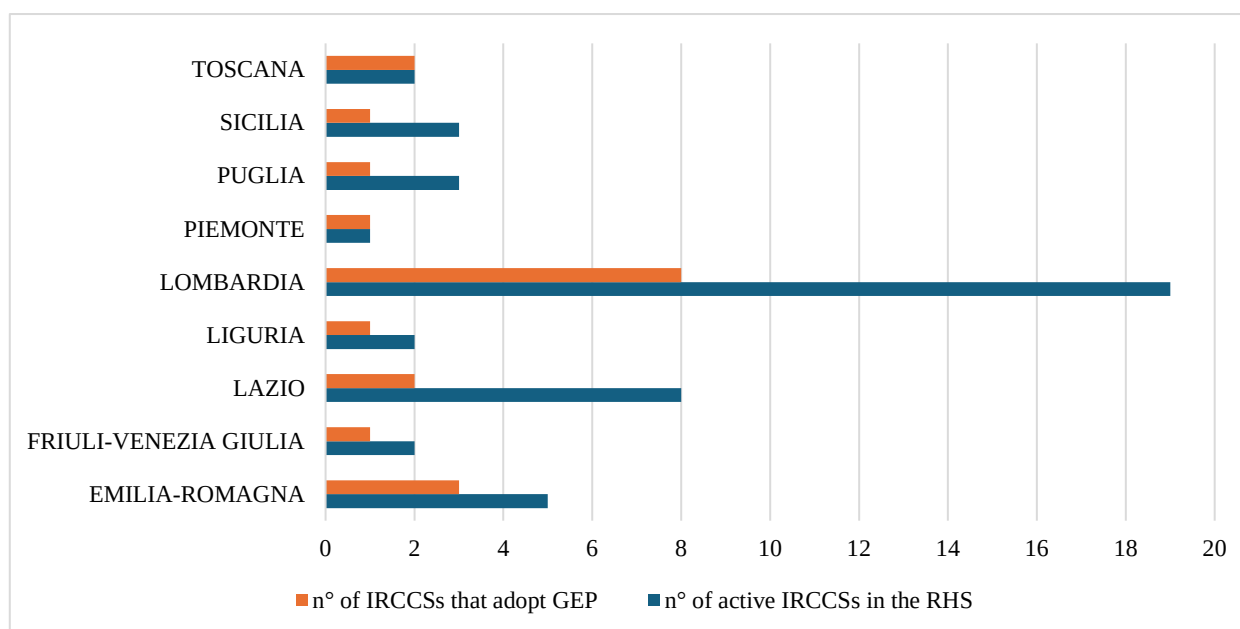
Geographic area (RHS)	n° of active IRCCSs in the RHS	n° of IRCCSs whose sustainable planning acts are accessible	% of IRCCSs with detectable sustainable strategies in the RHS	% of IRCCSs with detectable sustainable strategies in the NHS	Year(s) of publication
BASILICATA	1	1	100.0	1.9	2018
CAMPANIA	2	1	50.0	1.9	2012
EMILIA-ROMAGNA	5	2	40.0	3.8	2021
MARCHE	1	1	100.0	1.9	2016
LAZIO	8	3	33.3	5.7	2022; 2022; 2022
LIGURIA	2	1	50.0	1.9	2019
LOMBARDIA	19	4	22.2	7.5	2022; 2022; 2022; 2021
PIEMONTE	1	1	100.0	1.9	2022
SICILIA	3	1	33.3	1.9	2020
VENETO	3	2	66.7	3.8	2016; 2022
Total		17		32.1	

Source: authors' own elaboration

Fig. 1 shows the IRCCSs adopting the Gender Equity Plan (orange bars), comparing them with the total number of IRCCSs in their respective regional territories (blue bars).

Only RHSs with at least one IRCCS adopting one of the sustainable strategic documents among Mission Statement, Sustainability Report and Social Report (Tab. 1) or GEP (Fig. 1) were considered. The factors of economic sustainability, which acquire significant value for some specific IRCCSs, should not be overlooked, but in the case of the data presented, we mainly focus on sustainability in the social, environmental, and ethical spheres.

Fig. 1: GEP adoption in Italian IRCCSs, grouped by geographical areas (RHS)



Source: authors' own elaboration

As part of the desk research, strategic planning documents were collected, with a special focus on those that delve into the strategic orientation of IRCCSs with regard to social, ethical and environmental sustainability. Hence, what the documents analyzed deal with as a priority are the activities aimed at containing consumption, reducing pollution and eliminating inequalities with a view to occupational well-being.

It is essential to premise, moreover, that few of the IRCCSs analyzed make reference (in the documents reviewed) to the management methods, types and analysis of stakeholders, which, precisely because of this gap, will be explored in depth through the questionnaire that will be distributed.

Nevertheless, from the available documents, it's noticeable that the priority areas within which IRCCSs' environmental sustainable choices are manifested are the following ones:

- Nursing care services (e.g., reducing CO2 emissions; managing medical waste; increasing appropriateness of services). For example, IRCCS Meyer has signed a sustainability protocol with Alia Multiutility Toscana to make differentiated waste management within the IRCCS more effective.
- Supply chain management (e.g., supplier relationships management). IRCCS Ospedale Pediatrico Bambino Gesù has promoted sustainable supply chain management by adopting procedures and policies for selecting suppliers, contractors and business partners that are fair and transparent and include the integration of ESG (Environmental, Social and Governance) criteria.
- Digital innovation of health services. IRCCS Fondazione Policlinico Agostino Gemelli started the KIT (Keep In Touch) 2.0 project for the care and monitoring of patients undergoing cancer treatment. The KIT mobile app allows the patients from to communicate from their home with the doctor and monitor their clinical situation also through smartwatches that allow for continuous information on different aspects of health.
- Healthcare building structures (e.g., green hospitals) (Prenestini, Ristuccia and Florianello, 2023). IRCCS Ospedale Galeazzi Sant'Ambrogio is among the most sustainable hospitals (at structural level) in Europe and is located in the Milan Innovation District. The IRCCS is designed to be fully developed in height and wherever flat roofs are not accessible they are resolved to intensive green roofs.

Moreover, the results of the desk research show that the strategic behaviors of IRCCSs in terms of their ability to create value and maintain competitive advantage go through strategies that are also effective in developing collective benefits. Conversely, it is also true that strategies aimed at social sustainability, as already specified, are inherent in IRCCSs' activities and, therefore, necessarily contribute to creating value and competitive advantage in the Healthcare system.

Finally, there are secondary factors that can be highlighted by a reading of Tab. 1 and Fig. 1, which could complement the discussion with expanded reference to the RHSs under consideration, although the specific focus of the current study remains at firms (and therefore IRCCSs) level.

