

Figure 1: Variation in Fiscal Credit (2019 to 2022)

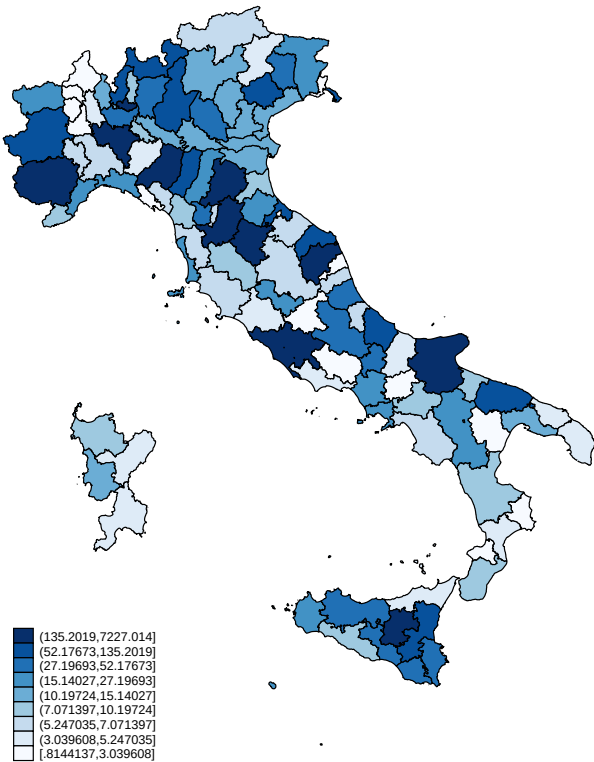
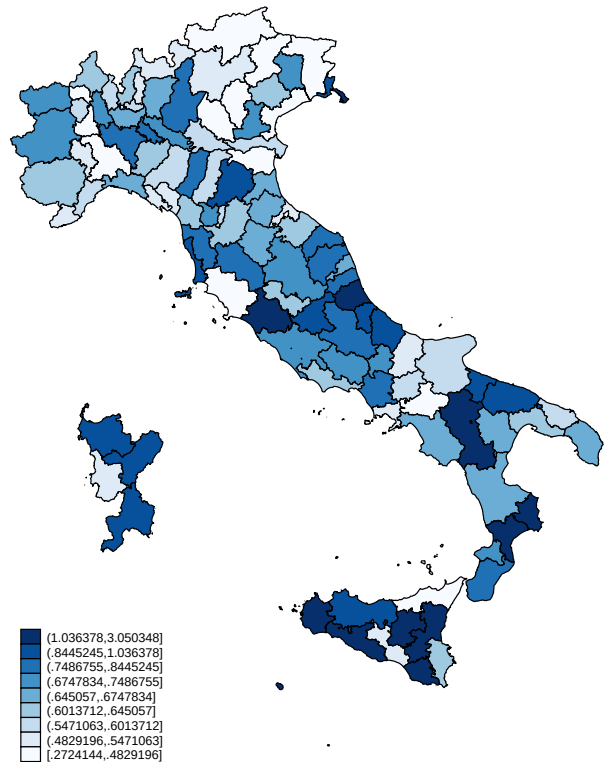


Figure 2: Variation in Turnover (2019 to 2022)



Investigating the riskiness associated to the negative effect of the policy, Figures 4 and 5 provide a very distinct situations where the south of Italy appears to be much more affected both in terms of accounts receivable from customers and regarding the tax credits held by companies. While the graphs and statistics provide an understanding of the overall effect of the Superbonus on real estate building companies. The goal of this paper is to analyse which characteristics have been determinant in deciding whether to adapt the business model to the needs of the policy and how firms' characteristics have affected the overall company management of this period.

Figure 3: Fiscal Credits over Net Operating Income

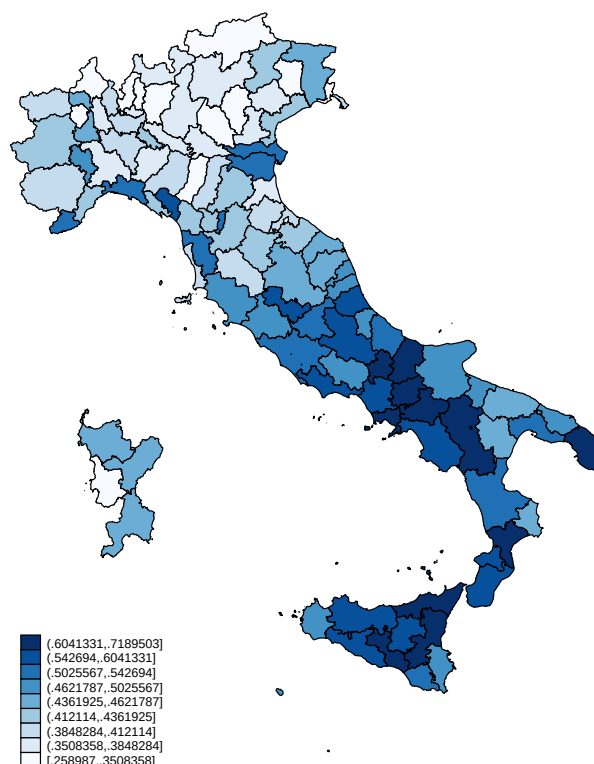
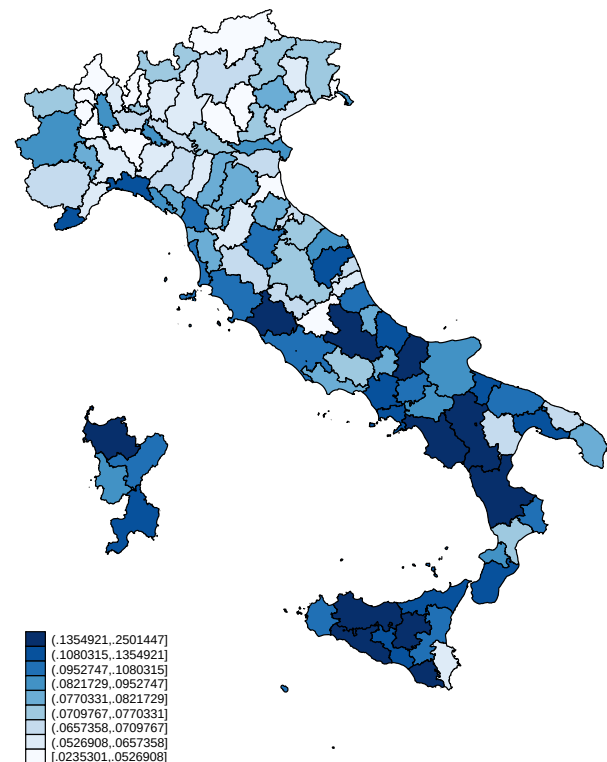


Figure 4: Fiscal credits and credits to clients over turnover



Results. As previously mentioned, the research questions that we aim to answer in this paper, in addition to presenting a descriptive overview of the effects of the Superbonus, concern the firm's characteristics that have increased 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.

Table 2 and 3 in the Appendix provide the results of the effect on the strategy adopted by firms in this period in relation to their overall competence, the organizational structure and the managerial capabilities.

The results show that, although the Superbonus has generated a widespread increase both in terms of business volumes and in the implementation of the new business model, some company characteristics are significant in defining the adopted strategies; indeed, while all three firm characteristics investigated are associated to a more prudent strategy in terms of production volumes, managerial skills appear to have facilitated access to the new market type generated by the introduction of the invoice discount⁵.

With regard to the ability to navigate the policy and find the right balance between performance and risk management, the regression show that the Superbonus has increased the overall riskiness of the sector (the trigger variable is positive and statistically significant in all regressions) which could be amplified in case of a slow down in the real estate market in the following years.

Moreover, Tables 4, 5 and 6 show how all the variables of interest are acting as positive moderator in the management of the fiscal credits. However, while overall competence and managerial capabilities are statistically significant at the 10% level, the organizational structure, despite displaying a negative correlation with the risk measures used in the analysis, does not provide statistically significant results.

Research limitations. The paper is an explorative study that focus on the financial information drawn on the AIDA database that have forced to approximate proxies regarding the company's characteristics. Indeed, future explorations could be expanded through the exploitation of different data sources, such as questionnaires. Moreover, future assessments are essential to provide a comprehensive picture of the impact generated by the policy, as the measure is still ongoing.

Furthermore, since the Superbonus has often been associated with scams related to the non-existence of construction sites for which work was invoiced, and thus tax credits obtained, another aspect of investigation that will need to be taken into consideration concerns this aspect, which to date remains unexplored.

Managerial implications. The managerial implications are several as it delves into the managerial and policy implications of public incentives aimed at fostering sustainable goals. From a policy perspective, it seeks to analyze the effects on private sectors of the use of public resources in the promotion of environmental, social, and economic sustainable goals. Moreover, from a managerial perspective, the paper aims to elucidate the requisite skills for private companies in effectively managing public funds. This is a pivotal aspect within socially significant sectors such as housing, agriculture, and healthcare, as these forms of incentives are frequently employed to bolster them.

Originality of the paper. The best of my knowledge, this study represents the inaugural attempt to explore the effects of one of the most substantial government investments of recent decades on businesses. The novelty of the topic and the data utilized present a subject of significant interest both theoretically and from a managerial standpoint, offering an overview of the real estate sector that could potentially be affected by a forthcoming period of recession.

As previously mentioned, this is our first attempt to delve into this topic, which we intend to explore more deeply in the near future as we wait for the economic cycle to evolve and strive to improve the available data.

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⁵ The invoice discount was already present before the superbond but in a reduced form and spread over many more years, not representing a problem for the companies.

Appendix

Table 2: Firms' characteristics impact on firm strategy (Aggressive strategy measured as the increase in revenues)

Source	SS	df	MS	Number of obs	=	10,701
Model	303.022324	24	12.6259302	F(24, 10676)	=	5.99
Residual	22494.3295	10,676	2.10699977	Prob > F	=	0.0000
				R-squared	=	0.0133
				Adj R-squared	=	0.0111
Total	22797.3519	10,700	2.13059363	Root MSE	=	1.4516

Revenue variation		Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Average salary	L4.	-.0034305	.0007061	-4.86	0.000	-.0048145	-.0020465
ROA	L4.	-.3250569	.1793958	-1.81	0.070	-.676706	.0265923
N. of employees	L4.	-.0009587	.0003381	-2.84	0.005	-.0016214	-.0002959
Employees on turnover	L4.	-12.17989	3.159012	-3.86	0.000	-18.37214	-5.987637
Revenues	L4.	1.50e-06	8.78e-07	1.71	0.087	-2.16e-07	3.23e-06
Regional Fixed Effects							

Table 3: Firms' characteristics impact on firm strategy (entering the fiscal credit management business)

Source	SS	df	MS	Number of obs	=	7,242
Model	809922490	24	33746770.4	F(24, 7217)	=	0.36
Residual	6.7614e+11	7,217	93606091.4	Prob > F	=	0.9982
				R-squared	=	0.0012
				Adj R-squared	=	-0.0021
Total	6.7695e+11	7,241	93488222.3	Root MSE	=	9679.2

Credit variation		Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Average salary	L4.	-4.072634	5.589195	-0.73	0.466	-15.02909	6.883825
ROA	L4.	2584.289	1401.863	1.84	0.065	-163.7734	5332.351
N. of employees	L4.	.1288346	2.279747	0.06	0.955	-4.340137	4.597807
Employees on turnover	L4.	-32657.46	26840.02	-1.22	0.224	-85271.75	19956.84
Revenues	L4.	-.0003724	.0059095	-0.06	0.950	-.0119567	.0112119
Regional Fixed Effects							

Table 4: Firms' characteristics impact on the ability to manage the policy (Organizational structure)

Random-effects GLS regression Group variable: id		Number of obs	=	43,692		
		Number of groups	=	9,578		
R-sq:		Obs per group:				
within = 0.0490		min =		1		
between = 0.0458		avg =		4.6		
overall = 0.0455		max =		5		
corr(u_i, X) = 0 (assumed)		Wald chi2(24)	=	2188.62		
		Prob > chi2	=	0.0000		
Risk Measure	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
Trigger event	.0456987	.0016786	27.22	0.000	.0424088	.0489886
Employees/Revenues	.0069709	.0628745	1.54	0.123	-.0262609	.2202026
Emp./Rev. Treatment	-.3226014	.3035195	-1.59	0.111	-.7195324	.0743294
Average salary	-.0000149	.0000239	-0.62	0.532	-.0000610	.0000319
ROA	-.0013188	.0060702	-0.22	0.828	-.0132163	.0105787
Regional Fixed Effects						

Table 5: Firms' characteristics impact on the ability to manage the policy (Overall Competence)

Random-effects GLS regression Group variable: id		Number of obs = 43,559
		Number of groups = 9,522
R-sq:		Obs per group:
within = 0.0615		min = 1
between = 0.0473		avg = 4.6
overall = 0.0470		max = 5
corr(u_i, X) = 0 (assumed)		Wald chi2(24) = 2286.93
		Prob > chi2 = 0.0000

Risk Measure	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
Trigger event	.0538156	.0028953	25.68	0.000	.0480888	.0579214
Average Salary	7.63e-06	.0000235	0.32	0.744	-.0000385	.0000538
Avg. Salary Treatment	-.0002623	.0000458	-5.73	0.000	-.0003521	-.0001725
Employees/Revenues	.1006473	.0614744	1.73	0.083	-.0138403	.2271349
ROA	-.0008306	.0059481	-0.14	0.889	-.0124887	.0108275
Regional Fixed Effects						

Table 6: Firms' characteristics impact on the ability to manage the policy (Managerial ability)

Random-effects GLS regression		Number of obs	=	43,735
Group variable: id		Number of groups	=	9,595
R-sq:		Obs per group:		
within	= 0.0492	min	=	1
between	= 0.0448	avg	=	4.6
overall	= 0.0453	max	=	5
corr(u_i, X) = 0 (assumed)		Wald chi2(24)	=	2190.80
		Prob > chi2	=	0.0000

Risk Measure	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
Trigger event	.0445156	.0011306	39.37	0.000	.0422996	.0467316
ROA	-.0019484	.0060707	-0.32	0.748	-.0138467	.0099499
ROA Treatment	-.0213997	.0116184	-1.84	0.065	-.0441713	.0013719
Average salary	-.0000156	.0000239	-0.65	0.514	-.0000623	.0000312
Employees/Revenues	.0042423	.0628628	1.50	0.134	-.0289656	.2174522
Regional Fixed Effects						

Track 12
Supply Chain Management,
Logistics & Operations

Who Should Pay for the Returns Product?

The Effect of Transparency on Consumers' Decision-making across the Reverse Supply Chain

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Abstract

The increasing volumes of consumer returns present a growing challenge for retailers, significantly impacting sustainability across all three dimensions of the triple bottom line: environmental, social, and economic. Concurrently, consumers are expressing increasing concerns about the environmental impact of returns. Given these concerns and the increasing involvement of consumers in logistics and supply chain management processes, it becomes imperative for retailers to consider empowering consumers as active decision-makers in the returns management process. Achieving this requires integration of consumers' decisions with a triple bottom line perspective, to align efficient returns management with an enhanced consumer experience. In this study, we investigate how transparency of returns' triple bottom line impact influences consumers' decision-making regarding returns. Drawing on the self-efficacy theory and the concept of psychological distance, we elucidate the social and psychological factors that drive consumer choices. We conduct a series of experiments to address our research questions. Our main study is informed by initial insights derived from a focus group method, followed by a series of complementary experiments, including both a scenario-based and a stated choice study. Our main contribution to the literature extends the existing knowledge on returns by examining the context of consumer decision-making about returns through the lens of psychological mechanisms. Furthermore, our research offers practical insights for retailers by illuminating the alignment of sustainable business goals with an optimal consumer experience in the realm of returns.

Key words: returns; triple bottom line; information disclosure; avoidance; gatekeeping; consumer decision-making; logistics and supply chain management

Framing of the research. Consumer returns are an increasing issue for retailers. Returns accounted for about US\$800 billion in 2023, corresponding to 14.5% of total retail sales (National Retail Federation, 2023). The surge in return volumes, primarily driven by lenient return policies, poses substantial sustainability challenges (Abdulla et al., 2022). However, consumer returns are not just an economic problem for retailers; they also negatively impact the environment and society (Paul, 2024), as reflected in the triple bottom line perspective (Elkington, 1998). Annually, 9.5 billion pounds of returns end up in U.S. landfills, while the process of handling returns generates 24 million metric tons of carbon dioxide (Optoro, 2022). Consumers recognize the looming ecological catastrophe and are increasingly concerned with the environmental impact of returns. According to the ReBOUND consumer survey in 2020, “74% of consumers say that they intend to shop more with brands that are making their delivery and returns processes more sustainable”, while 71% of shoppers reveal that “they’d be willing to pay more to return via a more sustainable return option” (IMRG, 2021). In terms of the social impact of returns, retail workers’ paychecks are negatively affected by lost commissions due to opportunistic and fraudulent returns (Abrams, 2016).

In recognition of the acute consequences that stem from ignoring consumer returns, retailers place efficient management of returns and consumer experience among their top three priorities (Optoro, 2023). To address the first goal, the retailers leverage returns avoidance and gatekeeping actions aimed at reducing return volumes and tackling the sustainability challenges at hand. Gatekeeping includes all actions that prevent unwarranted returns (Rogers et al., 2002), such as J. Crew’s US\$7.50 return fee. Returns avoidance involves developing and selling a product to minimize return requests (Rogers et al., 2002). For example, the partial refund (i.e., an opt-out discount) offered by Threadup.com allows dissatisfied consumers to keep the item without returning it. Both actions have potentially negative consequences for consumer experience.

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One way for retailers to address the goal of improving consumer experience is to move beyond the one-size-fits-all return policies and empower consumers to play a more active role as decision-makers in the return process. Up to now, the literature has investigated the factors that drive managerial decision-making concerning returns, where consumers are only considered as passive recipients of such decisions. Abdulla et al. (2022) find that consumers strongly prefer policies without return fees; however, offering free return shipping implies that costs outweigh gains for retailers (Patel et al., 2021). Thus, free returns are not an optimal option for retailers. In the realm of supply chain transparency, existing literature suggests that information disclosure can enhance consumers' willingness to pay (WTP) for products and services (Duan et al., 2019; Jiang et al., 2021). In sum, as consumers become more involved in logistics and supply chain management processes (Esper et al., 2020; Daugherty et al., 2019) and more concerned about returns impact (IMRG, 2021), it is crucial for retailers to integrate consumer decision-making about returns with the triple bottom line perspective to align their priorities, i.e., efficient management of returns and consumer experience.

Purpose of the paper. Our study delves into returns avoidance and gatekeeping activities where sustainability concerns drive retailer-consumer negotiations in a novel B2C2B perspective. Specifically, we are interested in examining how the transparency of returns' impact in terms of triple bottom line dimension affects consumers' decision-making about returns. We propose to answer to the following research questions:

RQ1. Will consumers pay a premium for sustainable returns?

RQ2. Will consumers accept a price discount to opt out of returns to help retailers meet sustainable goals?

To address these research questions, we draw upon the self-efficacy theory (Bandura, 1977; Basil et al., 2008) and the concept of psychological distance (Simpson et al., 2021; Trope & Liberman, 2010; Viet et al., 2023) to explain the social and psychological factors that drive consumer choices. More specifically, according to the self-efficacy theory, individuals' expectation of efficacy of personal behavior determines how much effort will be expended: the stronger the perceived self-efficacy, the more active the efforts. In fact, individuals' perception that their behavior leads to a certain outcome influences the choice of behavioral activities and settings (Bandura et al., 1977).

The concept of psychological distance originates from the construal level theory (Trope & Liberman, 2010), which provides a conceptual framework to explore how individuals process information and its effects on decision-making (Wiesenfeld et al., 2017). The construal level theory and psychological distance have been widely applied to investigate decision-making in other business domains, such as marketing and organizational behavior, but they have seen limited use in logistics and supply chain management. Psychological distance manifests in four primary dimensions - temporal distance (events that occur further away in the past or future); spatial distance (separated by geography); social distance (persons and cultures that are unfamiliar, or in-groups and out-groups); and hypothetical distance (lack of experience or low probability of events) (Simpson et al., 2021; Trope & Liberman, 2010; Liberman & Trope, 2014). In the context of supply chains, psychological distance holds particular relevance due to its pervasive presence in decision-making processes. Higher psychological distance generally corresponds to decision-makers' reduced awareness of specific details or the practical implications of decisions, leading to more abstract representations of objects, events, persons, and ideas. Consequently, decision-making tends to rely more on abstraction (Soderberg et al., 2014). The manipulation of psychological distance can significantly impact decision outcomes by influencing information processing (Henderson et al., 2006; Ledgerwood et al., 2010; Kirshner & Moritz, 2022). Individuals consistently adapt their behavior in accordance with changes in mental abstraction. During the final product purchase, consumers operate within a concrete mindset; therefore, they tend to exhibit stronger responses to information and issues with low psychological distance compared to those with high psychological distance (Dhar and Kim, 2007). Importantly, the psychological distance is not fixed and can be addressed and reduced through access to information (Simpson et al., 2021).

In this study, we focus on the concept of supply chain transparency as a key building block of our investigation. It is important to address the definition of this key variable as well as its adaptation and operationalization within the context of our research questions. Sodhi and Tang (2019) define supply chain transparency as the disclosure of information to the public, including consumers and investors, about the company's upstream operations and about the products it sells to consumers. Sodhi and Tang (2019) also make a case for the need to broaden this definition to include the focus of this definition to include the downstream operations in order to study the phenomena of supply chain transparency comprehensively. In the context of our study, we are interested in the disclosure of the sustainable impact of returns to consumers, which aligns with the literature on environmental sustainability disclosure (Duan & Aloysius, 2019; Mollenkopf et al., 2022). We are also interested in examining the role of supply chain transparency of different sustainability dimensions, in terms of the triple bottom line (environmental, social, economic), in the consumer decision-making process (Lee Park et al., 2023) in the specific context of returns. Hence, we build on the definition of Sodhi and Tang (2019) and we adapt it to address the specifics of our research questions. For the purpose of this study, we operationalize supply chain transparency as information disclosure about sustainable return management practices in terms of triple bottom line sustainability dimensions - environmental, social, and economic.

Methodology. The context of our research is the electronics industry. We choose this focus because the continuous increase in global electronic waste (e-waste) is one of the most alarming issues of today, as the disposal of electronic components threatens both human health and the environment (Shittu et al., 2021). According to Koshta et al. (2022), "no prior research has examined the influence of various psychological factors on end user's willingness to pay for e-waste recycling". Our study helps address this contextual gap by exploring consumers' e-waste return behavior through evaluation of their decision-making related to the return process (Ni et al., 2023).

As a first step in the research development, we start with a qualitative analysis, conducting a focus group as an effective means of exploratory data collection (Belzile and Öberg, 2012). The focus group aims to inform the research

and to ground it in practical relevance, through the formulation of general research questions based on the main goal of the research. The chosen sample of consumer participants allows us to investigate the main factors that affect consumers' choices and behavior related to returns. The focus group enables us to observe within-group interactions, which helps gain perspective on multiple facets of consumer decision-making and behavior formulation as compared to one-on-one interviews (Krueger 2014). The focus group delves into the understanding of consumers' behavior regarding returns with a specificity on electronic products. The study homes in on consumers' knowledge and awareness of the impact of returns, then focuses on the main factors affecting consumers' decision-making about returns.

Once the first analysis is conducted to inform the study, we will conduct a series of complementary experiments (Louviere et al., 2000): a scenario-based and a stated-choice study. The scenario-based behavioral experiment tests for the effect of transparency of the returns' impact on consumers' decision-making about returns. This method is chosen to isolate effects that are difficult to observe in noisy field environments (Rungtusanatham et al., 2011). The independent and manipulated variable is the transparency of returns' impact, which is operationalized as disclosure of the negative environmental impacts of returns to which consumers are sensitive. The independent variables are consumers' willingness to pay for returns and the discount accepted to opt out of returns. The mediator variable comes from the self-efficacy theory, while the moderating variable is the psychological distance, which is also manipulated.

The final step of our investigation is conducted through a stated-choice study where consumers are asked to choose their preferred option from a set of returns alternatives, each described by specific levels of sustainability attributes (Green & Srinivasan, 1990; Orme, 2020), in line with the triple bottom line perspective. In this experiment, the respondents will face multiple hypothetical sustainable return choices, where profiles of the alternatives systematically vary. Based on the chosen return option, we derive preferences towards alternatives and attributes, as well as determine consumers' willingness to pay and a level of discount to opt out of returns to help meet the retailer's sustainable goals.

Expected results. We expect to find a significant causal relationship between retailer information disclosure related to the impact of returns (i.e., transparency) and consumers' decision-making about returns. More in detail, we expect to find a positive relationship between transparency and consumers' willingness to pay for sustainable returns, and a negative relationship between transparency and accepted price discounts to opt out from returns to help retailers meet sustainable goals. Moreover, we expect the main causal relationship to be fully mediated by consumers' perceived self-efficacy and moderated by the psychological distance; increasing self-efficacy will positively mediate the relationship while increasing psychological distance will reduce the causal effects. These mechanisms will allow us to explain the social and psychological factors that drive consumer choices.

Research limitations. One of the limitations of this study pertains to the scenario-based experiment, specifically in the reliance on measuring consumers' intentions as opposed to their actual behavior. However, we mitigate the limitation by incorporating a complementary and supplementary experimental approach, namely the stated choice experiment. This approach enables the capture of intricate trade-offs, requiring consumers to make decisions within realistic constraints (Green & Srinivasan, 1990). The potential for future research emerges from this study, presenting opportunities for further exploration, such as conducting field experiments involving real retailers. Additionally, our study is product context-specific in terms of its focus on electronic products. While this focus limits the generalizability of our results, it encompasses multiple attributes of the general consumer product market. Future studies should examine the relationship in question within different product markets.

Managerial implications. From a managerial perspective, this research provides retailers with insights on aligning sustainable business goals with optimal consumer experience in the context of returns. Specifically, it can help find an equilibrium between cost-management goals and enhanced customer service levels. If transparency about returns positively affects consumers' willingness to pay for sustainable returns and/or accept a discount to opt-out from returns, the retailers should engage in a two-way communication with the consumers when managing returns. This would allow retailers to achieve their priorities of efficient management of returns and consumer experience by also tackling the triple bottom line sustainability challenges.

Originality of the paper. The originality of our research resides in its theoretical implications. In fact, our research contributes to the literature in three primary ways. First, we extend the literature on the active role of consumers in returns management. We do so through the inclusion of theoretical lenses of self-efficacy and psychological distance derived from the field of social psychology. Second, we contribute to the literature on returns by evaluating consumer response to the impact disclosure in terms of the triple bottom line perspective. In doing so we place a piece in the puzzle of literatures related to the returns management, supply chain transparency, consumer behavior and sustainability impact in term of triple bottom line. Third, from a methodological perspective, our research design demonstrates an effective approach to combining an exploratory and informative qualitative analysis and complementary experimental designs to support a unified causal inference and to provide a more integrated and complete view of the novel B2C2B perspective.

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Modern slavery in mining supply chains: the role of social enterprises and the institutional context

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Abstract

Our research focuses on evaluating the impact of institutional pressures and agency effects on modern slavery in mining supply chains in Africa. We studied the policies, challenges, practices, and supply chain's actors involved in understanding how interventions can mitigate modern slavery and promote sustainable development. In particular, we explored the role of social enterprises in modern slavery, such as those empowering women in the mining sector to address gender inequality and promote economic empowerment. By adopting a case study approach and through a combination of literature review, desk research, and interviews, we aim to provide insights that can contribute to institutional and agency theories' development and support effective strategies to combat modern slavery in mining supply chains, to achieve the Sustainable Development Goals in Africa.

Keywords: modern slavery, supply chain, institutional theory, agency theory, esg, mining, Africa

Framing of the research. Africa continues to face numerous Environmental, Social and Governance (ESG) challenges, such as poverty, hunger, lack of access to good health care, lack of development, gender inequality, lack of clean water, and environmental issues (Juju et al., 2020). These challenges not only hinder the overall progress and development of the continent but also affect the quality of life of its inhabitants (Zaman et al, 2023). This objective can be achieved under the United Nations Agenda 2030 Sustainable Development Goals (SDGs), which aim to address social challenges without forgetting the environmental ones (Omisore, 2018).

Modern slavery, particularly in the supply chain, represents one of the challenges faced by Africa. The International Labour Organization (ILO) defines modern slavery as a broad category that encompasses various forms of forced labour, including indentured labour, debt bondage, forced labour, servitude, and human trafficking. The exploitation of labour, especially in industries like mining, agriculture, and manufacturing, perpetuates poverty, inequality, lack of development (Gold et al., 2015), and environmental degradation (Sparks et al., 2021). The supply chain's unethical practices violate human rights and undermine efforts to achieve the SDGs. Hence, it is crucial for businesses and organisations to address modern slavery in their operations to contribute to sustainable development and social justice in Africa (Moussa et al., 2022).

The characteristic of modern slavery that distinguishes it from the ancient concept of slavery is its foundation on the exercise of specific powers over human beings rather than on direct property, which is currently illegal almost everywhere (Crane, 2013). As such, there are various antecedents that create the conditions for power to be exerted over workers, especially in global supply chains (Hilend et al., 2023). Among socioeconomic factors, poverty and lack of social mobility play a critical role, creating a fertile environment for any kind of labour exploitation (Crane, 2013; Hilend et al., 2023). Moreover, when the population does not have the economic and educational resources to invest in their way of life, it raises the risk of the so-called "poverty trap", where extreme poverty levels persist because of this lack of awareness (Penh, 2009). Among the regulatory factors, political instability and weak governance favour firms' likelihood of adopting modern slavery behaviours (Crane, 2013; Hilend et al., 2023).

Supply chain management (SCM) literature has demonstrated the positive relationship between the adoption of ESG practices and the supply chain performance, at least in the long term (Zhu & Sarkis, 2004; Zhu and Sarkis, 2006; Lee et al., 2012; Le et al., 2022; Truant et al., 2024). However, the work of New (2015) highlighted that modern slavery differs

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from other ESG issues and necessitates specific attention, as the standard anti-modern slavery ESG initiatives can be seen as part of the enabling mechanism that allows this issue to persist: indeed, although policy statements and sustainability disclosure of firms might appear to be fighting against the problem, “the brutal exercise of commercial power, hard negotiation on prices and trading terms generates the conditions in which forced labour emerges” (p.703). However, research on modern slavery within business and management discipline remains highly underdeveloped. Under the framework of SCM, there is inadequate attention to the effects of core SCM practices in giving rise to modern slavery (Caruana et al., 2021). Flynn and Walker (2020, p. 296) acknowledge the suitability of using the institutional theory view to study modern slavery as the institutional context “is imposed on firms from the outside by legislation, non-government organisation (NGO) campaigning, professional standards, stakeholder initiatives, media coverage, and consumer activism.” In the same vein, Moussa et al. (2022) provide evidence supporting institutional theory's role in the study of modern slavery. Their research revealed that nations with robust institutions, increased democratic practices, better regulatory standards, greater press freedom, and improved corruption control demonstrate higher accountability and responsiveness to modern slavery threats. Moreover, the occurrence of modern slavery practices in supply chains may be limited or inhibited by the monitoring, governing, and enforcing of regulations related to illegal natural resource extraction (Hilend et al., 2023). However, the most influential contribution to modern slavery in the management literature was provided by Crane (2013), who conceptualised modern slavery as an institutional deflection. As a matter of fact, he offers a comprehensive and perceptive model demonstrating how the ongoing presence of modern slavery poses a theoretical challenge for institutional theory. He elucidates how illegitimate practices can endure over time within the gaps of prevailing regulative, normative, and cultural-cognitive systems. Essentially, his model seeks to elucidate the viability of modern slavery despite its contradiction to the primary institutional dynamics in contemporary societies.

In this context, two theoretical frameworks offer insights into introducing ESG criteria in supply chains to contrast modern slavery. On the one hand, institutional theory's view suggests that such practices should diminish over time due to the impact of prevailing regulative, normative, and mimetic pressures fostering isomorphism (Scott, 2001). Institutional theory in SCM has been widely studied as it may explain how external drivers promote sustainable SCM practices (Sarkis et al., 2011). Normative pressures from consumers have driven the adoption of sustainable SCM practices for downstream firms (Ball & Craig, 2010), inducing buyers to exert normative pressure over upper-tier suppliers to enforce the sustainability of the overall chain. Nonetheless, the continued presence of isolated instances of slavery indicates that within specific contexts, structural inertia resists broader societal changes and environmental shifts (Hannan & Freeman, 1984), revealing that the institutional pressures that delegitimise slavery are somehow diverted by both external and internal contingencies (Crane, 2013). In this regard, agency theory offers indeed valuable insights into supply chain management (Fayezi et al., 2012), shedding light on the relationships between upper and lower-tier supplying firms, as well as between the focal buyer and upper and lower-tier supplying firms (Aßlander et al., 2016; Wilhelm et al., 2016). By acknowledging the inherent information asymmetry and potential for opportunistic behaviour within these complex networks, agency theory helps design governance mechanisms that incentivise efficient and trustworthy behaviour from agents towards the principal. This ultimately contributes to smoother information flow, reduced transaction costs, and improved overall supply chain performance (Panda and Leepsa, 2017). Indeed, as modern slavery instances typically occur in the upstream, geographically isolated and most labour-intensive stages of the supply chains (Crane, 2013), principal-agent relations are crucial to fight modern slavery since the principal's social responsibility might lead to the resolution of conflicts of interests and the introduction of contractual incentives and information transparency, which have a proven positive influence on the effective adoption of ESG practices of upper-tier suppliers (Wilhelm et al., 2016).