For instance, among the RHSs there is one in which more than 1/3 of the total Italian IRCCSs are concentrated, Lombardia, which, however, when considering the percentage of IRCCSs that adopt sustainability strategy documents, ranks last among all RHSs (22.2%). This is not to say, however, that IRCCSs in Lombardia do not follow any sustainable principles or adopt strategies that are not sustainability-oriented. In fact, as has been said, it is not possible for HOs in general to achieve strategic goals without implicitly considering sustainability factors. The point that is most useful to capture, perhaps, is the paucity of transparency regarding how these goals are achieved from a sustainable perspective. Related to this, one could understand the reported data from a different perspective: rather than seeing it as a prospectus on IRCCSs sustainability, it can be seen as a point in the issue of transparency on data considered crucial for corporate sustainability analysis. This opens a further consideration: while it is true that IRCCSs that do not publish data (or whose strategic documents were not found to be accessible) are not necessarily disregarding sustainability in their strategic choices, value must be placed on the absence or inaccessibility of such documents. Transparent reporting in the healthcare system has value in monitoring HOs and improving public opinion regarding the quality of the healthcare system (Hafner et al., 2011) and, therefore, is always of great importance to be encouraged even at the central level of Health Policy (Akmal, Gauld and Penno, 2022). It is emphasized, however, that the topic of sustainability has been introduced, formally and legally, in the healthcare system recently, so moving ahead of the advancement and absorption of this topic in strategic management, even of advanced HOs such as IRCCSs, is certainly a factor to consider when noting the absence of adopted strategic documents. IRCCSs, dealing with healthcare R&D, also compete and collaborate with European firms in the project and investment domains, this implies that the adoption of sustainable practices is implicitly necessary since, often, it is one of the necessary requirements. It follows from what has just been recalled that it is normal for IRCCSs to be more sustainable than other firms that only operate within the Italian NHS, as is expected to be confirmed by the full results of the study.

Research limitations. In the healthcare system, the issue of sustainability is widely spread (Gubelli et al., 2020), but not yet implemented in the strategies of most firms, so it is difficult to have a clear picture of what they do and how they operate from a sustainable perspective. Apart from some documents (e.g., the PIAO, the integrated plan of activities and organization), within which environmental sustainability part has been integrated, there are no real minimum standards to which IRCCSs must adhere in developing their strategies of sustainable nature. In addition to non-standardization limitations (just mentioned), another issue, methodological in nature, is the lack of external validity, due to two factors:

- Limit of statistical representativeness. The study will not be numerically representative because exhaustive information or people willing to fill out the questionnaire cannot be found in all IRCCSs, so the sample identified will still be limited to a minimal part of the totality.
- There is a time mismatch in the publication of the documents analyzed because of the temporal differences in the election of the regional representatives.
- The possibility of access to documents in digital format is attributable, in part, to the degree of digitization of the enterprise.

Managerial implications. The paper provides an incentive for HOs managers to consider potential uptake of projects, activation of corporate functions and creation of task forces dedicated to social, environmental and ethical sustainability. The organizational structure that serves as a vector for sustainable practices can also be supported through the

development of an internal communication system. Evidence, moreover, contributes to the stimulation of corporate potential, as the analysis of the most advanced and pioneering healthcare firms can incentivize others by generating a benchmark effect. Thus, the concept of sustainability understood as a need for regulatory legitimacy and institutional isomorphism on the part of HOs could be overcome, aiding in the development of internal management modalities that favor the dissemination of good (sustainable) practices adopted by the most cutting-edge firms of the Italian NHS. Moreover, the paper may help decision makers to prioritize sustainability practices with the goal of helping to recognize the most significant strategies for pursuing sustainable goals. Waste reduction and management, energy choices, healthcare facility upgrades, use of technology, and investment in staff training can guide managers in building competencies for sustainable governance.

Originality of the paper. The present paper contributes to define the current scenario in the adoption of sustainable strategies by IRCCSs and to expand knowledge in the area of sustainable strategic management within HOs, including by understanding the interconnections between corporate governance, sustainable investments, and external collaborations. HOs are widely studied firms, including regarding the impacts that sustainability has at a corporate level both in Italian and European contexts. Despite this, it is difficult to find a state-of-the-art on the topic that explores strategic actions of very representative firms from a management perspective. Instead IRCCSs, benefiting from highly correlated business diversification and differentiation strategies, and competing, as already mentioned, also at the European level, could be considered highly representative. Finally, the paper does not rely on the punctual analysis of instruments, but researches and proposes a broader overview that completes the picture of strategic CSR within HOs.

References

- ACHARD P.O., BELLINI C. (2022), "Value Creation Through Public-Private Partnerships in the Healthcare Sector: A Managerial Analysis of Italian Healthcare Organizations During the COVID-19 Pandemic", *Eurasian Business and Economics Perspectives: Proceedings of the 37th Eurasia Business and Economics Society Conference*, pp. 59-76, Cham: Springer International Publishing.
- AJMAL M.M., KHAN M., HUSSAIN M., HELO P. (2018), "Conceptualizing and incorporating social sustainability in the business world", *International Journal of Sustainable Development & World Ecology*, vol. 25, n. 4, pp. 327-339.
- AKMAL A., GAULD R., PENNO E. (2022), "Transparency in healthcare reporting: the case of external contractors and consultants in New Zealand's healthcare system", *International Journal of Health Policy and Management*, vol. 11, pp. 1642-1649.
- ALJABERI O.A., HUSSAIN M., DRAKE P.R. (2020), "A framework for measuring sustainability in healthcare systems", *International Journal of Healthcare Management*, vol. 13, n. 4, pp. 276-285.
- BAUMGARTNER R. J. (2014), "Managing corporate sustainability and CSR: A conceptual framework combining values, strategies and instruments contributing to sustainable development", *Corporate Social Responsibility and Environmental Management*, vol. 21, n. 5, pp. 258-27.
- CALABRESE M., SUPARAKU S., SANTOVITO S., HYSA X. (2023), "Preventing and developmental factors of sustainability in healthcare organisations from the perspective of decision makers: an exploratory factor analysis", *BMC Health Services Research*, vol. 23, n. 1, pp. 1-9.
- CARROLL A.B. (2015), "Corporate social responsibility: The centerpiece of competing and complementary frameworks", *Organizational dynamics*, vol. 44, n. 2, pp. 87-96.
- CHANDLER D. (2022), *Strategic corporate social responsibility: Sustainable value creation*. Sage Publications.
- COLVIN R.M., WITT G.B., LACEY J. (2020), "Power, perspective, and privilege: the challenge of translating stakeholder theory from business management to environmental and natural resource management", *Journal of Environmental Management*, 271, 110974, pp. 1-9.
- DOLCINI M., BRAMBILLA A., GOLA M., CAPOLONGO S. (2023), "Health and well-being key performance indicators in corporate sustainability disclosure. A review of sustainability reports from a sample of major European companies", *ACTA BIOMEDICA*, vol. 94, n. S3, e2023132, pp. 1-13.
- DYLLICK T., HOCKERTS K. (2002), "Beyond the business case for corporate sustainability", *Business strategy and the environment*, vol. 11, n. 2, pp. 130-141.
- ENGERT S., RAUTER R., BAUMGARTNER R. J. (2016), "Exploring the integration of corporate sustainability into strategic management: A literature review", *Journal of cleaner production*, vol. 112, pp. 2833-2850.
- ERJAEI A., HENDIANI S., MORADI S., BAGHERPOUR M. (2022), "Healthcare sustainability evaluation using a hybrid fuzzy multi-criteria decision-making model", *International Journal of Fuzzy Systems*, pp. 1-21.
- EUROSTAT (2024) *Total healthcare expenditure* [online] Available at: <<https://ec.europa.eu/eurostat/data/database>> [Accessed 23 May 2024].
- EVANS S., VLADIMIROVA D., HOLGADO M., VAN FOSSEN K., YANG M., SILVA E.A., BARLOW C.Y. (2017), "Business model innovation for sustainability: Towards a unified perspective for creation of sustainable business models", *Business strategy and the environment*, vol. 26, n. 5, pp. 597-608.
- FREEMAN R.E. (2023), "Managing for stakeholders: Trade-offs or value creation", in *R. Edward Freeman's Selected Works on Stakeholder Theory and Business Ethics* (pp. 295-299), Cham: Springer International Publishing.
- GUANDALINI I. (2022), "Sustainability through digital transformation: A systematic literature review for research guidance", *Journal of Business Research*, vol. 148, pp. 456-471.
- GUBELLI S., BRAMANTI V., NUGARA M., GABELLA V. (2020), *La trasformazione del settore sanitario: dal ruolo sociale alla sostenibilità a tutto campo* Report di ricerca n. 2/2020 Alta Scuola Impresa e Società (ALTIS) [online] Available at: <https://www.altisadvisory.com/wp-content/uploads/2023/04/2_Report-sanit%E2%80%A6dicembre-2020.pdf> [Accessed 23 May 2024].