Purpose of the paper. Our research focuses on evaluating the impact of institutional pressures and agency effects on modern slavery in the mining sector in Africa. By adopting a multiple case study approach, we studied the policies, practices, and actors involved in the sector to understand how interventions can mitigate modern slavery and promote sustainable development. Particularly, we explore the role of a social enterprise (Doherty et al., 2014), which empowers women in the mining sector to address gender inequality and promote economic empowerment. We conceptualize this organization as a hybrid organization (Pache & Santos, 2012), as “by spanning the boundaries of the private, public and non-profit sectors, they bridge institutional fields [...] and face conflicting institutional logics” (Doherty et al. 2014, p.418). As a matter of fact, this organization occupies a particular position into the mining supply chain, being a connector between mining communities/workers and mining companies. This supply chain positioning leads the organization to span different institutional domains and face potentially conflicting pressures. Thus, we investigate if this actor is legitimated by both sides and if it acts as a principal or an agent in the promotion of ESG practices in the mining supply chain, with a particular reference to anti-modern slavery practices. Finally, we try to uncover, from an institutional point of view, if the presence of a hybrid organization in the mining supply chain facilitates the elimination of modern slavery practices, limiting the institutional deflection phenomenon envisioned by Crane (2013). Through a combination of literature review, desk research, and interviews, we seek to provide insights that can contribute to institutional and agency theory and that can support effective strategies to combat modern slavery and achieve the SDGs in Africa.

Methodology. The research employs a case study approach (Yin, 2014), mainly based on several interviews conducted with representatives of the focal social enterprise, working and living in different African countries. The interviews' evidence was complemented by collecting secondary information and integrating it with other interviews from other sources, i.e. mining industry experts who have directly worked in the sampled African countries.

We first conducted two desk research activities, one related to exploring the normative frameworks of the sampled African countries and the other related to the review of ESG challenges in the mining sector. The first desk research was mainly on grey literature, composed of governmental reports and laws, consulting firms' reports, outlooks, sustainability

reports and mining company websites. This search informs the study of the institutional context of the different case studies considered as part of our sample. The second desk research was structured as a literature review of contributions from scientific peer-reviewed journals. We included papers dealing with ESG issues and the mining context published until 31st dec 2023. We used keywords such as environmental, social and governance or corporate social responsibility and mining or extractive and challenge or issue. The outcomes of the review led us to map the relevant sustainability challenges under the mining context's three ESG pillars (Environmental, Social and Governance). The ESG dimensions inform the design of the protocol for the interviews conducted with the organization representatives and with the other experts.

After two desk research, we formulated an interview protocol for in-depth semi-structured interviews based on previous results. We then selected 15 experts in the African mining sector to validate the regulatory framework contexts and the ESG challenges detected. We selected the informants based on a shared database of partners and stakeholders of AfricaMaVal, a Horizon Europe project on Sustainable Mining. We then added a snow-balling technique to identify further informants, based on the first sample. The validation step allowed us to identify which were the crucial challenges on the ground, and the country specific ones. Moreover, we identified with a more precise degree causes and effects of the challenges. We went much further in respect to the indirect observation through desk research and this was essential to structure the interview protocol for the following phase.

Considering our focus, the fourth and last phase consisted in interviewing the social enterprise's components in the different sampled countries. The social enterprise selected has been currently pseudonymized because, due to their job, they have been several times subjected to threats and verbal attacks. The interviews protocol was based on the results of the previous three phases, with the specific goal to understand how they perceive and react to different institutional pressures and their role in pursuing the ESG challenges faced by the mining communities/workers, with a particular focus on modern slavery. The interviews are still ongoing, and they are supposed to end in May 2024. In addition, by interviewing the social enterprise's members, we also limited the social desirability bias (Bergen and Labonté, 2020). In fact, some practices of modern slavery can be at the border of illegality and, in any case, damage the company's reputation. Therefore, interview mining companies may face this risk. At the same time and for the same reasons, including possible threats, we decided to exclude miners because of their possible problems in administrating such practices and, also, considering the possible consequences on their jobs.

Table 1 presents the different steps of data collection.

Table 1: data collection phases

DC phase	Phase 1	Phase 2	Phase 3	Phase 4
Method	Grey literature desk research	Literature review	Interviews with mining experts	Interviews
Objective	Explore the normative frameworks of the African countries under study	Map relevant ESG challenges in the mining sector	Validate the regulatory framework contexts and the ESG challenges detected	Explore the role of a social enterprise in contrasting modern slavery practices in mining supply chains
Data collected	Governmental reports and laws, consulting firms' reports, outlooks, sustainability reports and mining company websites	78 scientific papers	15 interviews	On-going

Results. As this research represents an on-going project, complete results still cannot be provided. Nevertheless, we expose some preliminary results. Phase 1 has targeted Democratic Republic of Congo, Gabon, Madagascar, Morocco, Mozambique, Namibia, Senegal, South Africa, Tanzania, and Zimbabwe. At the end of this phase, we obtained a clear pictures of mining policies in those countries. We primarily identified the social, economic, technological and environmental context of each country. Then, we review mining and mineral policies, taking care about gender issues, land-use and mineral rights, taxation and royalties, environmental and water issues, societal and community aspects, including artisanal and small-scale mining, tangible and intangible cultural heritage, and health and safety in mines. Phase 2 led to detect 270 ESG challenges, of which 85 were attributed to the environmental pillar, 117 to the social pillar and 68 to the governance one. The environmental pillar covers 8 dimensions (Air, Biodiversity, Energy, Land, Materials, Noise, Waste, Water). The social pillar has 3 dimensions (Indigenous People, Local Community, Workforce). The governance pillar has instead 5 dimensions (Business Ethics, Corporate Structure, Policies, Stakeholders, Supply Chain). All of the dimensions cover various sub-dimensions which are omitted here.

Combined results of phases 2 and 3 show that there is a great focus on challenges which happen at the local level, on all the three pillars. Environmental, social and governance issues detected jointly indicate that without poverty alleviation sustainability cannot be reached in the mining context: poverty is the cause of poor working conditions (i.e., both social and environmental) which, at the same time, foster a perpetuation of poverty, installing a vicious cycle. Our results show that poverty affects both social, environmental and governance dimensions. As a matter of fact, from the environmental point of view, poor working conditions lead to the use of cheap processing substances, i.e. mercury and cyanide, which are highly polluting for water and soil. From the social perspective, poverty sustains the existence of scarce employment

conditions among the mining workers: this ranges from artisanal miners which daily works without tools and protections, being exposed anytime to toxic substances, to the phenomenon of school dropout with kids following their parents in the working activities, perpetrating the same conditions generations over generations. Finally, regarding the governance pillar, poverty affects public policies implementation. The most serious and widespread issue is corruption which happens at all stages of the mining supply chain and normally regulates institutional relationships. Corruption leads to a difficult enforcement of policies, even where advanced legislative frameworks are present, as in the case of mostly all African countries. Our interviewed experts detected corruption is mainly led by poverty, as government officers see it as a normal and due compensation to compensate very poor salaries. Public policies implementation is also related to lack of public resources, again caused by poverty.

These results sustain our inquiry of modern slavery driven by poverty in the mining sector, its link with institutional factors, and the analysis of the role that the social enterprise under study may play in promoting anti-modern slavery practices. Further results will be available once the fourth phase, the round of interviews with the social enterprise, will be carried out and the impact of institutional pressures and agency effects on modern slavery in the mining sector in Africa will be clear.

Research limitations. Our research presents some limitations. First, our desk research has highlighted the poor available scientific outputs on the mining sector in the African context. This led us to the need of interviewing experts, which although carefully selected, expressed their opinions based on their personal experience, which could be biased in several ways. Moreover, in the fourth phase, the presence of safety threats impeded us to reach mining workers.

Managerial implications. Our paper presents interesting managerial implications both for interested scholars and practitioners. Addressing modern slavery in the supply chain is crucial for businesses and organizations to uphold human rights, promote social justice, and contribute to sustainable development on the continent.

Originality of the paper. The study of modern slavery inside the management literature lacks empirical contribution, thus we believe that our paper is an important step towards the development of modern slavery stances in the supply chain management literature. Moreover, to the best of our results, previous scholars have not yet delved in modern slavery with a combined institutional and agency theories' perspective, using the context of the mining sector in Africa.

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Triadic literature in sustainable supply chain management: paving the way

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Abstract

The current global scenario is characterized by complex challenges, including urgent environmental and social issues. Addressing these “grand challenges” requires the adoption of a broad perspective: supply chains are formed by multiple entities that, operating across diverse economic, social, and environmental systems, form an intricate network with wide impacts. Thus, in order to investigate the potential of their interactions on tackling such issues determines the need for a multi-tier approach, leveraging the interconnectedness of actors within the supply chain. Driven by mounting environmental concerns and stakeholders’ pressures, sustainable supply chain management (SSCM) has received great attention. However, while previous SSCM research predominantly focuses on a single organization or, at most, on its dyadic relationships with first-tier suppliers, it is increasingly evident that sustainability efforts must extend further in the supply chain to yield significant impacts. The triadic approach, which allows to grasp a multi-tier perspective and to achieve insights on supply chain or even network phenomena, can provide an extended and nuanced understanding of SSCM, acknowledging its inherent complexity and multi-tier nature. Despite its potential, triadic and multi-tier research in SSCM remains scarce, suggesting a need for further adoption and exploration. This study conducts a systematic literature review of triadic research to inform of the state-of-the-art, encouraging further studies that can grasp the complexity of supply chain interactions and dependencies on performance - and specifically on sustainable performance.

Key words: Sustainable supply chain management; triadic relationships; systematic literature review

Framing of the research. As a global society, we are facing urgent issues that need to be tackled, such as geopolitical, economic uncertainty and increasing environmental and social concerns (George et al., 2016; Rosca et al., 2022). These issues, also defined as “grand challenges” can be addressed through multi-level action (Rosca et al., 2022), by leveraging the global dispersion and embeddedness of multiple actors in the supply chain. These actors operate in different economic, social and environmental systems, still they are tied together forming a network (Håkansson & IMP Group, 1988; Montabon et al., 2016), thus the impact of their decisions and actions spreads over. Therefore, it is pivotal to address such issues from a broader level of analysis, going beyond the internal or dyadic buyer-supplier perspective (Gammelgaard, 2023; Miemczyk et al., 2012) to adopt a supply chain or network point of view, allowing for a more comprehensive understanding of the intricate relationships and dependencies among supply chain entities.

Ever-growing environmental concerns are driving businesses to look for ways to combine operational and financial outcomes with environmental performance. Also, firms are further pressured by legislators and governments as well as by consumers’ awareness and sensitivity towards the matter (Marculetiu et al., 2023). Considering that the greatest part of the environmental impact of most companies is not under their direct control, but it derives from activities and processes that happen along their supply chain (Eggert & Hartmann, 2021; Sundarakani et al., 2010), it is required that a company’s entire supply chain is managed with a sustainable approach in order to generate a significant impact. Coherently, there has been a surge of interest in sustainable supply chain management (SSCM) (Carter et al., 2019): in this stream of literature, most current research approaches have been derived from internal or dyadic supply chain management research (Kembro et al., 2017; Sauer & Seuring, 2018), only involving first-tier suppliers (Tachizawa & Wong, 2014). However, firms are realizing that managing the sustainability of these suppliers may not be enough (Carter et al., 2019; Tachizawa & Wong, 2014). In fact, collaboration with lower-tier suppliers (Sancha et al., 2019) and engagement with other non-supply chain stakeholders (Carmagnac, 2021) are seen as critical for improving SSCM (Fritz & Ruel, 2023). As an illustration, it is noteworthy that up to 80 percent of overall climate impact of many companies consists of Scope 3 emissions, which represent indirect emissions produced along the supply chain (McKinsey&Company, 2021). Thus, focusing on sustainability beyond the four walls (Carter et al., 2019) and extending the view on SSCM

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towards multi-tier perspectives (Fritz & Ruel, 2023; Tachizawa & Wong, 2014) is necessary in order to generate the greatest overall impact. Such an extension implies the investigation of a firm's relations beyond dyadic relationships (Mena et al., 2013; Sauer & Seuring, 2018).

Previous research has established that, when aiming to grasp a multi-tier perspective and to achieve insights on supply chain or even network phenomena, an investigation needs to take into consideration at least three actors and their relations (i.e. a triad) as the unit of analysis (Choi & Wu, 2009a; Vedel et al., 2016). Indeed, triads represent the smallest (thus, tractable) unit of analysis which also allows for the investigation of relational dynamics, i.e. how a link affects another link and how a node affects another node (Tate et al., 2022). Differently, Choi & Wu (2009b) criticized the dyadic approach to researching supply chains, arguing that dyads do not capture the complexities of networks. Therefore, triads represent a useful starting point for understanding the interdependencies of sustainable supply chain management (Choi & Wu, 2009a), which involves multiple levels of analysis and is determined by the interplay of decisions and actions of various organizations and actors.

Purpose of the paper. This research aims to sensitize the logistics and supply chain management community to the extant research on triadic structures, highlighting its potential as well as its complexities, specifically in the field of SSCM. To reach this aim, a systematic literature review (SLR) has been produced (Denyer & Tranfield, 2009).

Methodology. A SLR has been conducted following established guidelines (Denyer & Tranfield, 2009; Tranfield et al., 2003) to secure methodological rigor. The process includes five practical steps. In the first step, the following research questions have been formulated:

RQ 1: Which facets of SSCM have been investigated through a triadic approach?

RQ 2: What other main themes have been investigated in triadic research?

RQ 3: What inter-organizational triadic structures are investigated in this literature?

In the second step, studies are located and selected through Scopus database and Web of Science (WoS). Consistently with previous literature reviews, "triad*" - limited in the subject area of Business, Management and Accounting - is used as a keyword in the search query to include variations and derivations (Vedel et al., 2016; Wynstra et al., 2015).

In the third step, inclusion and exclusion criteria are defined and applied to go from a sample of potentially relevant literature to the final sample. The search is limited to peer-reviewed articles, while conference proceedings and other reports were excluded to ensure quality and consistency; no year limits were imposed and all research methods were maintained in the final sample (Durach et al., 2017). The search is also restricted to nine SCM journals, whose scope is coherent with the aim of the investigation and which are recognized as encompassing the primary outlets for empirical SCM research (Carter et al., 2019). Their impact factors were also considered (Gligor et al., 2018).

The selected journals are:

1. Journal of Business Logistics;
2. Journal of Operations Management;
3. Journal of Purchasing and Supply Management;
4. Journal of Supply Chain Management;
5. International Journal of Operations and Production Management;
6. International Journal of Physical Distribution and Logistics Management;
7. Supply Chain Management: An International Journal;
8. The International Journal of Logistics Management;
9. Transportation Journal.

Moreover, as triadic relationships literature has been enriched with contributions not only from supply chain management operations management but also from marketing (Mena et al., 2013), it is reasonable to consider that relevant studies may also be published in other journals. Thus, two more journals were added to the list:

10. Journal of Business and Industrial Marketing, given its focus also on supply chain issues (Gligor et al., 2018);

11. Industrial Marketing Management, given its focus on industrial and business-to-business markets, which is relevant for the purpose of the study (Madhavaram et al., 2023; Sengupta et al., 2018).

Next, based on title, abstract and full text reading, the articles that represented studies focusing on inter-organizational triads, as conceptualized by Vedel et al. (2016) were manually selected. Thus, studies that dealt with other kinds of triadic concepts (e.g. internal triads or the resource-capabilities- performance triad) were left out. The same is true for studies that only mention a triadic context or approach in passing, but they do not contain a substantial discussion of the phenomenon (Wynstra et al., 2015)

The screening of the articles and the application of the inclusion criteria as described, yields a final sample of 94 articles (5 review articles and 89 research papers). The fourth step of the SLR method involves the analysis and synthesis of the results, to be conducted through an extraction form. The final step calls for the reporting of the results, to which a separate section of this on-going work is dedicated.

Results.

Triads in sustainable supply chain management (SSCM)

Through careful analysis of the keywords and full-reading of the articles, sustainability and SSCM emerge as an under-researched theme within the literature adopting a triadic approach, with only three articles in the retrieved corpus

(Cole & Aitken, 2020; Halldórsson et al., 2019; Sanchez-Rodrigues et al., 2010). This seems surprising because there is increasing awareness on the fact that the majority of the environmental and social impact is not under the direct control of a focal firm (Bové and Swartz, 2016; Carter et al., 2019), instead it lies within the supply chain. Thus, a triadic approach - which allows to grasp a broader and multifaceted perspective on such a complex issue - could benefit from further academic interest (Fritz & Ruel, 2023; Tachizawa & Wong, 2014). Moreover, such an approach would allow answering to researchers' recommendations to extend views on SSCM (Fritz & Ruel, 2023; Gammelgaard, 2023; Nilsson, 2019).

Main themes

Careful analysis of the articles in the corpus and synthesis of their findings (Mishra et al., 2022), together with consideration and selection of each article's keywords describing the focus of the research, guided the formation of thematic clusters (Sengupta et al., 2018). Most of this research focuses on relational factors, with main topics including interactions and relational dynamics, the nature of relationships, the governance and control mechanisms in triadic structures. Moreover, two themes are more related to supply chain-specific issues, these include servitising and services outsourcing, together with innovation emerge as debated areas.

Inter-organizational triadic structures

A broad diversity of triadic structures, involving various actors and tiers of the supply chain is revealed in the literature. Consequently, a categorization of triads as presented in the literature and a brief discussion regarding their characteristics seems an appropriate starting point to investigate whether there are differences in the topics of investigation, contexts or methods depending on the specific triadic structure being investigated. First of all, a distinction between two-tier and multi-tier triads is evidenced (Bastl et al., 2013).