- HAFNER J.M., WILLIAMS S.C., KOSS R.G., TSCHURTZ B.A., SCHMALTZ S.P., LOEB J.M. (2011), "The perceived impact of public reporting hospital performance data: interviews with hospital staff", *International Journal for Quality in Health Care*, vol. 23, n.6, pp. 697-704.
- HEALTH CARE WITHOUT HARM [HCWC] (2019), *Healthcare climate footprint report*. [online] Available at: <<https://noharm-global.org/documents/health-care-climate-footprint-report>> [Accessed 23 May 2024].
- HUSTED B.W., ALLEN D.B. (2007), "Strategic corporate social responsibility and value creation among large firms: lessons from the Spanish experience", *Long range planning*, vol. 40, n. 6, pp. 594-610.
- KARLINER J., SLOTTERBACK S., BOYD R., ASHBY B., STEELE K., WANG J. (2020), "Health care's climate footprint: the health sector contribution and opportunities for action", *European journal of public health*, vol. 30, n. S5, pp. 165-843.
- LANTOS G.P. (2001), "The boundaries of strategic corporate social responsibility", *Journal of consumer marketing*, vol. 18, n. 7, pp. 595-632.
- LATAPÍ AGUDELO M.A., JÓHANNSDÓTTIR L., DAVÍDSDÓTTIR B. (2019), "A literature review of the history and evolution of corporate social responsibility", *International journal of corporate social responsibility*, vol. 4, n. 1, pp. 1-23.
- LEE M.D.P. (2008), "A review of the theories of corporate social responsibility: Its evolutionary path and the road ahead", *International journal of management reviews*, vol. 10, n. 1, pp. 53-73.
- MACDONALD A., CLARKE A., HUANG L. (2022), "Multi-stakeholder partnerships for sustainability: Designing decision-making processes for partnership capacity" in *Business and the ethical implications of technology* (pp. 103-120), Cham: Springer Nature Switzerland.
- MAGHSOUDI T., CASCON-PEREIRA R., BEATRIZ HERNÁNDEZ LARA A. (2020), "The role of collaborative healthcare in improving social sustainability: A conceptual framework", *Sustainability*, vol. 12, n. 8, 3195.
- MEHRA R., SHARMA M.K. (2021), "Measures of sustainability in healthcare", *Sustainability Analytics and Modeling*, vol. 1, 100001, pp. 1-15.
- MINISTRY OF HEALTH (2024), *Annuario statistico del Sistema Sanitario Nazionale 2022* [online] Available at: <<https://www.salute.gov.it/portale/donna/dettaglioEventiDonna.jsp?lingua=italiano&menu=eventi&p=daeventi&id=654>> [Accessed 23 May 2024].
- MINOGLU M., GERASSIMIDOU S., KOMILIS D. (2017), "Healthcare waste generation worldwide and its dependence on socio-economic and environmental factors", *Sustainability*, vol. 9, n. 2, 220.
- NGUYEN H.L., KANBACH D.K. (2024), "Toward a view of integrating corporate sustainability into strategy: A systematic literature review", *Corporate Social Responsibility and Environmental Management*, vol. 31, n. 2, pp. 962-976.
- PELOZA J., FALKENBERG L. (2009), "The role of collaboration in achieving corporate social responsibility objectives", *California Management Review*, vol. 51, n. 3, pp. 95-113.
- PORTER M.E., KRAMER M.R. (2018), "Creating shared value: How to reinvent capitalism-And unleash a wave of innovation and growth" In *Managing sustainable business: An executive education case and textbook* (pp. 323-346), Dordrecht: Springer Netherlands.
- PRENESTINI A., RISTUCCIA C., FLORIANELLO M. (2023), "Le pratiche di green management nelle aziende sanitarie: dalle strategie all'implementazione delle azioni in IRCCS Humanitas", *Mecosan-Management ed Economia Sanitaria-Open Access*, vol. 126., pp. 263-273.
- SEMAN N.A.A., ZAKUAN N., RASHID U.K., NASUREDIN J., AHMAD N. (2018), "Understanding stakeholder pressures in adopting environmental management practices based on stakeholder theory: A review", *International Journal of Research*, vol. 5, pp. 1530-1545.
- SMITH N.C. (2001), "Changes in corporate practices in response to public interest advocacy and actions.", in P. N. B. a. G.T. Gundlach (Ed.), *Handbook of Marketing and Society*, Thousand Oaks.
- STOBIERSKI T., [HARVARD BUSINESS SCHOOL ONLINE] (2022), What is sustainable investing? [online] Available at: <<https://online.hbs.edu/blog/post/sustainable-investing>> [Accessed 23 May 2024].
- SULEWSKI P., KŁOCZKO-GAJEWSKA A., SROKA W. (2018), "Relations between agri-environmental, economic and social dimensions of farms' sustainability", *Sustainability*, vol. 10, n. 12, 4629.
- TRAPP N.L. (2012), "Corporation as climate ambassador: Transcending business sector boundaries in a Swedish CSR campaign", *Public Relations Review*, vol. 38, n. 3, pp. 458-465.
- VALBUENA-HERNANDEZ J.P., ORTIZ-DE-MANDOJANA N. (2022), "Encouraging corporate sustainability through effective strategic partnerships", *Corporate Social Responsibility and Environmental Management*, vol. 29, n. 1, pp. 124-134.
- VAN MARREWIK M. (2003), "Concepts and definitions of CSR and corporate sustainability: Between agency and communion", *Journal of business ethics*, vol. 44, n. 2, pp. 95-105.
- VERDECHO M.J., ALARCÓN-VALERO F., PÉREZ-PERALES D., ALFARO-SAIJ J.J., RODRÍGUEZ-RODRÍGUEZ R. (2021), "A methodology to select suppliers to increase sustainability within supply chains", *Central European Journal of Operations Research*, vol. 29, pp. 1231-1251.
- WERTHER JR W.B., CHANDLER D. (2005), "Strategic corporate social responsibility as global brand insurance", *Business Horizons*, vol. 48, n. 4, pp. 317-324.
- WORLD HEALTH ORGANIZATION [WHO] (2023), *Seventh Ministerial Conference on Environment and Health* [online]. Available at: <<https://www.who.int/europe/event/seventh-ministerial-conference-on-environment-and-health>> [Accessed 23 May 2024].

The role of HR analytics to enable Strategic HR management in SMEs

CHRISTIAN DI PRIMA¹ ALBERTO FERRARIS²

Abstract

Despite human resource (HR) management activities are increasingly recognized as crucial also for small and medium enterprises (SMEs), in the last decade the academic literature has mostly overlooked the difficulties experienced by these companies when dealing with the matter. Consequently, the objective of this study is to explore these difficulties and to understand how a data-driven approach enabled by HR analytics can help in overcoming them and establish a strategic approach to HR management in SMEs. In order to do so, a qualitative, multiple case study methodology will be applied. This approach will allow us to revitalize the academic discourse by incorporating the contemporary challenges and complexities encountered by SMEs when dealing with HR management, filling the void left by the stagnation of literature in the past decade. Furthermore, we will expand the HR analytics related literature by exploring its role also in SMEs.

Key words: HR management; HR analytics; HR management activities; small companies; medium companies; SMEs, qualitative approach, multiple case study

Framing of the research. Italy is home to a substantial number of small and medium enterprises (SMEs) that form the backbone of its economy (Istituto Nazionale di Statistica 2023). These enterprises, often family-owned or characterized by close-knit communities (Matarazzo et al. 2021), typically exhibit peculiarities that distinguish them from their larger counterparts, such as limited resources, a familial organizational culture, and a close interdependence between business and personal relationships (Nigri and Di Stefano 2021)

The profound shocks experienced globally in the past few years, including economic downturns and public health crises, have been even more pronounced in SMEs, amplifying the challenges faced by these enterprises (Miklian and Hoelscher 2022), due to the intricacies of their operations coupled with a higher degree of interdependence between business and personal relationships (Rubio-Andrés et al. 2022). This heightened turbulence has accentuated the critical role of human resource (HR) management in SMEs. With the increasing complexities and uncertainties in the business landscape, SMEs have been compelled to reassess their HR management strategies to effectively navigate through these challenges (Ottolenghi 2023). As a result, there has been a notable escalation in the emphasis placed on HR management practices within SMEs, highlighting the imperative for robust HR management frameworks tailored to the unique needs and constraints of these enterprises. Unlike larger organizations with dedicated HR departments, SMEs often grapple with limited HR expertise and financial constraints (Psychogios et al. 2016). Furthermore, these enterprises are notably lagging in the digitalization of HR management processes compared to their larger counterparts (Verma et al. 2021; Nicolás-Agustín et al. 2024). In SMEs, the responsibilities of HR management frequently fall on the shoulders of the owner / manager, a role that demands multifaceted competencies ranging from strategic HR planning to daily operational tasks. This dual role places a strain on the managerial capacity, potentially hindering the development of effective HR management strategies (Atkinson et al. 2022).

To address this issue, there is a growing recognition that HR analytics, defined as «a proactive and systematic process for ethically gathering, analyzing, communicating and using evidence-based HR research and analytical insights to help organizations achieve their strategic objectives» (Falletta and Combs, 2021, p. 54), can serve as a valuable tool for SMEs, providing insights and data-driven decision-making support in the absence of a dedicated (and strategic) HR function (Biea et al. 2023). Indeed, although until a few years ago, this tool was the prerogative of only a few companies - particularly, multinational corporations in the technology or financial sectors (Andersen 2017) - in recent years, its diffusion has significantly increased even in smaller-sized enterprises. This has been made possible by the evolution of technology, which, on one hand, has allowed for the automation of a considerable part of the process, making analytics more accessible even to individuals with limited expertise in data analysis (Arora et al. 2021). On the other hand, technology advancement has substantially reduced the costs associated with these solutions, a crucial aspect for SMEs often operating with limited resources. Providers of HR analytics technologies have also played their part by designing

¹ University of Torino
e-mail: christian.diprima@unito.it

² University of Torino
e-mail: alberto.ferraris@unito.it

tailored solutions specifically addressing the needs of SMEs (e.g. Keka and People Matters 2023). The utilization of HR analytics in SMEs is particularly pertinent, given the limited expertise and time constraints typically faced by owners / managers (Atkinson et al. 2022). This tool can offer crucial advantages in enhancing decision-making processes related to HR management, compensating for the absence of specialized HR professionals.

Despite the burgeoning body of research in HR management, there exists a significant gap when it comes to investigating the intricacies of HR management within the context of SMEs. The current literature, though expanding, remains fragmented and variable, marked by a diversity of definitions, explanations, and methodological approaches (Harney and Alkhalaf 2021). This gap is further exacerbated when considering the myriad challenges and difficulties that SMEs encounter in the realm of HR management. While scholarly attention towards HR management in SMEs was relatively extensive during the 1990s and the initial years of the 21st century (e.g. Tocher and Rutherford 2009), there is a conspicuous absence of more recent studies that reflect the substantial changes these businesses have undergone in the last decade. The evolving landscape, characterized by global shocks and technological advancements, necessitates a contemporary understanding of HR management in SMEs. Adding to this lacuna, existing research on the topic has predominantly adopted the perspective of the owner/manager, overlooking the invaluable viewpoint of employees (Harney and Alkhalaf 2021). This is a noteworthy concern, especially given the assertion that employees in SMEs have been observed to be more 'discriminating' and 'diagnostic' compared to the owner / manager (Verreynne et al. 2013). Focusing solely on the owner / manager perspective limits the comprehensiveness of our understanding, potentially overlooking crucial nuances in the HR management dynamics within SMEs. Furthermore, despite these companies are increasingly relying on HR analytics to deal with their HR management practices, previous studies on the topic typically focused on large companies, as these typically present the most advanced HR analytics tools (Cayrat and Boxall 2022; Thakur et al. 2024).