Two-tier manufacturing triads represent one of the most common triadic structures investigated in SCM research as well as one of the first ones to be conceptualized (Choi & Wu, 2009b); it is formed by one buyer and two of its first-tier, upstream suppliers.

Moving to multi-tier structures, triadic configurations were first introduced in studies investigating the outsourcing phenomena (Li & Choi, 2009), distinguishing between manufacturing or service settings. Manufacturing multi-tier triads include both upstream-facing (i.e. back-end) triads - formed by the buyer-supplier link (which takes place across two tiers) and the second-tier supplier (the supplier's supplier) - as well as downstream-facing triads (i.e. front-end, customer-facing). The latter triad includes the buyer-supplier link and the buyer's customer in the investigation. While a linear diagram represents the manufacturing setting, wherein a manufacturing buyer can control the interaction between its suppliers and its customers because the latter is not in direct contact with any of the suppliers; relational dynamics change when it comes to service settings and thus the links are represented with a triangular diagram (Li & Choi, 2009). This allows to account for the direct interaction between the supplier and the buyer's customer, which does not happen in manufacturing contexts. (Li & Choi, 2009). Service triads stand out as the structure that has received the most attention: one-third of the total number of articles retrieved presents the service triad as the focus of investigation. Finally, the logistics triad was defined as "a cooperative, three-way relationship between a buyer of goods, the supplier of those goods, and logistics service provider moving and/or sorting the goods between buyer and supplier" (Larson & Gammelgaard, 2001).

Research limitations. The scope of this on-going research is to systematically review the literature about triadic structures and their relational dynamics. Moreover, the study addresses studies that investigate supply chain management issues adopting an inter-organizational triadic approach. However, despite efforts to adopt a very comprehensive search strategy, it is possible that some relevant studies investigating phenomena from a multi-tier perspective, with three entities as unit of analysis, are missed, due to the use of other keywords to describe the focus of investigation.

Managerial implications. Coherently with previous recommendations to extend views on SSCM (Fritz & Ruel, 2023), the present SLR serves as a starting point to inform supply chain and logistics scholars of the state-of-the-art of triadic approach in the discipline, encouraging further studies that can grasp the complex interactions and dependencies, together with their effects on performance - and specifically sustainable performance, within supply chain triads.

Originality of the paper. In the current business scenario, a company's performance is tied to the relationships and interactions that it has with other actors in the supply chain (may it be suppliers, customers, logistics service providers etc.) (Autry et al., 2014; Ellinger et al., 2020). Therefore, it is pivotal to recognize and address supply chain issues by adopting a broader perspective, that takes into consideration their complexity and multi-level elements (Gammelgaard, 2023; Nilsson, 2019). In order to get insights into supply chain and network phenomena, it has been argued that studies should investigate the association of at least three actors and their relations (in other words, a triad) (Choi & Wu, 2009b; Vedel et al., 2016). Recent literature has recognized the centrality of link-by-link triadic interactions and relationships for the formation of supply chains (Bals & Tate, 2018; Karatzas et al., 2016; Ralston et al., 2023); however, such an approach remains scarce in the investigation of sustainability issues in SCM literature. This may be due to theoretical and methodological complexities (Durach et al., 2021; Nilsson, 2019) as well as due to measurement issues both among researchers and practitioners, with previous studies finding lack of sustainability measures at supply chain or network level (Fritz & Ruel, 2023; Miemczyk et al., 2012).

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Logistics services providers in humanitarian logistics. A bibliometric and systematic literature review

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Abstract

In recent years, the importance of logistics services in disaster relief operations and the capacity of logistics services providers to improve humanitarian logistics have become an increasingly interesting topic for both professionals and academics. Logistics service providers (LSPs) have recently assumed a more prominent role inside the humanitarian logistics field. Since there are very few studies on this specific topic despite its cruciality, then our work contributes to filling the research gaps, with a specific perspective on LSPs. Our first aim is to define how the scientific humanitarian logistics and supply chain management literature has been developed referring to the role of LSPs. And secondly, we aim at understanding what are the main collaborations between LSP and humanitarians inside the humanitarian logistics and supply chain management literature. This study employs a dual approach, initially conducting a bibliometric research, subsequently followed by a systematic review in order to thoroughly analyze the scientific literature on the matter and better understand the significance of the role of LSPs. The results of this research may be of particular interest to academics and practitioners in both the business and humanitarian sectors because the opportunities to involve LSPs in disaster relief operations are reflected in the best outcome for the logistics of humanitarian aid to benefit people in need.

Key words: humanitarian logistics; supply chain management; logistics service providers; disaster relief; emergency services; literature review.

Framing of the research. *The world is contending with multiple crises - such as conflict in Ukraine that has displaced over 6.3 million people; meanwhile, Afghanistan is still contending with the aftermath of a devastating earthquake felt across five provinces, impacting thousands of people; there have also been recent floods in the Dominican Republic and protracted conflicts such as in Sudan (World Economic Forum, 2024). According to the report of the Office for the Coordination of Humanitarian Affairs - OCHA (Fan et al., 2023), COVID-19, climate crisis, conflicts and catastrophes are major factors which drive up humanitarian needs in 2022, leading to the result that 274 million people need humanitarian assistance, which represents the importance of humanitarian logistics (OCHA, 2022).*

The definition of “humanitarian logistics” considers the people, resources, knowledge, and activities involved in planning, implementing, and controlling an efficient and effective flow and storage of materials (with their corresponding information and financial flows), from the points of origin to the place where they are in need when a disaster or an emergency occurs; moreover, it is crucial to efficiently and effectively coordinate inter-organizational performance, eliminate redundancy, and maximize synergy along the entire emergency supply chain relationships, from a “supply chain management” perspective (Cozzolino, 2012; Van Wassenhove, 2006; Thomas, Kopczak, 2005).

It is critical to relief operations and getting aid to where it’s needed quickly, particularly as supply chain bottlenecks and risks can easily transpire. It also comprises most of its core funding needs, with studies placing 73% of humanitarian expenditures as linked to supply chain activities (weforum.org, 2024). Amid increasing conflict and disasters, humanitarian logistics face challenges adapting to evolving humanitarian needs, requiring a careful approach to aid and logistical coordination (Christopher, Tatham, 2011). Humanitarian logistics is collaborative among stakeholders from governments, NGOs, multilateral agencies, and the private sector, especially logistics services providers - LSPs (Cozzolino, 2021; 2012). Owing to the increasing importance of logistics in humanitarian operations, LSPs have recently become more prominent (Fan et al., 2023; Kucukaltan et al., 2022; Cozzolino, 2021).

Purpose of the paper. *Since logistics and supply chain management competences are those most decisive and needed by the humanitarian sector in managing disaster relief, companies dealing with the business of logistics and supply chain management can be considered among the most useful in being able to contribute, because the company’s contributions with the greatest impact on the social sector use “core business skills” (Kanter, 1999; Van Wassenhove, 2006). Companies with their core business in logistics and supply chain management are the so-called “logistics service*

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providers” - LSPs: by virtue of their competences, they can play a crucial role in managing logistics activities and the coordination of relationships along the supply chain, as it is needed in humanitarian disaster relief operations that represent very complex logistics operations (Cozzolino, 2021; 2012).

According to this consideration, our first research question is:

RQ1 - How has the scientific humanitarian logistics and supply chain management literature been developed referring to the role of logistics providers?

In the report of OCHA (OCHA, 2022) has been declared that ‘the private sector has been a key ally during COVID-19. Greater collaboration is needed to systematically include the private sector in humanitarian coordination systems’, which shows the importance of cooperation between relief organizations and private sectors. Business-humanitarian collaboration seeks “to build on synergies between the business and humanitarian communities to advance humanitarian objectives and at the same time support CSR” (Andonova and Carbonnier 2014, p. 350). Companies often provide a mix of “cash donation, in-kind donation of goods or services, the provision of technical or managerial expertise, cause-related marketing, employee giving schemes and sponsoring, or logistical support and collaboration specific to field activities”; in such cases, the humanitarian organization that is involved generally “grants its corporate partner the possibility of using its name or logo in public communication, thus creating a public association of image or brand between the two parties” (Andonova and Carbonnier 2014, p. 350). In particular, similar statements can be found in other academic sources, i.e., Tomasini and Van Wassenhove (2009) determined that relief organizations and private sectors, in particular with LSPs, can benefit from cooperation. Also, evidence shows that suitable cooperation between relief organizations and LSPs is an efficient approach when responding to a disaster or an epidemic.

According to this consideration, our second research question is:

RQ2 - What are the main collaborations between LSP and humanitarians inside the humanitarian logistics and supply chain management literature?

Methodology. This study was conducted via a bibliometric literature review (BLR) and a systematic literature review (SLR) aimed at thoroughly investigating the themes and identifying the primary research areas associated with the domain of humanitarian supply chain and LSPs. The objective was directed towards identifying trends, potentialities, and advancements within the field (Tranfield et al., 2003; Durach et al., 2021). To address the first research questions, it was necessary to firstly select the dataset. On that perspective, the Scopus database was chosen, given its prominent relevance on an international scale for scientific publications. The contributions analyzed were selected with the aim of studying the role played by LSPs in the humanitarian logistics and supply chain management literature. The initial dataset retrieved from Scopus encompassed 177 articles, spanning from 2005 to 2023, the starting point being dictated by the year in which the first paper adhering to the search criteria was published. Subsequent refinement based on publisher type narrowed the dataset down to 151 articles, excluding all papers not published in academic journals. The final phase of selection excluded publications that were thematically distant from the core field of supply chain management and humanitarian logistics. The final dataset was formed by 105 documents, deemed congruent with the research objectives. Our dataset has been analyzed using Bibliometrix, a package available on Rstudio. It allows the study of the selected publications by employing graphic maps and tables (Aria & Cuccurullo, 2017; Cucino et al., 2021). Subsequently, we used VOSviewer, a specific software designed for the visualization of bibliometric networks and clusters, to finalize the research (Van Eck and Waltman, 2014). As a second step, a systematic literature review - that allows an evidence-informed approach to identifying, selecting and analyzing secondary data - has been conducted following recognized guidelines to assure rigor in the methodological process (Denyer & Tranfield, 2009; Tranfield et al., 2003). We have considered the literature analyzed by the bibliometric research and other references were added manually as they reported inside the text specific name/s of LSPs and their collaboration within the context of humanitarian logistics. After that we have chosen the ones that explicitly mentioned the collaboration with the Logistics Cluster or the World Food Programme as leader of the LC or the participation in the Logistics Emergency Teams initiative (LETs).

Results. The analysis aimed to explore the trajectory of research on the topic of humanitarian logistics in recent years. A comprehensive sample of 105 documents was analyzed, originating from 75 different sources, and classified as follows: 83 scientific articles, 9 book chapters, 1 book, 1 note, and 2 reviews. Table 1 delineates the primary characteristics of the analyzed documents through the accessible R interface, encompassing the sample description, document contents, author collaborations, and document classifications.

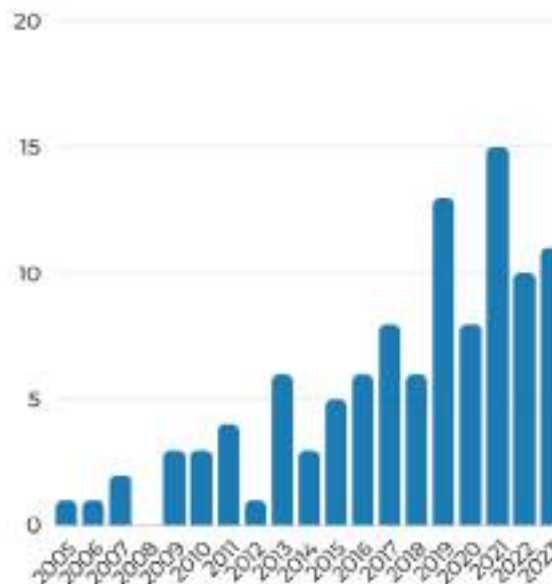
Table 1: Main characteristics of the dataset

Description		Authors of single-authored documents	10
Documents	105	Authors of multi-authored documents	285
Sources (Journals, Books, etc)	73	Authors' collaboration	
Period	2005-2023	Single-authored documents	11
References	5582	Documents per Author	0.356
Average years from publication	5.34	Authors per Document	2.81
Average citations per documents	21.23	Co-Authors per Documents	3.18
Average citations per year per doc	32.869	Collaboration Index	3.03
Document contents		Document types	
Keywords Plus (ID)	520	Article	83
Author's Keywords (DE)	390	Book Chapter	9
AUTHORS		Note	1
Authors	295	Review	1
Author Appearances	334	Book	1

Source: our elaboration

The relevance of the themes under investigation is evident, the number of publications on humanitarian logistics and supply chain management, specifically concerning LSPs, increased in the last two decades. The following Figure 1 shows the annual scientific production. The topics under review have witnessed increasing relevance within the scientific literature and reached their peak in terms of the number of publications in the year 2021.

Figure 1: Annual Scientific Production

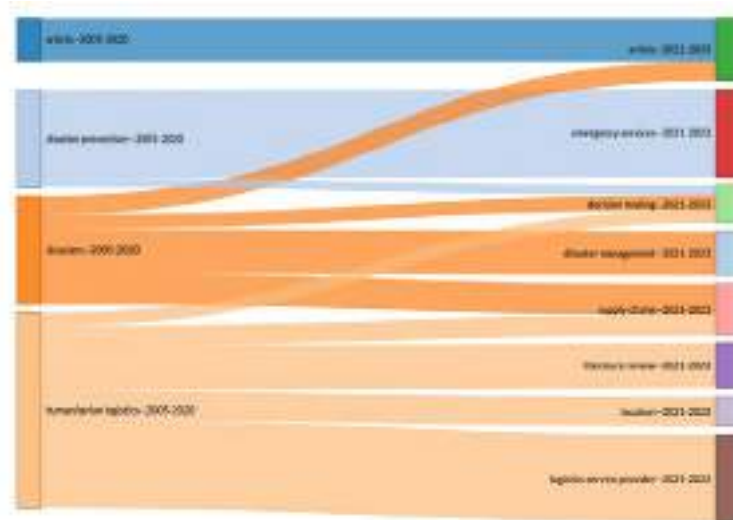


Source: our elaboration

To deeply understand the dimensions explored by articles related to the theme of humanitarian logistics, supply chain management, and the specific role of LSPs, a thematic evolution analysis was conducted. Analyzing the thematic evolution of specific themes and understanding how they changed and evolved over time in the scientific literature is useful to better understand the main dimensions on which scholars have focused most.

The idea behind the representation in Figure 2 is to see how certain thematic areas evolve and change over time. It entails a bifurcation into two phases, offering a depiction of the scenario before and after a specific “cutting” moment. It shows on the left the main thematic areas that have had an important impact on the scientific literature from 2005 to 2020; on the right, it presents the themes pertinent to the years 2021 to 2023. Topics that appear only in the initial time slices and do not continue represent areas that have decreased in focus, possibly due to the resolution of earlier concerns or the shift of the academic community’s interest to more pressing issues. This graph can help researchers identify trends over time, emerging themes, and potential areas for future research. The selected cutoff year was 2021, the year following the pandemic and COVID-19 restrictions, precisely because it represents the year of greatest change and adaptation to the new post-pandemic situation. Furthermore, according to Mami Mizutori, Special Representative of the UN Secretary-General for Disaster Risk Reduction, 2020 was also the year “that set new records for the number of people requiring humanitarian aid and support” (UNDRR - Annual Report, 2020). Since 2021, the keyword “logistic service provider” has begun to emerge as a primary keyword within research related to humanitarian logistics, due to the increasingly central role these operators play in the supply chain management field.

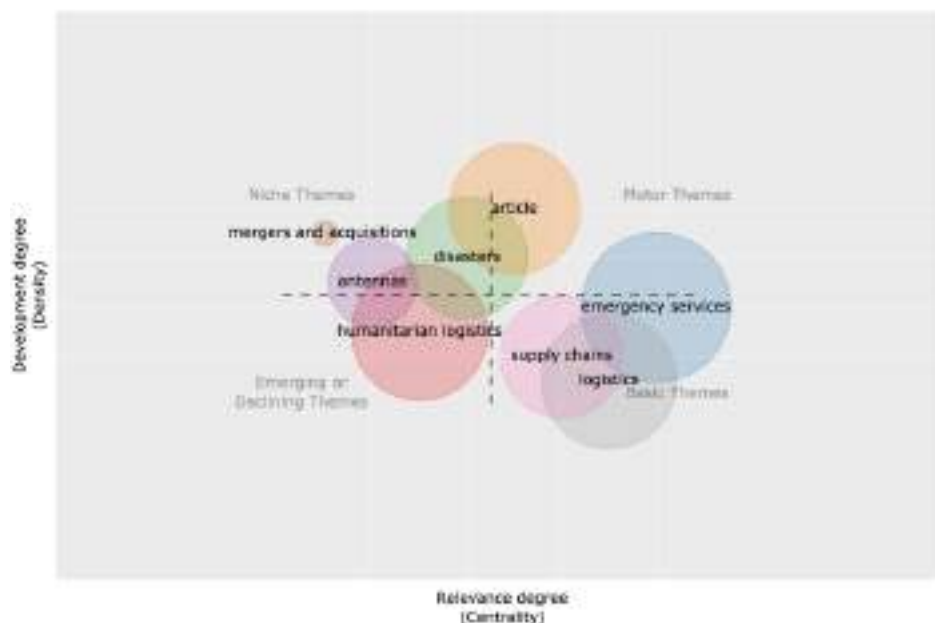
Figure 2: Thematic evolution of the keywords



Source: our elaboration

After studying the thematic evolution of research in recent years, it was essential to proceed with the analysis of the main themes and dimensions being investigated by scholars. The study of the most frequently used keywords is essential for grasping the dimensions explored by the current academic literature. The thematic analysis (Figure 3) provides an additional point for reflection, offering insights into how scholars have approached specific topics over time.