Purpose of the paper. In light of the research gaps that have been identified, the main objective of this paper is to provide a more comprehensive understanding of the multifaceted challenges and difficulties faced by SMEs when dealing with HR management. This will be done by adopting a holistic approach that considers a dual perspective, the first from the owner / manager and the second from the employees. Furthermore, our research endeavors to assess the role of HR analytics in assisting SMEs in navigating these challenges. Our study will thus try to answer the following research questions:

RQ1: What are the main challenges and difficulties experienced by small and medium enterprises when dealing with human resource management?

RQ2: How can a data driven approach fostered by HR analytics help in overcoming these issues and foster a strategic approach to human resource management in small and medium enterprises?

Methodology. To address the research questions formulated in this study, we will employ a qualitative method, adopting an exploratory multiple case study approach (Yin 2014; Sardi et al. 2020). Respondents will be selected through purposeful sampling in order to assure that they possess specific criteria relevant to the purpose of our study. To facilitate the recruitment process, we will collaborate with one of the largest Italian HR analytics technology providers, leveraging their network and resources to reach potential participants efficiently. Specifically, we will select small and medium Italian enterprises which have been implementing HR analytics in the last three years. In addition to respect the conditions to be defined as a small or medium enterprise (Loecher 2000), selected companies should be privately owned (thus excluding, for example, spin off companies from larger organizations, even if they should respect the abovementioned conditions). Companies will be included from a variety of sectors, growth stages (startups, established businesses, companies scaling up, etc.) and HR management maturity level (from a totally informal to more advanced infrastructures) to ensure that participants will provide diverse and relevant perspectives. Ideally, to assure a representative sample of participants, we would like to include at least 20 companies.

Semi-structured interviews will be conducted with key organizational stakeholders, encompassing both the owners / managers and the employees. The Gioia method (Gioia et al. 2013) will guide the analysis of these interviews. To facilitate a comprehensive coding approach, all interviews will be transcribed in their entirety (Miles et al. 2014). The analytical process will involve a multi-step iterative approach, incorporating critical verification techniques such as cross-checking by different coders to enhance validity (Morse et al. 2002).

Results. As the study is currently ongoing, the following discussion outlines the possible results that may be obtained by reflecting on those of previous research. Previous studies, such as Tocher and Rutherford (2009), have highlighted that SMEs commonly encounter challenges in attracting, developing, and retaining high-quality employees. This aligns with a broader understanding that SMEs face distinctive hurdles in their HR management practices.

Typically, SMEs grapple with a range of difficulties in HR management, including resource constraints, limited expertise, and the inherent complexity of managing both business and personal relationships within the organization (Nigri and Di Stefano 2021). These challenges often manifest in the struggle to establish effective recruitment and retention strategies, provide comprehensive employee training and development, and implement robust performance management systems (Mendy 2021; Jones et al. 2024).

While these issues have been extensively examined in the existing literature, recent years may have witnessed the emergence of new challenges. Although scholarly attention towards HR management challenges and difficulties in SMEs appears to have slowed down, contemporary developments such as the emphasis on diversity and inclusion (Ravazzani et al. 2021), the growing importance of employee wellbeing (Pagán-Castaño et al. 2020), and the integration of innovative technologies like artificial intelligence could introduce novel complexities (Biea et al. 2023). The dynamic nature of the

business landscape suggests that these trends may significantly impact HR management practices in SMEs, necessitating a reevaluation of traditional challenges and the exploration of contemporary issues.

Against the backdrop of these challenges, the strategic adoption of HR analytics emerges as a potential catalyst for overcoming these hurdles. HR analytics offers a data-driven approach that can empower organizations to make informed decisions, optimize processes, and address longstanding challenges in a more efficient manner (Falletta and Combs 2021). Regarding talent acquisition and retention, HR analytics can provide valuable insights into recruitment trends, employee preferences, and turnover patterns (Di Prima et al. 2023). By leveraging predictive analytics, organizations can identify potential recruitment challenges, understand factors contributing to employee attrition, and tailor strategies to attract and retain the right talent (Yahia et al. 2021). HR analytics can also optimize training and development initiatives by identifying skill gaps, assessing the effectiveness of training programs, and providing real-time feedback. This data-driven approach allows organizations to prioritize training investments and ensure they align with business objectives (Di Prima and Ferraris 2023). For what concerns performance management, HR analytics may enable a more objective evaluation of employee performance, facilitating fair assessments and data-driven feedback (McCartney and Fu 2022). This can contribute to the development of personalized development plans and, ultimately, enhance overall organizational performance (Di Prima and Ferraris 2022). Finally, in the face of emerging challenges such as diversity and inclusion, employee wellbeing, and technological innovations, HR analytics can help organizations adopting a proactive approach. By analyzing data related to workforce diversity, employee satisfaction, and the impact of technological advancements, SMEs can tailor their HR strategies to meet evolving needs. For instance, predictive analytics can help forecast potential wellbeing issues, allowing organizations to implement proactive measures to support their employees (Gurusinghe et al. 2021).

Research limitations. Despite its important contribution, this study is not exempt from limitations. First, as data will be exclusively collected in Italy, the findings may have limited generalizability to different cultural, economic, or institutional contexts. SMEs in other regions or countries may exhibit distinct characteristics that influence HR management practices and outcomes differently. Second, despite all necessary precautions will be taken, the accuracy and reliability of the data hinge on participants' willingness to provide honest and comprehensive responses. Response bias, where participants may provide socially desirable responses or withhold certain information, could impact the validity of the results. Third, qualitative analysis, such as the interpretation of semi-structured interviews, introduces an inherent subjectivity. The researcher's interpretation and coding process may influence the outcomes, potentially leading to biased conclusions.

Managerial implications. This study bears significant practical implications for practitioners and SMEs owners aspiring to refine their HR management practices. Initially, the meticulous identification and exploration of the primary challenges and difficulties confronting SMEs furnish practitioners with actionable insights. A comprehensive understanding of these challenges empowers practitioners to formulate targeted strategies, effectively surmounting obstacles and fostering a more efficient organizational environment. Secondly, the explication of HR analytics' role may serve as a catalyst for increasing the adoption of this sophisticated tool within SMEs. In fact, its usage may improve decision-making processes and organizational outcomes, with a positive impact for both the enterprise and the overall society, since SMEs constitutes the backbone of Italian economy.

Originality of the paper. This study will contribute significantly to the existing literature by shedding light on the role of HR management within the distinctive context of SMEs. First, by delving into the main difficulties faced by these enterprises, the study will reopen a crucial debate that witnessed its peak in the 90s and the first decade of the 21st century, yet experienced a notable decline in scholarly attention thereafter. The research will not only clarify the contemporary challenges but also introduces new findings, considering the emergence of novel complexities such as technological advancements, diversity and inclusion imperatives, and other evolving trends. Second, unlike a predominant focus on the viewpoint of owner / managers in most previous studies, this research takes a novel approach by incorporating the perspectives of employees. Recognizing the significance of both organizational leaders and staff in shaping HR management outcomes, this inclusive approach provides a more comprehensive understanding of the dynamics at play within SMEs. Third, this study stands out in the realm of HR analytics literature by shifting the focus from large enterprises to SMEs. While much of the existing research concentrates on the adoption and impact of HR analytics in larger organizations, this paper addresses a critical gap by exploring the utilization of HR analytics technology in the context of SMEs. By doing so, it offers unique insights into how these businesses leverage technology to enhance their HR management practices, bridging a significant knowledge void in the current academic landscape, ultimately expanding and enriching the existing literature on the topic.

References

- ANDERSEN M.K. (2017), "Human capital analytics: the winding road", *Journal of Organizational Effectiveness: People and Performance*, vol. 4, n. 2, pp. 133-136.
- ARORA M., PRAKASH A., MITTAL A., SINGH S. (2021), "HR Analytics and Artificial Intelligence-Transforming Human Resource Management", 2021 *International Conference on Decision Aid Sciences and Application (DASA)*. Presented at 2021 International Conference on Decision Aid Sciences and Application (DASA), IEEE, Sakheer, Bahrain, p. 288-293.

- ATKINSON C., LUPTON B., KYNIGHOU A., ANTCLIFF V. (2022), "Small firms, owner managers and (strategic?) human resource management", *Human Resource Management Journal*, vol. 32, n. 2, pp. 449-469.
- BIEA E.A., DINU E., BUNICA A., JERDEA L. (2023), "Recruitment in SMEs: the role of managerial practices, technology and innovation", *European Business Review*.
- CAYRAT C., BOXALL P. (2022), "Exploring the phenomenon of HR analytics: a study of challenges, risks and impacts in 40 large companies", *Journal of Organizational Effectiveness: People and Performance*, vol. 9, n. 4, pp. 572-590.
- DI PRIMA C., FERRARIS A. (2022), "Save the planet, but do not leave people behind: an interdisciplinary data-driven approach to Social Sustainable Operations and HR Management", *Boosting knowledge & trust for a sustainable business: Electronic Conference Proceedings*. Presented at Boosting knowledge & trust for a sustainable business, Fondazione Cueim, Verona, p. 309-313.
- DI PRIMA C., FERRARIS A. (2023), "Can HR analytics improve HR management practices impact on organizational performance? An empirical CB-SEM approach", *Rediscovering local roots and interactions in management: Referred Electronic Conference Proceedings*. Presented at Rediscovering local roots and interactions in management, Fondazione Cueim, Verona, p. 941-945.
- DI PRIMA C., KOTASKOVA A., YILDIZ H., FERRARIS A. (2023), "How to survive social crises? An HR analytics data-driven approach to improve social sustainable operations' effectiveness", *Management Decision*.
- FALLETTA S.V., COMBS W.L. (2021), "The HR analytics cycle: a seven-step process for building evidence-based and ethical HR analytics capabilities", *Journal of Work-Applied Management*, vol. 13, n. 1, pp. 51-68.
- GIOIA D.A., CORLEY K.G., HAMILTON A.L. (2013), "Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology", *Organizational Research Methods*, vol. 16, n. 1, pp. 15-31.
- GURUSINGHE R.N., ARACHCHIGE B.J.H., DAYARATHNA D. (2021), "Predictive HR analytics and talent management: a conceptual framework", *Journal of Management Analytics*, vol. 8, n. 2, pp. 195-221.
- HARNEY B., ALKHALAF H. (2021), "A quarter-century review of HRM in small and medium-sized enterprises : Capturing what we know , exploring where we need to go", *Human Resource Management*, vol. 60, n. 1, pp. 5-29.
- ISTITUTO NAZIONALE DI STATISTICA (2023), *Annuario Statistico Italiano 2023*.
- JONES O.W., DEVINS D., BARNES G. (2024), "Developing SME performance management practices: interventions for improving productivity", *International Journal of Productivity and Performance Management*, vol. 73, n. 1, pp. 327-360.
- KEKA, PEOPLE MATTERS (2023), *HR Analytics and You: Unleashing Your Workforce's Potential*.
- LOECHER U. (2000), "Small and medium-sized enterprises - delimitation and the European definition in the area of industrial business", *European Business Review*, vol. 12, n. 5, pp. 261-264.
- MATARAZZO M., PENCO L., PROFUMO G., QUAGLIA R. (2021), "Digital transformation and customer value creation in Made in Italy SMEs: A dynamic capabilities perspective", *Journal of Business Research*, vol. 123, pp. 642-656.
- MCCARTNEY S., FU N. (2022), "Bridging the gap: why, how and when HR analytics can impact organizational performance", *Management Decision*, vol. 60, n. 13, pp. 25-47.
- MENDY J. (2021), "Performance management problem of four small and medium-sized enterprises (SMEs): towards a performance resolution", *Journal of Small Business and Enterprise Development*, vol. 28, n. 5, pp. 690-710.
- MIKLIAN J., HOELSCHER K. (2022), "SMEs and exogenous shocks: A conceptual literature review and forward research agenda", *International Small Business Journal: Researching Entrepreneurship*, vol. 40, n. 2, pp. 178-204.
- MILES M.B., HUBERMAN A.M., SALDAÑA J. (2014), *Qualitative data analysis: a methods sourcebook*, Third edition., SAGE Publications, Inc, Thousand Oaks, California.
- MORSE J.M., BARRETT M., MAYAN M., OLSON K., SPIERS J. (2002), "Verification Strategies for Establishing Reliability and Validity in Qualitative Research", *International Journal of Qualitative Methods*, vol. 1, n. 2, pp. 13-22.
- NICOLÁS-AGUSTÍN Á., JIMÉNEZ-JIMÉNEZ D., MAESO FERNANDEZ F., DI PRIMA C. (2024), "ICT training, digital transformation and company performance: an empirical study", *European Journal of Innovation Management*.
- NIGRI G., DI STEFANO R. (2021), "Family Business in Italy: a Humanistic Transition of Assets and Values from One Generation to the Next", *Humanistic Management Journal*, vol. 6, n. 1, pp. 57-76.
- OTTOLENGHI C. (2023), "Human Resource Management Shaped In A Platform: A Literature Review", *Sinergie Italian Journal of Management*, vol. 41, n. Sept-Dec.
- PAGÁN-CASTAÑO E., MASEDA-MORENO A., SANTOS-ROJO C. (2020), "Wellbeing in work environments", *Journal of Business Research*, vol. 115, pp. 469-474.
- PSYCHOGIOS A., SZAMOSI L.T., PROUSKA R., BREWSTER C. (2016), "A three-fold framework for understanding HRM practices in South-Eastern European SMEs", *Employee Relations*, vol. 38, n. 3, pp. 310-331.
- RAVAZZANI S., MAZZEI A., FISICHELLA C., BUTERA A. (2021), "Diversity and inclusion management: an analysis of practice developments in Italy", *Sinergie Italian Journal of Management*, vol. 39, n. 3, pp. 213-229.
- RUBIO-ANDRÉS M., RAMOS-GONZÁLEZ M. DEL M., SASTRE-CASTILLO M.Á. (2022), "Do High Performance Work Systems Improve Workplace Well-Being in SMES? Implications for Financial Performance", *Applied Research in Quality of Life*, vol. 17, n. 3, pp. 1287-1309.
- SARDI A., SORANO E., GARENGO P., FERRARIS A. (2020), "The role of HRM in the innovation of performance measurement and management systems: a multiple case study in SMEs", *Employee Relations: The International Journal*, vol. 43, n. 2, pp. 589-606.
- THAKUR S.J., BHATNAGAR J., FARNDAL E., AERON P. (2024), "Human resource analytics, creative problem-solving capabilities and firm performance: mediator moderator analysis using PLS-SEM", *Personnel Review*.
- TOCHER N., RUTHERFORD M.W. (2009), "Perceived Acute Human Resource Management Problems in Small and Medium Firms: An Empirical Examination", *Entrepreneurship Theory and Practice*, vol. 33, n. 2, pp. 455-479.
- VERMA S., SINGH V., BHATTACHARYYA S.S. (2021), "Do big data-driven HR practices improve HR service quality and innovation competency of SMEs", *International Journal of Organizational Analysis*, vol. 29, n. 4, pp. 950-973.
- VERREYNNE M.-L., PARKER P., WILSON M. (2013), "Employment systems in small firms: A multilevel analysis", *International Small Business Journal: Researching Entrepreneurship*, vol. 31, n. 4, pp. 405-431.
- YAHIA N.B., HLEL J., COLOMO-PALACIOS R. (2021), "From Big Data to Deep Data to Support People Analytics for Employee Attrition Prediction", *IEEE Access*, vol. 9, pp. 60447-60458.
- YIN R.K. (2014), *Case study research: design and methods*, Fifth edition., SAGE, Los Angeles