Figure 3: Thematic analysis of the keywords



Source: our elaboration

In Figure 3, the most used keywords in the articles are plotted on a Cartesian plane, represented based on their level of development and relevance. It becomes apparent, particularly in the aftermath of recent natural disasters (e.g., Fukushima, 2011), and after the 2011 annual meeting of the UN Global Logistics Cluster (Stadtler and Van Wassenhove, 2012), that the role of LSPs in Humanitarian Logistics has become increasingly central to operations of emergencies' prevention and management.

The keyword "antennas" emerges as particularly interesting due to its dual application and the emerging/niche position it is covering on the map. The first application has a focus on the research strands concerning the delivery of medical supplies through aerial support in humanitarian emergencies (Ghelichi et al., 2021). The second application focuses specifically on the RFID technology, which enables companies to monitor their supply chain workflow, yielding more actionable data regarding manufacturing equipment, inventory, asset management, and company processes, thereby enhancing the effectiveness and performance of supply chain management (Zare Mehrjerdi, 2010).

Subsequently, in order to answer precisely to RQ2 a systematic literature review was conducted. Table 2 shows the collaborations of LSPs with WFP/LC that are reported and described in the articles reviewed.

Table 2 - LSPs' collaborations with WFP/LC from the academic literature. Source:
Our update from Cozzolino et al., 2017.

Reference	Agility	Moller -Maersk	TNT	DP WORLD	UPS
Tomasini and Van Wassenhove (2004)			✓		
Samii and Van Wassenhove (2004)			✓		
Van Wassenhove (2006)			✓		
Thomas and Fritz (2006)			✓		
Spring (2006)			✓		
Binder and Witte (2007)			✓		
Tomasini and Van Wassenhove (2009a)			✓		
Tomasini and Van Wassenhove (2009b)			✓		
Maon et al. (2009)			✓		
Quinn (2010)			✓		
Stadtler and Van Wassenhove (2012)	✓	✓	✓		✓
Oglesby and Burke (2012)	✓	✓	✓		✓
Cozzolino et al. (2012)	✓	✓	✓		✓
Vega e Roussat (2015)	✓	✓	✓		✓
Abidi et al. (2015)	✓	✓	✓		✓
Bealt et al. (2016)			✓		
Nurmala et al. (2017)			✓		
Cozzolino et al. (2017)	✓	✓	✓		✓
Nurmala et al. (2018)			✓		
Cozzolino et al (2018)	✓	✓			✓
Sigala e Walkolbinger (2019)			✓		
Medel et al. (2020)			✓		

Reference	Agility	Moller -Maersk	TNT	DP WORLD	UPS
Cozzolino (2021)					
Pascucci (2021)					

Source: our elaboration

Long-term partnerships have been identified, particularly the “Moving the World” initiative of TNT, a third-party logistics company and World Food Programme (WFP) (Tomasini and Van Wassenhove, 2009). In particular, the LSPs belonged to Logistics Emergency Teams (LETs) (with different compositions along the time, and now composed by Agility, A.P. Moller Maersk, DP World and UPS) and collaborating with the United Nations Logistics Cluster/World Food Programme (WFP) represent an example of best practices and a unique partnership between profit and non-profit sectors in CSR (Stadtler and Van Wassenhove, 2012; Cozzolino et al., 2017; Cozzolino, 2012; 2021). This is the first (historically) and still the only international experience of multi-company integrative partnership that has focused on logistics services and been composed of companies in the logistics sector with humanitarian organizations that work in emergency responsiveness: LETs in collaboration with the WFP, as a Global Logistics Cluster for the entire system of the United Nations and other organizations that belong to the international humanitarian community (www.logcluster.org). We have chosen to focus on collaboration with WFP because after the reform of the 2005 - the Humanitarian Response Review (HRR), established in August 2005 that created the Cluster Approach - the WFP became the leader of the Logistics Cluster for the United Nations and most of the humanitarian organizations.

Research limitations. This paper is not free from limitations. The main limitation is that the paper is still a work-in-progress; this implies that the findings and interpretations presented are preliminary and subject to refinement with further research we are working on. Other limitations are also insights that merit acknowledgment and consideration for future research directions. Firstly, the reliance on the Scopus database, while beneficial for its comprehensive coverage and international relevance, may inadvertently exclude relevant studies published in journals or databases not indexed in it. Secondly, the methodological focus on bibliometric and systematic literature review, while rigorous, inherently limits the scope of inquiry to published academic articles, excluding gray literature, internal reports from humanitarian organizations, and firsthand accounts from logistics service providers. Thirdly, as the field of humanitarian logistics and the role of logistic service providers continue to evolve, ongoing analysis and updates to the literature review will be crucial for maintaining relevance and accuracy. Future studies could aim to incorporate broader data sources, include more recent developments, and explore underrepresented themes to build upon the foundational insights provided in this analysis. Lastly, this study needs to be deepened, in its empirical investigation, with an on-field analysis, which requires a further detailed examination that extends the understanding of collaborations opportunities and criticalities between humanitarian organizations and logistics services providers. This could be achieved by questionnaires for and semi-structured interviews with the professionals engaged in the disaster relief operations.

Managerial implications. For practitioners, both in the commercial and in the humanitarian sector, this paper provides manifold managerial insights. The study considers how to make it possible to concretely help people in need by reaching them through the various humanitarian relief operations where humanitarian organizations and logistics service providers collaborate. Moreover, it can be a good basis for a constructive dialogue to build new projects to achieve further goals in the humanitarian context. Furthermore, the COVID-19 pandemic has aggravated the context of the global crisis, and the need for coordination arises as an even more burning topic. As declared in the “Financial Times” (22 April 2020), the pandemic crisis has underlined the need to work together for the vital safety of single actors and entire supply chains: transforming their supply chains to “just in case” models (FT, 2020). The collaborations investigated in this research sustain the supply chains in this direction, through concrete and effective coordination, and it may be of example for other realities, in humanitarian contexts as well as in commercial ones.

Originality of the paper. Since the 2004 tsunami, companies and aid organizations have been evaluating the ways in which they could collaborate together most fruitfully in a humanitarian context. The involvement of private sector companies, especially logistics services providers, has grown considerably in relief operations inside the humanitarian action in recent years, and a “burning” imperative has emerged in academic and professional contexts: logistics in humanitarian action makes the difference between successful or failed results in the humanitarian operation, and it represents the costliest part of any disaster relief, accounting for about 70/80% of the total costs in each disaster operation. This imperative leads to the consciousness of the need for a more in depth understanding of the effective private sector-humanitarian logistics engagement meeting the challenge of preparing for/responding to disasters. Since there are very few studies on this specific topic despite its cruciality, our work contributes to filling the research gap, with a specific perspective on LSPs.

This study pioneers a comprehensive bibliometric analysis of scientific publications in the domain of humanitarian logistics and supply chain management, focusing specifically on the evolving role of LSPs. Through this approach, we have illuminated the trajectory of scholarly discourse and pinpointed pivotal themes within the field. Notably, our study reveals the increasing centrality of LSPs in facilitating effective and efficient humanitarian responses. Secondly, this

investigation extends beyond traditional narrative reviews by integrating bibliometric mapping and systematic literature review techniques. This dual approach allows to capture the multidimensional landscape of LSPs contributions to humanitarian logistics, offering a nuanced understanding of their roles, challenges, and opportunities for enhancement. Furthermore, the study breaks new ground by delving into the specific collaborations between LSPs and humanitarian organizations, a relatively underexplored area in the literature.

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Eco-packaging innovations in paper and cardboard.

Preliminary insights from cognitive mapping on international projects

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Abstract

The presence of packaging along the supply chains is pervasive, both as product itself and as product-packaging combination. Due to its pervasiveness along supply chains, packaging carries great importance in achieving sustainable goals and targets, over the entire packaging life cycle - from production, through to distribution and transport, to use and disposal. In particular, the environmentally sustainable impact of packaging has been in the last years an increasingly important issue for businesses. The European Commission places packaging among the “key product value chains” for circularity. Despite its cruciality, the academic literature presents gaps in the study of eco-packaging innovations undertaken by firms to concretely improve environmental sustainability. Then our work contributes to filling the research gaps, with a wide perspective investigating which are the environmentally sustainable practices that firms adopt in innovating packaging - in particular in paper and cardboard materials - and what are the implications of these practices on packaging logistics aspects. To accomplish the objectives of this study, a qualitative content analysis was conducted using cognitive mapping on multiple cases of eco-packaging innovations at international level.

Key words: packaging; innovation; environmental sustainability; logistics; circular supply chain; cognitive map

Framing of the research. *The presence of packaging along the supply chains is pervasive, both as product itself and as product-packaging combination (Silva and Pålsson, 2022; Cozzolino, 2021). Due to its pervasiveness along supply chains, packaging carries great importance in achieving sustainable goals and targets (Fitzpatrick et al., 2012), over the entire packaging life cycle - from production, through to distribution and transport, to use and disposal (Kozik, 2020). It is precisely the packaging “logistics” processes that make product packaging possible, flowing through the entire supply chain and defining interaction with the physical environment and the socio-economic context (Cozzolino, 2021; Vernuccio et al., 2010). Thus, the idea of “sustainable” packaging logistics has been growing in academia and professional contexts (Cozzolino, 2022; Cozzolino, 2021): many authors have emphasised the close relationship between the concepts of packaging and logistics processes - both forward and reverse - along the supply chain (García-Arca et al., 2014; Azzi et al., 2012; García-Arca and Prado-Prado, 2008; Hellström and Saghiri, 2007; Vergheze and Lewis, 2007; Saghiri, 2002; Lockamy, 1995; Twede, 1992).*

In particular, the environmentally sustainable impact of packaging has been in the last years an increasingly important issue for businesses (Vergheze and Lewis, 2007; Hellstrom and Nilsson, 2011; Nguyen et al., 2020; Cozzolino and De Giovanni, 2023). It clearly emerges that packaging influences, at least, product development and design, purchasing, production, and distribution (Min and Galle, 2001; Ahmad et al., 2018; Meherishi et al., 2019). In fact, the debate on the impact of packaging on the natural environment has more recently shifted towards a more holistic discussion of the impact of the packaging life cycle throughout the supply chain (Sarkis, 2003). According to a review by Silva and Pålsson (2022), research on packaging incorporates Circular Economy concepts: from this perspective, designing, making, using, collecting and treating packaging requires the implementation of a proper system to recover value from waste and the collaboration with other organizations and stakeholders, either within the same industrial sector or in different ones (De Giovanni and Zaccour, 2014; Weetman, 2017; De Giovanni and Zaccour, 2019; Farooque et al., 2019; Zhang et al., 2021; De Giovanni and Folgiero, 2023).

In the document “Circular economy action plan. For a cleaner and more competitive Europe” by the European Commission, packaging is placed among the “key product value chains”, “where the potential for circularity is high”, together with others: “electronics and Information and Communication Technologies”, “batteries and vehicles”, “plastics”, “textiles”, “construction and buildings”, and “food, water and nutrients”³. Accordingly, the sustainability challenges posed by packaging value chains require urgent, comprehensive, and coordinated actions, contributing to the

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³ https://ec.europa.eu/environment/pdf/circular-economy/new_circular_economy_action_plan.pdf

response to climate emergencies, and focusing on reducing (over)packaging and packaging waste, driving design for re-use and recyclability of packaging, and considering reducing the complexity of packaging materials.

Focusing on packaging materials, it is possible to see how many different types of materials can be used for packaging, such as paper, plastic, steel, aluminum, wood, and glass, and various combinations among them. In particular, the recent study by Cozzolino and De Giovanni (2023) on circularity of packaging reveals that the specific type of packaging material (especially with a focus on paper and plastic) can change firms' preferences regarding sustainable practices they want to adopt, so that going in deep with a focus on a single material may be of great interest for academia and practitioners to relay understand concrete implementations.

Purpose of the paper. The aim of this work is to understand which are the main environmentally sustainable practices in innovating paper and cardboard packaging. In particular, our attention is on those eco-packaging innovations that are concretely realized and implemented by firms. So that the paper aims at investigating firstly the following research question:

RQ1 - Which environmentally sustainable practices do firms adopt in innovating paper and cardboard packaging?

Our attention is also on the importance of the logistical implication linked to the eco-packaging innovations. So that the paper aims at investigating secondly the following research question:

RQ2 - What are the implications of these practices on packaging logistics aspects?

Among different packaging materials, paper and cardboard ones receive significant attention for many reasons, at least: as it is the most used packaging material worldwide, accounting for approximately 33 percent of packaging material consumption (Statista, 2022⁴); as, it is made by a natural, biodegradable, and bioavailable cellulose polymer, increasing popularity in the field of packaging, especially food packaging (Liu et al., 2021); as, paper and paperboard packaging is found wherever goods are produced, distributed, marketed, used (Kirwan, 2012), and even in return processes (Lai et al., 2022); as, its recyclability is achieving very high percentage in line with the European directive targets, as the EU27 recycling rate of paper and cardboard packaging waste, based on the latest data available, is 82%, and Italy, in particular, reaches 85.1%, exceeding the target set for 2030 (Ansa, 2023)⁵; and, as it can be a valid substitute of plastic packaging very often (Silva and Molina-Besch, 2023); last but not least, as it has become a global issue with the recent virgin paper shortage problems at international level (Forbes, 2022)⁶.

Moreover, to the best of our knowledge, previous studies mainly focused on single or few case studies which consider very specific aspects of packaging innovations towards sustainability (Albrecht et al., 2013; Koskela et al., 2014; Dominic et al., 2015; Saraiva et al., 2016; Geueke et al., 2018; Abejón et al., 2020; Ferrara and De Feo, 2020; Lo-Iacono-Ferreira et al., 2021; Accorsi et al., 2022; Sasaki et al., 2022; Silva & Molina-Besch, 2023), with the exception of the work by Cozzolino and De Giovanni (2023), that studies portfolios of sustainable practices for packaging in the circular economy with a wider empirical investigation from many firms perspective, as we develop in this research.

Furthermore, the aspect linked to packaging logistics is of great interest, considering not only the implications of the innovations on transport and handling activities (such as improvement of warehousing and display operations, optimization of loads on pallets and means of transport, etc.), but also the implications in terms of the "packaging system", for each level (primary, secondary, tertiary) and in terms of interactions between the different packaging levels, as defined by Twede (1992).

Methodology. To accomplish the objectives of this study, we have first of all reviewed the international academic literature that focus on sustainable practices implemented for the circularity of packaging in paper and cardboard, to better document the existing studies and properly highlight the research gaps that we aimed to fill. After that, a qualitative content analysis was conducted using cognitive mapping to elicit the main practices adopted in eco-packaging innovations in paper and cardboard. We used data available through the "National consortium for the recovery and recycling of cellulose-based packaging" (Comieco) in Italy. It is part of the Conai system (the "National consortium of packaging"), that is a private system, which operates on a non-profit basis, to which over one million companies that produce and use packaging (in steel, aluminum, paper, wood, plastic, bioplastic, and glass) adhere at Italian level.

Comieco manages the system of collection and recycling packaging of cellulose origin in Italy, bringing together paper mills, producers, transformers, importers and recyclers of paper and cardboard for packaging. It also engages in prevention activities, through the support of studies on sustainable packaging. Among the prevention initiatives, Comieco "Best Pack" database project collects the most deserving cases of eco-packaging in paper and cardboard which best represent sustainable solutions on the market, and which have obtained recognition at national and international level, thanks to interventions on the product or on the process, from design to consumption and disposal: this approach can be summed up by Comieco in the concept of "prevention" so that these cases are defined as "the champions of prevention".

We have collected each awarded case and we have built up a database considering the following information: firm's name and the one of the specific case, a short text description of the innovative initiative, including the type of circular action, the type of intervention, the type of structure; other information we have collected are about the use destination, such as for industry or for the final customer, and the product category, if for food or not. The type of "circular" action investigated are reduce, reuse and/or recycle. The "reduction" practice mapped by Comieco refers to these category options: savings on raw materials/lightning, reduction of energy consumption/greenhouse gas emissions, and reduction

⁴ <https://www.statista.com/markets/410/topic/961/pulp-paper/#statistic2>

⁵ https://www.ansa.it/ansa2030/notizie/asvis/2022/12/30/litalia-ricicla-il-72-dei-rifiuti-e-avanza-sulla-raccolta-differenziata_fcdd06dc-edec-40c1-ad54-7e0cf2976344.html

⁶ <https://www.forbes.com/advisor/personal-finance/current-shortages-usa-prescription-drugs/>

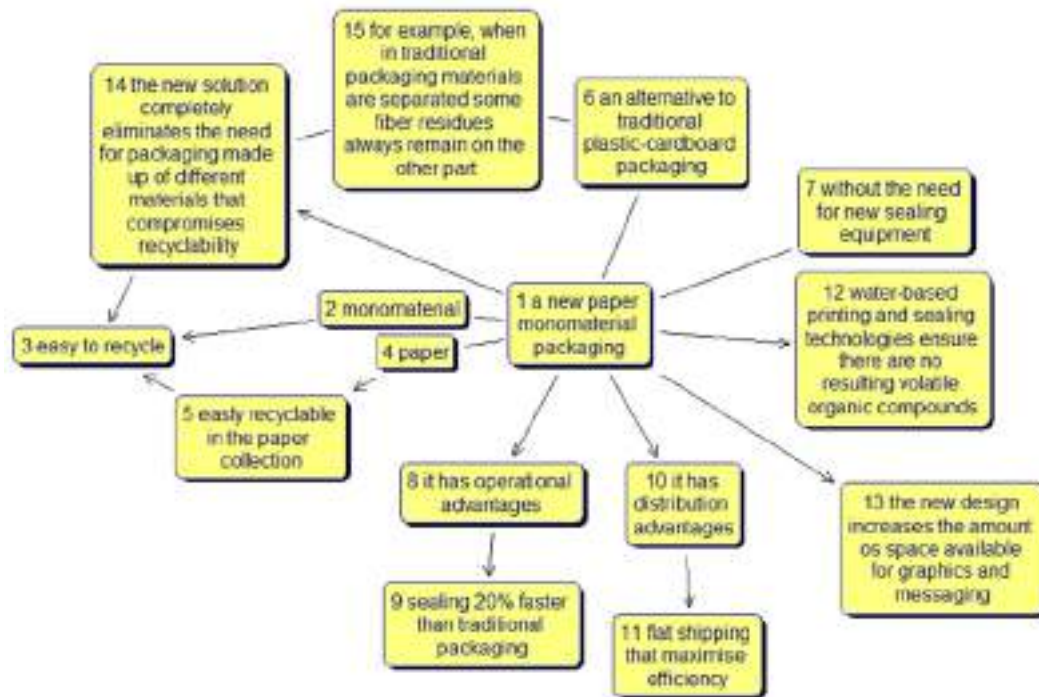
of product waste and production waste; the “reuse” practice considers the same use or also other intended use of the packaging; referring to the “recycle” practice, the options mapped are facilitation of recycling activities, use of recycled materials, and use of biodegradable materials/compostable.

Results. From the total numbers of cases of 725 innovative eco-packaging cases of cellulose origin, 284 cases present logistics optimizations effects after the innovations, and among them we started to select the 11 most recent cases, that have been analysed more in deep, using cognitive maps method. We have drawn 11 different cognitive maps, one for each case. Cognitive maps are “significant mental representation of reality” as it is perceived and described by a given subject (Weick and Browning, 1986). The design of the cognitive maps was performed with the assistance of Decision Explorer© software (Ackermann, Eden & Cropper, 1992).

Different type of intervention has been carried out on packaging to achieve the sustainable objectives and it can take place through update/redesign of a packaging, design of a new packaging or a new component, and optimization of production processes (e.g. process simplification, reduction of process waste, reduction of production time).

The analysis of the cognitive maps allows us to highlight the eco-packaging innovations implemented, if and how the interventions that have been realized on them are connected to each other (causally or not), and/or to other concepts. Also, it is possible to underline what are the most frequent innovative interventions. Moreover, the logistical implications emerge as concrete advantages from the innovation. Some innovative interventions are highlighted that have an impact not only on environmental sustainability, but also there are areas of integration among marketing, logistics, operations, and ethics in packaging innovation: in the figure, for example, concept n. 13 for marketing (“the new design increases the amount of space available for graphics and messaging”), n. 8 and 9 for operations (“it has operational advantages”, “sealing 20% faster than traditional packaging”, etc.). Some results present tradeoffs among practices, as well as the operational and logistical challenges that firms face whenever they seek to integrate environmentally sustainable practices into their operations as underlined by Pålsson and Sandberg (2020; 2022). Furthermore, some practices may require coordination with external parties, making management even more difficult. These preliminary considerations can represent food for thought for future lines of research.

Figure 1 - Cognitive map of a case of eco-packaging innovation. Source: Our elaboration with Decision Explorer© software.



Research limitations. This paper is not free from limitations. The main limitation is that the paper is still at a work-in-progress step of development; but we are already working to improve the research. Firstly, the maps have to be created and analyzed from all the cases inside the database of innovative projects, to have a complete overview of what has done by the involved companies. Secondly, it needs to be deepened, especially in its empirical investigation, with an on-field analysis, which requires a further detailed examination that extends the understanding of packaging innovations towards sustainability, considering both opportunities and criticalities in implementing them; this could be achieved by questionnaires for and semi-structured interviews with the professionals actively engaged in packaging design and utilization.

Other limitations are also insights for future research. For example, future research can replicate our study by either using a sample not belonging to Comieco, investigating a different population of firms and projects, or focusing on specific sectors. Furthermore, we rely on environmental innovations, but it worth analyzing also social innovations in

packaging. Moreover, future research could integrate the field of packaging sustainability with digital technologies. Finally, future research could incorporate the evaluation of packaging innovations on performance measurement through Life Cycle Assessment - LCA methods (starting for example at least from indicators such as reduction in CO2 emissions, energy usage and water consumption). The authors are currently studying along this direction.

Managerial implications. This research can support managers and policymakers who are interested in eco-packaging innovations in an economically viable manner, focusing on reduction in both (over)packaging and packaging waste and driving designs for packaging reuse and recyclability. Our study aims to offer a roadmap for decision-makers, managers and policymakers who are involved at various levels in their organization and are interested in understanding interventions, results and consequences of implementing sustainable practices to improve circularity of packaging, its products and their value along the supply chain. Moreover, since the packaging design phase, from the generation of the product idea to its production, is becoming more crucial - as recent research reports cited in Forbes (2022⁷) that underline how eco-packaging emerges as a key trend in the market - our research goes in the direction to a concrete understanding of opportunities and criticalities in the implementation of eco-design initiatives (Ahmad et al., 2022). Ahmad et al. (2018) report that the design phase is responsible for about 80% of the sustainability impacts of products.

Originality of the paper. This research enriches existing literature by examining practices for eco-packaging innovations that are combined together to improve environmental performances along the supply chain; and, concrete managerial implications arise, as eco-design innovations for packaging emerges as a key trend in the market. Since there are very few studies on this specific topic despite its cruciality, then our work contributes to fill the gap of the academic literature underlined by the previous work by Cozzolino and De Giovanni (2023). Also, it introduces the cognitive mapping method for the analysis of the topic. Along these original elements we expect concrete results and implications in the direction of understanding how firms transform their packaging to overcome the manifest sustainable challenges they face in these turbulent times. The real cases analyzed represent innovative “best practices” inside their sectors and provide preliminary concrete evidence that could inspire research and practice along this way. Then this study is a starting point for future steps on this topic, at both the theoretical and empirical levels.

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Strategic reshoring: redefining competitiveness in global markets

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Abstract

Global transformations, from pandemics to geopolitical concerns, are reshaping strategic management, driving a reshoring trend in the Italian fashion industry. This study explores the impact of global shocks on strategic approaches, motivations for reshoring, and implications for competitiveness and sustainability. Findings reveal a shift toward relocating production processes led by rising costs and supply chain concerns. Despite the benefits, reshoring poses complexities such as upfront costs and regulatory challenges. Integrating reshoring with business ecosystems fosters collaboration and innovation, improving resilience and competitiveness. Being focused on the fashion industry in Italy, the study recognizes the limits of generalizability and emphasizes the dynamic nature of reshoring trends. The originality of the study lies in its focus on the fashion industry and the integration of reshoring strategies with local ecosystems, offering theoretical and practical insights for strategic management.

Keywords: country of origin; fashion industry; reshoring; Italy.

Framing of the research. In recent years, the global arena has experienced unprecedented transformations, characterized by a series of upheavals ranging from pandemics to ecological crises, from geopolitical tensions to changing political dynamics (Napier et al., 2024). This rapid pace of change has been remarkable; starting with the emergence of the COVID-19 pandemic, followed by subsequent global environmental disasters and conflicts, there have been significant transitions in the geopolitical landscape (Brands and Gavin, 2020). These events have left nations and regions debilitated, disrupting the once-stable foundations of societies around the world and dissipating the sense of soundness of economies previously considered secure and robust. Consequently, countries are facing new vulnerabilities that require a reassessment of strategic approaches at both macro and micro levels (Cui et al., 2023). Evolving geopolitical landscape and the rise of new power structures on the global stage present long-term strategic considerations that require attention. In this intricate context, the capacity to anticipate and respond effectively to evolving challenges and opportunities is imperative to the resilience of organizations (Sudan et al., 2023). As a result, businesses face a myriad of pressures. On one side, they must deal with the repercussions of crises such as pandemics and environmental disasters (Salunkhe et al., 2023). On the other, they face increasing challenges to react, innovate, and gain competitive advantage in an uncertain environment (Vecchiato, 2015; Teece and Leih, 2016). In response to this transition, in which the extraordinary has become routine, businesses are urged to develop new visions, business models, and strategies different from those arising from the classic globalization model. Rather than adhering to backward methods that emphasize efficiency and scale, companies are encouraged to focus on restructuring value chains and cultivating new business ecosystems to mitigate a wider range of potential shocks and thrive in this rapidly changing environment. Indeed, the traditional model of internationalization, which relies on interlinked global supply chains and widespread outsourcing, is increasingly under examination in light of recent global disruptions (Gölgeci et al., 2023). Over the past two decades, international markets have drastically changed their conditions regarding the appeal of countries seeking internationalization. In a highly turbulent global environment, country risk extends beyond specific territorial contexts to encompass at least half of industrialized countries. Multinational corporations have engaged in reorganization efforts aimed at shortening and addressing emerging supply threats, starting with local supply chains, a phenomenon further exacerbated by well-documented pandemic events (Etamad, 2020). The COVID-19 pandemic has exposed the vulnerabilities embedded in complex and globally integrated supply chains, such as spreading outages and breakdowns in transportation networks, that have caused production to stall in many sectors (Deloitte, 2020; Rinaldi and Bottani, 2023). In a similar vein, environmental issues and geopolitical tensions revealed the risks associated with excessive dependence on distant suppliers and volatile regions (Newman and Visoka, 2023). Instead of focusing exclusively on reducing costs and optimizing efficiency, organizations should prioritize flexibility and adaptability to effectively juggle an environment characterized by insecurity and instability. This requires a fundamental shift in mindset, with companies

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recognizing the urgency to embrace change and innovation as ways to secure long-term competitive advantage (Afraz et al., 2021). At the core of this ongoing transformation is the recognition of the importance of reconfiguring value chains to align them more closely with current reality. Instead of depending on sprawling, failure-prone global supply networks, businesses are constantly exploring the benefits of shorter, highly localized supply chains, which provide stronger control and greater resilience (Thilmany et al., 2021). By relocating production close to their home countries and decreasing dependence on distant suppliers, companies can alleviate the risks associated with global disruptions while reducing their ecological impacts (Polyviou et al., 2023). The creation of extensive global value chains and the process of internationalization are realities recognized by business scholars and practitioners alike. However, a new trend that is substantially reshaping international development processes is second-degree offshoring (Barbieri et al., 2019; 2022). In parallel, there is a growing recognition of the need to nurture new entrepreneurial ecosystems able to foster innovation and expansion in an uncertain environment. This requires the creation of interconnected networks that include companies, startups, and other stakeholders that can cooperate and pool resources to pursue common objectives (Jocovski et al., 2020). By cultivating a climate of innovation and collaboration, companies can discover and exploit new sources of knowledge and creativity, fostering a spirit of adaptation and enabling them to thrive in an increasingly competitive environment.

Purpose of the paper. Over the past thirty years, companies have undergone significant transformations in how they manage production processes, facing escalating challenges in maintaining vertical integration, where a company controls its suppliers and/or customers (Harrigan, 1984; Anderson and Weitz, 1986). The topics of country of origin and production decisions gained prominence in the 1980s amidst the globalization of production. It became commonplace for companies to relocate production stages and manufacturing processes abroad, driven primarily by cost-saving motives and the search for unique production resources (Jensen and Pedersen, 2011). Nowadays, pressures on companies to execute various production processes have intensified, encompassing diverse aspects, including logistics and communication. Recent years have witnessed a notable trend towards re-localization of production or even a significant shift towards deglobalization among internationalizing companies. Based on these premises, the study aims to address the following research questions:

RQ1: What effects have recent global shocks had on the strategic management approaches of companies across different industries and geographical areas?

RQ2: What are the primary factors motivating and hindering businesses in adopting reshoring strategies?

RQ3: What are the key determinants driving companies to relocate production processes or optimize value chain relationships closer to their home country, and how do these decisions affect the overall competitiveness of the ecosystem, including supply chain resilience, operational efficiency and performance?

In order to answer the three research questions, the study begins by analyzing the reshoring processes implemented by numerous companies in different industries. Our objective is to understand and discuss the strategic and operational implications of reshoring practices to provide valuable insights for both theory and practice. Economic research posits that the process of deglobalization involves three primary economic flows: the dynamics of imports and exports of goods and services at a global or regional level, expatriates' remittance of money and inflows/outflows resulting from foreign direct and portfolio investments (Postelnicu et al., 2015). These considerations of international management aim to identify both the phenomenon of firms returning to the country of origin ("back-shoring" or "reshoring") and relocating to third countries (referred to as "nearshoring" when approaching the country of origin). Moreover, the motivations behind relocation choices can have an impact not only on the location of individual firms, but also on the whole supply chain. At the same time, internationalization should be conceived as a reversible phenomenon. Therefore, if market expectations are not satisfied, it is advisable to reconsider internationalization (embracing the phenomenon of back-shoring) or explore alternative locations (thus promoting further relocation or near-shoring). However, there are other motivations to internationalize, such as the "made-in" effect. This involves leveraging the reputation of the home country to increase brand loyalty and influence customer and market perceptions of product quality. Another driving force is technological progress, which allows firms to replace manual labor with technology and reorganize previously labor-intensive activities both domestically and in other advanced markets within the home region.

Methodology. This study focuses on Italy, which serves as an intriguing case study within the realm of strategic management, particularly due to its distinctive characteristics, notably in the realm of small and medium-sized enterprises (SMEs) (Cassia and Colombelli, 2010; Zucchella and Hagen, 2015). Within this domain, there exists a diverse spectrum of companies, ranging from those with purely domestic operations to internationally oriented firms, engaging in varying degrees of global to glocal (global-local) activities. The Italian SME landscape exhibits several unique features, such as short value chains and a strong emphasis on sustainability, which not only influence its economic dynamics but also reflect broader challenges encountered by companies in the global arena (Martins et al., 2022). SMEs hold a prominent position within Italy's economic system, making significant contributions to employment, innovation, and economic growth. This research addresses the phenomenon of reshoring in the fashion industry. The "Made in Italy" clothing industry is significant, as it embodies a combination of style and quality craftsmanship. Italy has long been associated with the ready-to-wear model, which differs from Chinese fast fashion in its selection of high-quality materials and suppliers. Several Italian regions, home to renowned "Made in Italy" companies, were examined from south to north, analyzing the key factors influencing various production processes from a reshoring perspective. Reshoring has gained prominence in recent years, driven by factors such as rising labor costs in offshore locations, concerns about supply chain resilience, and a growing emphasis on proximity to markets (Chen et al., 2022). In the context of the Italian

manufacturing sector, particularly in the fashion industry, reshoring strategies have received significant attention. For example, in the Lombardia fashion system (one of the regions studied), the average distance between suppliers in the Made in Italy sector has dropped from 155 km to 100-80 km. Examining the experiences of businesses operating in the "Made in Italy" fashion industry, using Orbis and Confidustria as a reference dataset, this study aims to clarify the complexities of reshoring initiatives and their impact on production and sales processes. Through a comprehensive analysis, the study seeks to identify the specific stages of the value chain most affected by reshoring efforts, illuminating the challenges and opportunities associated with this strategic shift. It also delves into the advantages and disadvantages of reshoring strategies, offering a nuanced understanding of their implications for competitiveness and sustainability. Besides examining reshoring strategies, this study also explores the emergence of entrepreneurial ecosystems at the local level, recognizing their importance in promoting business resilience and driving innovation. Entrepreneurial ecosystems incorporate a network of interconnected organizations, institutions and stakeholders that collaborate within a specific geographic region or industry sector, playing a crucial role in fostering entrepreneurship, facilitating knowledge exchange and stimulating economic growth. The methodology adopted in this study is designed to establish a robust framework for examining the intricate dynamics of reshoring strategies and entrepreneurial ecosystems in the context of the Italian fashion industry. It integrates quantitative analysis with qualitative insights, offering a comprehensive understanding of the phenomena under investigation (Harrison et al., 2020). The survey instrument facilitated the collection of data on the prevalence and characteristics of reshoring initiatives among Italian fashion companies, capturing essential variables such as the motivations for reshoring, the specific stages of the value chain involved, and the perceived benefits and disadvantages of this strategic approach. Through a preliminary testing phase, any potential concerns or limitations of the survey were identified, and necessary refinements were made to ensure its validity and reliability (Aithal and Aithal, 2020). After the pilot test, the research moved on to conducting interviews with decision makers (entrepreneurs and/or top managers) in the Italian fashion industry. These interviews are designed to gain qualitative insights into the drivers, barriers, and strategies related to reshoring initiatives and entrepreneurial ecosystems. By directly engaging key stakeholders, the study aims to capture perspectives and experiences that quantitative analysis alone might overlook. Data collected from questionnaires and interviews are analyzed using a mix of quantitative and qualitative methodologies. Quantitative data are subjected to statistical examination to identify patterns, trends, and correlations, while qualitative data are analyzed to reveal underlying themes and narratives.