Trick or Treat: Firm's strategic response to temporary shock in the real estate business

ALBERTO MASSACCI¹

Abstract

The sector crisis, exacerbated by the arrival of the pandemic and the need to guide the real estate sector, among the most energy intensive, towards ecological transition, has prompted the Italian government to promote initiatives aimed at stimulating the economy and driving the process of urban redevelopment. Therefore, in 2020, the government promoted an incentive scheme aimed at supporting investments in energy and seismic issues through the involvement of several private actors. On the wave of the shock generated by the policy, real estate building companies had to decide whether to innovate in order to address the new type of demand supported by the rules introduced by the Government. However, managerial skills, time constraints and the relative competitive position of firms have provided different opportunities. The paper investigates the idiosyncratic traits of the real estate building companies that have led to these differences in the exploitation of the resources made available by the Government. In addition, we introduce a risk indicator associated to the negative effect produced by the policy. Results show that while some geographical similarities are present, managerial skills may have contributed to find the right balance between opportunity exploitation and risk management.

Key words: Managerial skills; Dynamic Capabilities; Energy transition; Policy; Real-Estate;

Framing of the research. Climate change mitigation policies are increasingly under the scrutiny of all governments in the world. While providing an opportunity for countries to take advantage of the potential effect at the macro-level, those policies more often generate alteration to the internal market in which they are implemented. For this reason, Governments seek to maximize the sustainability effect of the policy by not limiting the effects to environmental aspects but also trying to promote the social and economic sustainability of the country.

The need for firms to respond to the introduction of innovations and the evolving consumption habits of consumers that generates supply and demand shocks in the industry has been largely debated in the Economic and Managerial literature (Wang et al., 2014). In such a context, the managerial impact on strategic change and firm performance has been largely emphasized (Helfat et al., 2015). From a Dynamic Capabilities perspective, formulating a strategy to gain a competitive advantage starts with the adoption of suitable business models and technologies. This adoption facilitates the seamless combination and orchestration of assets that are inherently challenging to replicate (Teece, 2007). A stream of literature has emphasized how firm's diversity in a competitive environment may lead to the adoption of different strategies due to comparative adjustments costs (Argyres et al., 2015). Indeed, firms must consider the costs and time needed to shift from their existing position to any of the potential competitive positions that may arise as a result of the innovation shock; hence, they must decide whether, where, and how to adjust to a particular competitive position opened by the shock (Argyres et al., 2018).

The real estate sector is responsible for 43% of the whole energy consumption, with residential properties contributing to two thirds of consumption at the European level (Enerdata, 2021). The European Union, as part of the European Green Deal, has introduced the Energy Efficiency of Buildings Directive, aiming to establish minimum standards that countries must adhere to within specified timelines.

In response to these directives and to contribute to the economic recovery, in 2020, the Italian government has introduced a new incentive mechanism to support the environmental transition of the Real Estate sector. This program, called "Superbonus", has offered tax incentives for all costs spent by citizens on the requalification of their homes (mainly seismic and energy improvements). The incentive consists of a tax deduction of 110% of the expenditure. This, while providing an opportunity for citizen, has contributed to the surge in demand for services in several sectors. Among the most activated industries by the policy are, obviously, the Real Estate (with all the entire supply chain connected to the provision of the services) and the banking sector.

However, some aspects related to the policy have led companies to modify their business strategies in order to respond to new market needs. This has led companies to add innovations to their business models and the ability to manage such innovations has been the key to the success of the companies in the last 3 years; indeed, in order to guarantee the social sustainability of the policy and a fair access to opportunities, the government has introduced 2 credit management mechanisms. The first consists in the possibility of the citizens to monetize the incentive by selling the credit generated

¹ e-mail: albertomassacci@hotmail.it

through the restructuring. The second involves a discount on the invoice by the construction company in exchange for the transfer of the credit from the citizen to the company which, in turn, will be able to decide whether to use the tax credit or sell it to third parties. Such mechanisms should have prevented the inability of citizens to exploit the benefits due to low fiscal capacity or liquidity constraints (indeed, the discount on the invoice was usually equal to the total amount since the company was able to obtain a credit equal to 110% of the invoice).

Due to this, banks had the opportunity to create a market for credits since financial institutions were the only actors authorized to buy and re-sell this new type of credit (while the others only had the possibility to buy and use the fiscal credits for their needs).

On the other hand, building companies were asked from the market to offer the invoice discount as an alternative payment method. In order to satisfy the new rising demand, firms were asked to create a new system of credit management that involved financial, fiscal and managerial capabilities. Indeed, while fiscal and financial abilities should be used to determine the appropriate volume of work to manage while satisfying the financial obligations, managerial skills were crucial to manage the supply chain requirements needed to respond to the increased demand for work.

These prerequisites turned out to be even more necessary in the moment of explosion of demand given that the market offer was not able to absorb all the requests generated by the incentive.

In such a context, managerial skills have been crucial in defining objectives in line with company capabilities. Although, in the short term, the wickedness of some companies has produced unfair competition on the market, as soon as the issues related with this new type of business began to emerge, most of these companies found it difficult to continue their activities, creating discontent among the clients who had hoped to carry out the works at zero cost.

Purpose of the paper. Drawing on the literature on innovation capabilities and the conceptualization of comparative adjustment costs, the work aims to provide an overview of the relationship between firms' competences and structure, innovation strategies, and their impact on performance. The study is applied within a specific framework that, as previously mentioned, has temporarily positively shocked the market demand due to the introduction of a policy that has generated a new market segment (i.e. the completion of the renovation works with a discount on the invoice and, therefore, no financial outlay for the client). While creating new demand for building companies, the policy has shifted part of the original demand towards this new market segment.

This paper attempts to contribute to this literature by providing new empirical evidence on the impact of firm's competencies on the ability to respond to market changes. Differing from most previous contributions, this work delves into a sector with low managerial involvement. Furthermore, the peculiarity of the case under study arises from the temporary nature of the shock, which introduces an additional parameter for firms to consider in their strategic choices. From a policy perspective, the paper explores how uncontrolled resource distribution can accentuate disparities among companies, thereby amplifying the competitive gap dictated by original capabilities.

Methodology. The empirical goal of the paper is to assess the strategic actions and performance across the heterogeneity in competence and structure that characterizes the industry in response to the introduction of the Superbonus. The analysis is conducted on a database of real estate building companies that are monitored from year 2018 to 2022.

The two main research questions we aim to investigate in the paper concern the firm's characteristics that may have contributed to increase the likelihood to enter this new market, generated by the policy, and whether there exist some aspects that have facilitated the management of this transition.

In order to answer the first question, we will measure the willingness to innovate the original business by implementing the invoice discount and, as a consequence, we will look at the rate of variation in the fiscal credits between the period before the introduction of the policy (2018) and the last available year (2022). Furtherly, we will see whether some firm's characteristics have also contributed to the increase in the volume of production, measured as the rate of variation in turnover over the same period.

In the second part of the analysis, we will measure the ability of firms to navigate the policy by developing a risk metric that relates to a significant issue faced by companies due to the policy, specifically concerning the trading of fiscal credits. This challenge was evident in both the invoice discount scenario, where the responsibility of selling the credits rested with the company, and in the credit transfer situation, where the buyer paid the company and monetized the incentive through credit sales. The conversion system faced a substantial setback primarily due to a lack of buyers. Consequently, companies found themselves accumulating fiscal credits without the ability to convert them into liquidity. Simultaneously, clients struggled to meet their financial obligations because of the difficulty in promptly converting credits at various project stages.

Hence, the risk measure used in the analysis is constructed as:

$$\frac{\text{Fiscal credits}}{\text{Turnover}}$$

The firms' characteristics that we aim to investigate are their overall competence, the organizational structure and the managerial capabilities. Given the availability of information in the data, the three measures have been proxied as the "Average employee salary" for firm's overall competence (Diaz-Fernandez et al., 2009), Return on Assets for the

managerial² aspects and the “number of employees in relation to the turnover volume” for the organizational structure.

For the first part of the exercise, given that the goal is to understand the strategic decisions made on the base of the ex-ante structure of the firms, we will regress lagged companies’ structures on the final variable of interest³.

In order to estimate the effect that organizational structure and competence have played in this period (i.e. The ability to navigate the policy), we have used the difference-in-difference with continuous variable treatment (Callaway et al., 2024) regression to exploit the introduction of the exogenous shock as a trigger point, while taking into account the different organizational, managerial and competence levels. Since the introduction of the measure was in mid-2020 and works took a while to start due to the lack of available materials, the effects on the balance sheets are likely to be present from year 2021; hence, the arrival time (trigger effect) was postponed by one year and constructed as (0.5 for 2021 and 1 for 2022). Finally, regional fixed effects were used to account for the territorial differences that have emerged in the implementation of this policy, both on the supply and demand side. The second year of the Superbonus in the trigger variable is greater than the first because our variable of interest are likely to sum up to the previous year; hence, a standard dummy variable would be likely to bias our estimates.

Data and Statistics. The companies analysed cover the whole Italian territory. The dataset is limited to firms that had an available balance sheet and a turnover constantly above one million euros for the entire period under analysis, in order to ensure adequate reliability of the financial statements.

The overall dataset is made of 11.059 real estate building companies which were selected according to their NACE code. The period of analysis cover 5 years-time (from year 2018 to 2022 (last available)). Since our only source of information is the AIDA database, we exploit the information obtainable from the balance sheet in order to deepen our research interests.

Table 1: Average value by year. *(value in thousands of euros)

Firms Overview	2018	2019	2020	2021	2022
Turnover*	5188	5498	5280	6726	8260
NOI*	123	162	159	108	415
Fiscal Credits*	206	210	218	450	672
Credits to Client*	2119	2154	2152	2455	2824
Employees	23	24	25	27	27

Table 1 shows how the policy has pushed firms’ turnover, while simultaneously increasing the relative weight of credits in relation to firms’ size and turnover.

Indeed, by looking at the yearly variation in different measure of riskiness that we considered [i.e. $\frac{\text{Fiscal Credits}}{\text{NOI}}$], it is clear how the overall riskiness related to this concept has changed with the arrival of the Superbonus; moreover, despite the fiscal credits compared to the net operating income have decreased in 2022, it is crucial to consider that while the fiscal credits will remain in companies balance sheet for the next five years, if they won’t be able to find a buyer, the end of the Superbonus will probably be reflected in a huge drop in firms’ turnover and income from year 2023.

The need to find potential buyer for the credits deriving from the Superbonus (included those related to clients since they were likely intentioned to sell them to third parties⁴) for such a large amount of credits is, nowadays, resulting in very large discount rate which will be reflected as income loss for firms and citizens.

If we look at the geographical effects of the policy, we can see that while the variation in fiscal credit was larger in the northern area, with the exception of some Sicilian provinces (Figure 1), the variation in financial turnover was much more relevant in the southern regions.

² Given that all the companies are in the same business, we assume that ROA can be a proxy of the managerial capacity of the company in generating profit.

³ The need to investigate the strategy rather than investigating the evolution has led to the exploitation of the dataset in longitudinal terms but without utilizing its panel structure.

⁴ Indeed, many citizens have been forced to anticipate the cost of refurbishment due to the difficulties in finding building firms that were able to offer the invoice discount after the initial period of euphoria. This was mainly done through private liquidity or bank mortgages; however, given the high cost required to satisfy the energy improvement minimum standards, the ability to monetize fiscal credits through tax deduction is only possible for a relatively large share of households. Moreover, no further impediments have been caused by the Superbonus, in terms of availability of liquidity to pay for renovations for owners who have no intention of selling tax credits, such as to justify such a significant increase in the ratio between customer receivables and turnover.