Results. The expected outcomes of this study include a deeper understanding of the characteristics of reshoring strategies among Italian fashion firms, along with an exploration of the factors and challenges that impact their adoption. In addition, the research aims to shed light on the emergence of entrepreneurial ecosystems within the Italian context, elucidating their effects on business resilience and innovation. This effort not only improves operational efficiency and adaptability, but also fosters resilience against external shocks and disruptions. By reducing dependence on distant suppliers and streamlining production processes, Italian companies are able to deal with the uncertainties and risks inherent in today's fast-changing economic scenario. Preliminary analysis indicates that the Italian fashion industry shows a strong commitment to sustainability, reflecting a growing awareness of the environmental and social impact of business operations. Interviews reveal meaningful strides toward sustainability, as Italian companies increasingly embrace eco-friendly production methods, fair labor practices, and ethical sourcing in all their operations. By examining the interplay between reshoring strategies and business ecosystems, the study uncovers potential synergies and opportunities for collaboration that can improve the competitiveness and sustainability of Italian firms. Preliminary findings suggest that reshoring initiatives allow companies to regain control of their supply chains, thereby reducing the risks associated with offshore production and improving responsiveness to customer demands. In addition, entrepreneurs express optimism about relocating production closer to home, mentioning benefits such as reduced transportation costs, improved quality control and greater protection of intellectual property. However, reshoring initiatives bring significant benefits, as well as complexities. The decision-making process related to business process offshoring involves significant upfront costs, including investment in infrastructure, technology, workforce training and identification of new trusted suppliers. In addition, reshoring can result in higher labor costs than offshore destinations, potentially erasing the cost advantages that initially drove outsourcing decisions. In addition, reshoring initiatives can disrupt established supply chain relationships and require companies to navigate regulatory complexities and market dynamics in their home countries. These issues and trade-offs are currently being explored in depth.

Research limitations. While this work offers valuable insights into strategic management practices, it is critical to recognize some limitations that delineate the scope of the research and highlight opportunities for future investigation and improvement. First, a significant limitation concerns the focus of the research. By analyzing the experiences of Italian firms regarding reshoring strategies and entrepreneurial ecosystems within the fashion industry, the study may not fully understand the diversity and intricacy of strategic management practices across different sectors and regions. Indeed, the dynamics of reshoring can vary significantly depending on factors such as industry characteristics, geographic location, and market conditions. Therefore, while the results of this research offer valuable insights in the context of the Italian fashion industry, their applicability to other sectors or regions requires further validation and exploration. The second limitation concerns the dynamic nature of the topic under investigation. Reshoring strategies and entrepreneurial ecosystems are subject to continuous evolution and change, influenced by factors such as technological advances, regulatory changes and sudden shifts in consumer preferences. Consequently, the results of this research can summarize the current state of the art, capturing a temporary glimpse of broader trends and dynamics. Longitudinal studies tracking

the progression of reshoring strategies and entrepreneurial ecosystems over time, as well as comparisons across sectors and countries, could provide valuable guidance.

Managerial implications. Outlining the strategies and approaches adopted by Italian companies, this study offers a roadmap for improving resilience, fostering innovation, and promoting sustainable growth through optimizing supply chain strategies and using local ecosystems to achieve collaborative benefits. For practitioners, the preliminary findings of this research offer practical insights to navigate the complexities of a rapidly changing business landscape. The study reveals that different models of strategic development can be profitable for companies, depending on their unique resources and capabilities in their specific contexts. In particular, the analysis provides guidance and recommendations for evaluating potential reshoring activities and considering the resources and capabilities needed to implement such strategies. This includes not only the skills and capabilities intrinsic to the firm, but also relational aspects in interactions with the whole supply chain, transforming it into a full-fledged ecosystem.

Originality of the paper. This work stands out for its originality in the context of research on strategic management and business resilience in response to unprecedented global transformations. Through an innovative approach, the work explores the phenomenon of reshoring and entrepreneurial ecosystems, focusing on the fashion industry in Italy, a choice that reflects the relevance and uniqueness of this context on the international scene. In a world marked by destabilizing events such as the COVID-19 pandemic, environmental disasters and geopolitical tensions, the paper aims to analyze the effects of these shocks on the strategic management strategies of Italian firms and the dynamics of their entrepreneurial ecosystems. Through a comprehensive methodology that integrates quantitative and qualitative analysis, the study provides a comprehensive view of the reshoring strategies adopted by Italian firms, highlighting the motivating and inhibiting factors as well as the implications of these strategies for competitiveness and sustainability. This work offers a unique and in-depth perspective on a topic of increasing relevance in the context of current economic and geopolitical scenario, providing valuable insights for the theory and practice of strategic business management.

Funder: Project funded under the National Recovery and Resilience Plan (NRRP), Mission 4 Component 2 Investment 1.3 - Call for tender No. 341 of 15/03/2022 of Italian Ministry of University and Research funded by the European Union - Next Generation EU.

Award Number: PE00000004, Concession Decree No. 1551 of 11/10/2022 adopted by the Italian Ministry of University and Research, CUP E63C22002130007, MICS (Made in Italy - Circular and Sustainable).

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Unpacking the “truce” in Sales and Operations Planning routine. An ethnographic study (work in progress research)

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Abstract

In the evolving landscape of modern organizations, the last few decades have witnessed a paradigm shift towards virtuosity, marked by significant improvements in operational efficiency and performance. Key drivers of this transformation include integrating communication channels along the supply chain and implementing lean principles in production processes, coupled with the widespread adoption of digital technologies. These advancements have facilitated streamlined operations and enabled organizations to achieve unprecedented levels of financial growth.

The Sales and Operations Planning (SOP) process is central to the success of virtuous organizations, which serves as a linchpin for aligning internal resources with external customer demand. SOP entails a series of regular monthly meetings involving representatives from various functions, including Marketing & Sales, Operations, Supply Chain, and Finance. However, despite its instrumental role in fostering inter-functional alignment, SOP is often fraught with conflicts. This inherent conflict arises from divergent functional objectives, as each function seeks to optimize its performance, sometimes at the expense of others.

While existing literature acknowledges the significance of SOP in organizational performance, there remains a gap in understanding the mechanisms that lead to conflict avoidance or resolution within this process. This paper seeks to address this gap by adopting a routine-based perspective, conceptualizing SOP as an ongoing and dynamic inter-functional routine. Drawing on theoretical frameworks such as Nelson and Winter's theory of organizational routines and Dionysiou and Tsoukas's model of routine (re)creation, we aim to unpack the role of organizational routines in mitigating conflicts during SOP sessions.

Specifically, we hypothesize that increased enactment of role-taking within SOP routines leads to decreased conflicts among organizational actors. To empirically investigate this hypothesis, we propose an ethnographic study within a large manufacturing firm, wherein we will closely observe the dynamics of SOP meetings and analyze the role-taking behaviors of participants. By structuring our paper to elucidate the significance of SOP, proposing a routine-based conceptualization, detailing our methodology, and outlining our expected contributions, we aim to provide actionable insights for practitioners and scholars in organizational behavior and management.

Key words: SOP, routine, routine as a truce

Framing of the research and purpose of the paper. *In the last decades, most virtuous organizations experienced a general improvement, from integrating and streamlining the communication along the supply chain (Grimson and Pyke, 2007) to implementing lean principles in the production process, creating production flow, and reducing waste (Furlan et al., 2011; Dal Pont et al. 2008). Another facilitating factor in reaching a superior performance is the use of digital technologies and the wide adoption of integrated internet technologies from both the supply side (i.e., Industrial Internet of Things) and the demand side (i.e., marketing responsiveness and massive data gathering possible due to internet-related technologies). The result of those virtuous cycles is an improvement in the firm's ability to generate financial growth. Parallel to the benefits of technology implementations, managerial tools, and processes play an important role in continuously aligning the firm's internal resources with external customer demand. Among those processes, Sales and Operations Planning (SOP) plays a crucial role. This process consists of a series of regular monthly-held meetings in which the representatives of each function (i.e. Marketing & Sales, Operations and Supply chain, Finance) advocates its own interests (Grimson and Pyke, 2007) and through confrontation, the actors aim at finding an agreed upon aggregate production plan over the medium-term (3-18 months).*

Due to its role in inter-functional planning alignment, SOP is an inherently conflictual process (Jacobs and Chase, 2023). In planning capacity and production, each function aims to maximize its own performance, even at the expense of

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other functions (Rotemberg and Salor, 1995; Jacobs and Chase, 2023). In most virtuous organizations, SOP consists of a clear and routinized process of monthly meetings with a clear format (Lapide, 2005).

Even if several papers have studied the benefits and inner workings of SOP, there is a lack of understanding about the mechanisms that lead to conflict avoidance or resolution during the process. In this paper, we aim to unpack these mechanisms, relying on the theory of organizational routines and interpreting SOP as an ongoing and dynamic inter-functional routine. As theorized by Nelson and Winter (1982: p.109), “[routines] largely prevent or deter individual members from pursuing their own interests along lines that are so strongly antithetical to organizational requirements as to threaten the feasibility of any coordinated performance at all.” In other words, organizational routines serve as truces among organizational actors that temporarily aligned their respective interests. To unpack how these “truces” emerge, we draw on Dionysiou and Tsoukas’s (2013) model of (re)creation of routines, exploring role-taking as a conflict-solving mechanism. We assume that the more role-taking is enacted, the less conflicts will emerge. However, we lack clarity about how role-taking takes place in actual routines. To this end, we study the enactment of SOP within a large manufacturing firm adopting an ethnographic approach.

SOP: an overview

SOP is defined as “The process that companies use to keep demand and supply in balance by coordinating manufacturing, distribution, marketing, and financial plans” (Jacobs and Chase, 2023; p.244). The coordination in planning among functions has been proven to impact different organizations’ dimensions positively. In fact, extant literature testified the effectiveness of a well-implemented SOP over different firms’ goals, such as alignment between demand and supply (Chae, 2009; Singh, 2010), alignment between various functions (Ivert and Jonsson, 2010; Paiva, 2010), and alignment between supply chain (Gianesi, 1998; Lapide, 2005). Additionally, SOP helps to improve forecasts (Bower, 2005), operational performance (Milliken, 2008), and management of uncertainty and risks (Lapide, 2009).

However, despite the proven effectiveness of this process, only a few organizations have developed sufficient maturity in SOP. Several models have been developed to measure the maturity of SOP implementation. These models are usually conceptualized as composed of three to five steps (Wing and Perry, 2001; Lapide, 2005; Feng et al., 2008; Cacere et al., 2009). Despite the differences in the number of maturity stages, all those conceptualizations share some common traits. For example, in early maturity stages, SOP meetings are held occasionally, with a loose structure and without a proper information system, and each function makes the forecasts independently to pursue each own financial goals (Lapide, 2005; Grimson and Pyke, 2007). Moreover, shifting from one maturity stage to another usually means creating a proper structure for these meetings, following a precise and described agenda, and establishing a dedicated information system that each function can update (Lapide, 2004; 2005). As firms reach more mature stages of SOP implementation, monthly meetings are anticipated by the so-called “pre-SOP meetings,” in which each function prepares its forecast, presents it in the official meeting, and all the material is shared between functions to ensure homogeneity in information availability. All the benefits mentioned before increase as companies reach more mature stages of the SOP model (Grimson and Pyke, 2007). In fact, with a proper meeting structure and information systems, it is easier to coordinate, align, and solve inter-functional inconsistencies in the planning phase, extending the coordination to other players along the supply chain (Lapide, 2005). Ideal stages of SOP maturity are very difficult to achieve (Lapide, 2005) but serve the organizations as archetypes to aspire to.

SOP as an organizational routine: truce and conflicts

Routines have been recognized as how organizations accomplish much of what they do (Feldman and Pentland, 2003; Becker, 2004). One reason for creating a routine is to create a workable level of certainty and improve process effectiveness (Weick, 1979). With their evolutionary perspective, Nelson and Winter (1982) define routines as stable and predictable action patterns and organizational genes that can be inherited and selected by the organization's environment. Interestingly, they identify a role of “truce” to routines, meaning that they can solve intra-organizational conflicts, both manifest and latent, as long as they “stay within predictable bounds that are consistent with the ongoing routine” and “the terms [of the truce] become increasingly defined by a shared tradition arising out of the specific contingencies confronted and the responses of the parties to those contingencies. In the interpretive context of such a tradition, actions by individual members have connotations related to the terms of the truce.” (Nelson and Winter, 1982: p.110-111). Diverging from the traditional perspective that compares routines to genes characterized by highly inertial structures, with evolution relying on experiential, localized, and semiautomatic search processes (Cyert and March 1963, Nelson and Winter 1982), a body of research indicates that the tangible transformation of routines encompasses both experiential and deliberate characteristics (Gavetti and Levinthal 2000, 2004). According to this recent view, Feldman and Pentland (2003, p. 96) define routines: as “a repetitive, recognizable pattern of interdependent actions involving multiple actors.” We rely on the view of SOP as predictable patterns of collective actions to grasp and evaluate the interactions between SOP participants, unveiling the underlying mechanisms leading to conflict avoidance.

In particular, we propose a routine-based view in which SOP can be reduced to a series of recognizable patterns of actions that guide individuals' behaviors toward a mutual understanding over the foreseeable future, mediating between each function's own strict interest. We argue that this shared understanding among individuals is the real source of the SOP's positive impacts on organizational performance. As mentioned before, our conceptualization of the routine-based view of SOP starts from the model of (re)creation of routine (Dionysiou and Tsoukas, 2013).

In the initial phases of routine creation, the team must establish shared mental models and meanings of what the team should accomplish (Dionysiou and Tsoukas, 2013). Initially, a team starts operating in an environment characterized by few rules and artifacts; by interacting multiple times to achieve the predetermined goal, employees can create a pattern

of actions to accomplish it. The more the routine is repeated, the more its outcome becomes certain as the pattern of actions and the scope to achieve is clearer to the employees (Dionysiou and Tsoukas, 2013). After the routine creation, it has to be sustained, and it is not possible to do it without the support of the team's norms, climate, and artifacts (Dionysiou and Tsoukas, 2013; Pentland and Feldman, 2005). We hypothesize that creating shared schemata between coworkers and the few standard operating procedures provided by the upper management makes it possible to establish a routine that can guide employees' emotions and cognition through a shared habit (Cohen, 2007). Through repetition, schemata about each component's role in the routine and the expected results will be shared. To achieve such results, at the early routine-forming stage, people perform some role-taking activities that evaluate the role of others in the process, assess the possible interdependencies, and assess their overall contribution to the routine. We stress the "role-taking" mechanism as crucial in routine formation and conflict resolution. As noted by Dionysiou and Tsoukas (2013, p. 186), "It is through taking the role of others that individual lines of action are fit together to form joint action. Each individual aligns his or her action to the action of others by identifying the social activity in which they are about to engage and by ascertaining what those others are doing (or what they intend to do) in forming the joint action." In the context of SOP, the role-taking leads to breaking the tunnel vision barrier, embedding it in the functional planning, and addressing the need for other functions, which should lead to compromises in planning future activities.

Similarly to Dionysiou and Tsoukas' model (2013), in the early stage of SOP implementation, there is no clarity on the scope of the process in participants' minds. We expect a clear routine will emerge with several interactions between function representatives as long as the participants engage in role-taking behaviors. This latter mechanism should appear as each function representative embeds other representatives' points of view in each function's forecasting and planning. By doing so, the conflicts should be reduced, and, in the event they still emerge in the meetings, it should guide participants' behavior and intentions toward finding a common solution.

A typical example of inter-functional conflict is represented by marketing and operation in planning for a promotion campaign: on the one hand, the market function decides to push a line of products to the market by designing a discount price that represents a disruption in the normal production schedule of operation. On the other hand, operations function may be considered impossible to satisfy the forecasted demand due to the need for increased production, which is not easily reachable without increasing functional costs. In this context, we argue that an established routine and shared schemata can lead to the creation of some boundary conditions in which the two functions can freely operate, avoiding conflict. For example, as testified by Zbaracki and Berger's (2011) case, through a long process of confrontation and role-taking, sales and marketing finally agreed to make 3-10% adjustments to the final price.

However, both the SOP literature and the more general literature on routine dynamics lack a thorough and detailed understanding of the mechanisms by which the actors enact role-taking, truces emerge, and conflict is solved starting from divergent goals and objectives. This is the paper's aim, and coherently with its explorative nature, to answer the research question, we delve into the SOP process of a firm adopting an ethnographic approach.

Methodology. Pentland et al. (2010) and Mahringer and Pentland (2021) stated that the most appropriate way to study organizational routines is to focus on the observational layer, meaning the performative aspect, even if the scope is to examine the generative mechanism. Coherently with Pentland et al. (2010), we decide to focus on observable actions and verify if there is a "pattern in variety" (Cohen, 2007). In other words, we want to seek a pattern of repeated actions over time to find agreement between function representatives during SOP meetings. Zbaracki and Berger (2011, p.956) noted that "describing the routine as a truce misses the conflict behind the truce; it reveals only the stable truce." Moreover, articulating the terms of a truce invariably lacks full explicitness, with particular emphasis on the intra-organizational truce, wherein explicit delineations are frequently absent. (Nelson and Winter, 1982). To overcome this issue, we build our empirical study following the methodology of Zbaracki and Berger (2011), adopting an ethnographic approach to unveil the mechanisms leading to a truce. Therefore, to shed light on routine dynamics as a truce, we focus on the interplay between actors rather than treating the routine as an entity.

As a research setting, we studied the SOP meetings of a large manufacturing firm. We seek to gather data engaging in at least six months of longitudinal study, which has three main sources:

Ethnographic Interviews. We will conduct ethnographic interviews (Spradley, 1979) with representatives of each firm's function to fully understand the context in which the SOP meeting took place and the dynamics in the company.

Nonparticipant Observation. During the SOP meetings, we will conduct nonparticipant observation, following the planning process as it focuses on observing the interaction between members of different functions and the dynamics that will occur when a problem arises. Moreover, we will evaluate the evolution of the SOP implementation, evaluating the grade of maturity and the changes that will occur through its repetition over time.

Records Data. Finally, we will record data: this source will be needed to have a clear picture of the SOP's implementation as-is state. We need to know the degree of integration of the information systems as well as the consistency in participation of each function's member. If any, we will also collect any document attesting to any conflicts that arose in the past, and, along with interviews with key informants, we will assess the process followed to solve it.

As far as data analysis is concerned, by comparing the situation of each SOP meeting and the action path it follows, we will be able to evaluate the performative aspect of this routine. In addition, by comparing our findings to records data, we can assess whether a more routinized SOP behaves like a truce routine. Moreover, by participating in the meeting, we will also be able to evaluate which form of truce mechanisms emerge.

Managerial implications. With this empirical research, we aim to elucidate the success factors of SOP by exploring its routine nature. To do so, we adopt an ethnographic approach to assess the process manifestations that lead to conflict-avoidance and resolutions. Moreover, by studying the manifestation of the truce mechanism of routines, we want to shed light on the role of organizational routines in organizational processes. In addition, we aim to answer Zbaracki and Berger's (2011) and Pentland and Feldman's (2005) on the role of operations routines in stabilizing and changing organizations' behavior and to unveil the dynamics of "routine as a truce." These findings have strong managerial implications since a more complete understanding of the success factors of SOP as routine, along with a clearer depiction of how it manifests its mechanisms, can help management effectively implement SOP and completely enjoy its benefits.

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Which governance strategy is best for specialized investments? Insights from the weaker partner's perspective

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Abstract

This study revisits the governance strategies for protecting relationship-specific investments in scenarios of power asymmetry, building upon Subramani and Venkatraman's 2003 work. We not only replicate their analysis but also expand it by examining three governance mechanisms, up from two, and incorporating an additional dimension for temporal asset specificity, which enriches the framework with a focus on intangible time-related investments. Our contributions are twofold: we empirically demonstrate the link between asset specificity and governance mechanisms in modern business contexts where intangibles and time constraints heighten the risk of opportunism. Furthermore, we emphasize the importance of replication studies in supply chain management, responding to the recent scholarly call for more research in this area.

Key words: governance; specialized investments; replication; TCE; opportunism

Framing of the research. *The issue of protecting investments that are specific to buyer-supplier relationships, known as relationship-specific (or specialized) investments, has been a fundamental aspect of Transaction Cost Economics (TCE) since the theory was first introduced in 1937 (Coase, 1937). Asset specificity is characterized by investments tailored to support a particular transaction, which cannot be repurposed for "alternative uses or by alternative users without a loss of productive value" (Williamson, 1991, p. 81). Companies often undertake these specialized investments to enhance productivity and generate profits (Dyer, 1996). However, pursuing increased specialization comes with its costs and risks. For instance, in the electric power sector, strategic decisions to situate some power generation plants near specific mines ensure a steady coal supply but also create site-specific scenarios. In these scenarios, the assets are fixed and expensive to move (Parker, Tan, and Kazan, 2019). While such specialized investments can lead to higher productivity, their value diminishes if the original transaction ends prematurely (Williamson, 1985; De Vita et al., 2011). In such cases, the investor faces the risk of being left with sunk investments, underperforming or excess assets, and an inability to redirect resources to other, more promising ventures (Buvik and Reve, 2001). Thus, when asset specificity is a factor, the transaction costs within a relationship escalate, and the potential for opportunistic behavior increases as well (Dyer, 1996).*

Many theorists, beginning with those in the field of Transaction Cost Economics (TCE), have long maintained that selecting an appropriate governance structure is crucial for protecting specialized investments and mitigating opportunism (Stump and Heide, 1996; Geyskens et al, 2006). Nevertheless, the imbalance of power between partners affects how each contributes to governance strategies, leading to varied outcomes (Brito and Miguel, 2017). Within this area of study, the work by Subramani and Venkatraman, published in 2003 in the Academy of Management Journal, stands out for its significant influence. This prominence is attributed not only to the prestige of the journal and its impact on Supply Chain Management (SCM) research, which is not fully reflected by citation metrics, but also because to the fact that it tackles an issue that remains critically important two decades later. Specifically, it explores how vulnerable suppliers, who typically lack the bargaining power to secure safeguards for their relationship-specific investments upfront (ex-ante), develop governance mechanisms to protect their specialized investments after the fact (ex-post).

The article by Subramani and Venkatraman, published in 2003, is distinguished not only by its significant findings but also by its methodological rigor, including the clarity in the selection of variables, data collection, and analysis. This detail underscores the study's suitability as a basis for a replication study examining the impact of various asset specificities on relationship governance.

In recent years, the importance of specialized investments in buyer-supplier relationships has surged across numerous industries. This increase is due to dedicated investments, particularly intangible ones, facilitating enhanced efficiency (Hameri and Paatela, 2005), fostering relationship development (Skarmas and Robson, 2008), and spurring technological progress (Zheng et al., 2022). At the 2023 International Federation of Purchasing and Supply Management World Summit, a key topic of discussion among professionals was the growing necessity for asset specificity to ensure the continuity of strategic and scarce supplies. Over the last decade, there has been a rising demand for specialized routines (adhering to strict delivery protocols), business process redesign (such as customer-specific engineering for unique

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component production), and knowledge customization tailored to early involvement practices (Johnsen, 2009; Kähkönen et al., 2015), highlighting the evolving landscape of supply chain management and its increasing complexities.

Purpose of the paper. Recent articles in leading journals have rejuvenated the discussion on the significance of asset specificity in both relationship governance (Blome et al., 2013) and relationship performance (Delbufalo, 2021), thereby indicating that the research field remains vibrant and unexhausted. We decided to contribute to this literature with a replication study. Our contribution is twofold.

Firstly, we aim to demonstrate, through empirical evidence, the connection between asset specificity and governance mechanisms in contemporary business environments. In these settings, intangibles and time constraints are crucial in defining the characteristics of relationships, while power imbalances complicate efforts to mitigate opportunistic behavior.

Secondly, we highlight the importance of replication in the supply chain management literature. We respond to the calls for more replication studies made in various prominent journals and editorials (Gattiker et al., 2021; Pagell, 2021), which argue that replication studies are essential but underrepresented in current research. These studies are crucial because they “provide predictive validity and help to ascertain the generalizability of our theories” (p. 89). Herein, we outline our reasons for replicating the study by Subramani and Venkatraman (2003), detailing our approach. We also discuss the methodological challenges we faced and the anticipated outcomes of our research.

We propose a replication study (Gattiker et al., 2021; Pagell, 2021) that yield two models: Model A and Model B. In Model A, we aim to replicate the original framework devised by Subramani and Venkatraman (2003), employing the same variables, constructs, and operationalizations but testing the hypotheses in a new context to provide either confirmatory or disconfirmatory evidence. This approach will also help us identify new boundary conditions. We plan to use a cross-industry setting to compare our findings with the original study, thereby enhancing their generalizability. Instead of focusing on the retail distribution channels context explored by Subramani and Venkatraman, our analysis shifts to upstream supply chain relationships. Our goal is to understand how smaller suppliers, after making their specialized investments, develop governance mechanisms in their dealings with dominant manufacturers.

In Model B, we introduce an expanded version of the original study that adopts a more thorough approach. This expansion covers three governance mechanisms instead of two and adds an extra dimension of asset specificity, bringing the total to five dimensions rather than four. The broadening of governance mechanisms is designed to expand the range of governance options by considering three distinct constructs (Keller et al., 2021): i) Formal relational governance; ii. Informal relational governance; iii. Informal contractual governance. Furthermore, we expand the range of independent variables to enhance our understanding of the asset specificity construct. We introduce the dimension of temporal specificity, a crucial addition that enables us to consider the intangible investments made to manage time-specific requirements. This dimension highlights the critical role of timing in buyer-supplier relationships and the need for mechanisms to manage the risks associated with investments that have a significant time-bound value. Temporal specificity has become indispensable for companies aiming to navigate the challenges posed by recent disruptions. These events have highlighted the importance of managing time-related uncertainties, as delays and unpredictability in supply chains can severely impact operations and profitability (Holgado and Niess, 2023). Figure 1 summarizes the replication study design and its outcomes.

Methodology. We prepared 59 measurement items which map onto eight constructs provided in Figure 1. We plan to use the “lavaan” package in R programming language (Rosseel, 2012) to build Model A and Model B. The model building follows the standard structural equation modelling approach: Measurement Model, if confirmed, followed by the Structural Model. The measurement model tests whether the items measure the constructs they intend to measure. If the measurement model is confirmed, we continue with the structural model to test the hypothesized relationships. The checks we will perform on the measurement model are as follows.

We will provide a descriptive summary of measurement scales which will include: Factor Loadings; Composite Reliability; Cronbach’s alpha; Average Variance Extracted (AVE). We will consider composite reliability and Cronbach’s alpha to ensure internal reliability of the model. Composite reliability uses the outer loadings of the indicator variables and Cronbach’s alpha is a more conservative measure (Hair et al., 2017a, b). We will check that both measures indicate good internal reliability with values for all the multi-item constructs exceeding 0.7 (Hair et al., 2017a, b; Hulland, 1999). The AVE values need to exceed 0.5 to ensure convergent validity (Hair et al., 2017a,b).

We will check for discriminant validity using the AVE and the Hetero-Trait Mono-Trait (HTMT) ratio. The square-root of the AVE of a construct must be greater than the correlation of that construct with other constructs (Fornell and Larcker, 1981). The HTMT ratios must be lower than 0.90 (Henseler et al., 2015). To check for Common Method Bias, we will follow Harman’s single factor method, where we will include all measurement items in an exploratory factor analysis to check that the first factor accounts for less than 50% of the variance in the unrotated solution (Podsakoff et al., 2003). In the structural model, we will focus on the coefficient of determination (R^2) to measure the model’s predictive power. We will report the effect size (f^2) and predictive relevance (Stone-Geisser’s Q^2 , Geisser, 1975) along with structural model path coefficients and their significance. We will present in a summary table which hypotheses are supported and which are rejected. Our aim is to increase confidence in the validity of the original findings of Subramani and Venkatraman (2003) in Model A and also contribute to knowledge by Model B, which extends the original Model A. We will be able to identify the deviations from expectation (e.g, if we cannot confirm Model A) by checking the differences in the operationalization of the measurement items, population including industry and geographical location of the respondents, and control variables (Gattiker et al., 2022).

Results (expected). Based on a systematic test of competing models, we expect to find that the three dependent variables are indeed different from one another, and their determinants are different as well. It is our aim to state that the three governance dimensions effectively safeguard the relationship-specific investments made by suppliers even if with different intensity. Regarding model A, any deviations from the results of the original study can be explained by considering one or more of the following factors: 1) the different context of analysis (supplier-manufacturer dyadic relationships); 2) the different sampling (multiple networks versus single network); 3) different factors related to the two sectors considered (food and fashion industry). In the original study, a counterintuitive result emerged: site specificity was inversely related to the level of joint decision-making. Subramani and Venkatraman (2003) argue that site specificity ensures by itself continuity in the relationships and no other safeguard are needed. We aim to see if this result is confirmed for formal relational governance (including the former joint decision-making variable) and for the other two dependent variables. Regarding model B, we aim to verify whether some dedicated investments are more influential than others in determining governance choices. In the original study, intellectual capital-specific investments (i.e., domain knowledge specificity) were more decisive than other dimensions of asset specificity in relation to governance choices. Moreover, we expect to see if temporal specificity impacts governance mechanisms and whether this impact is uniform across the three considered dimensions.

Research limitations. The study is still in the experimental phase, and we are proceeding to collect the necessary data to proceed with the replication study (both Model A and B). Therefore, one of the major limitations is related to the fact that it does not yet present empirical test results. Another limitation of the study is related to its nature as a replication study. Indeed, as suggested by Gattiker et al. (2021) and Pagell (2021), working on this type of research implies bearing a higher risk of failure than any other empirical work. Researchers have little incentive to replicate the results of previous studies because reviewers, editors, and readers are biased to the new and the novel (Duvendack et al., 2017). Worse, this novelty bias also provides incentives to engage in questionable research practices (e.g., Bishop, 2019). Finally, on those occasions when replication is done, the results of previous research often are not validated, perhaps because of those questionable practices. Despite those motivations, we strongly believe in the value of such replication exercises for increasing the quality of SCM research. We hope our study contributes to making replication explicitly considered as part of the continual testing and refining of theories, which is central to conducting normal science.

Managerial implications. This analysis holds significant value both theoretically and for managers. From a theoretical standpoint, it offers an opportunity to refine and extend a seminal study by examining its applicability in the context of modern, complex exchanges. By exploring the nuanced impacts of asset specificity, particularly intangible and time-related dimensions, it contributes to a deeper understanding of how governance mechanisms evolve in response to these challenges. For managers, the insights gained are equally critical. Understanding the interplay between asset specificity and governance mechanisms can guide the development of more effective strategies for managing relationships and investments. Specifically, it can help managers identify which types of investments require more tailored governance structures to mitigate risks and enhance value creation. Additionally, by recognizing the importance of intangible assets, managers can better allocate resources towards the protection and leverage of these assets, ensuring their firm's competitive advantage in a rapidly changing business environment.

Originality of the paper. Our objective is to explore how various dimensions of asset specificity influence specific governance dimensions, and to identify which relationships are most intense compared to others. We aim not only to compare our findings with those of the Subramani and Venkatraman's (2003) study but also to update the discussion on the relationships between dependent and independent variables. Our primary interest lies in determining whether intangible specific investments exert a stronger influence on certain types of governance (e.g., joint decision-making or relational norms) as opposed to tangible investments (such as physical and site specificity). Additionally, we seek to understand which dedicated investments necessitate more extensive and diversified safeguards. Through this analysis, we aim to reassess the validity of Transaction Cost Economics in the context of modern exchanges, which are characterized by a fragmentation of governance mechanisms and a shift towards the intangible (and time-related) dimensions in relation to asset specificity.

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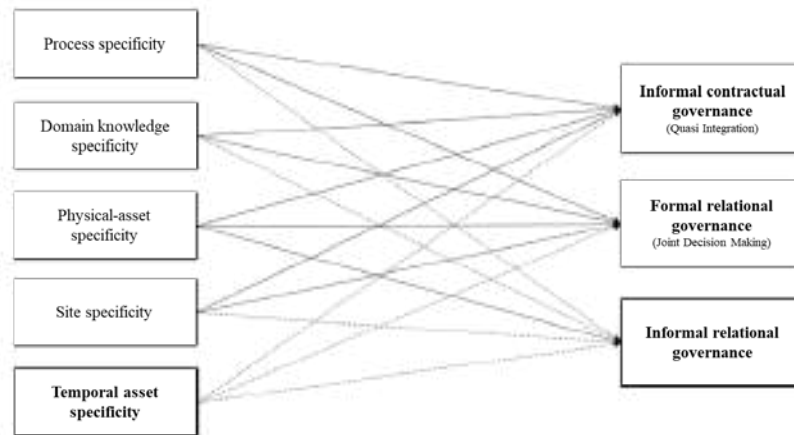
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Figure 1: Theoretical framework for Model A and B*



* Model B: The new variables are identified by bold text, and the new linkages are indicated by a dashed arrow.

Original study: Subramani & Venkatraman (2003)

Decarbonizing Last-Mile Delivery: a study on crowdsourced delivery incentives

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Abstract

The increasing trend of online purchases has imposed considerable tension on delivery services, particularly in the realm of last-mile delivery. This trend has contributed to a notable increase in the number of delivery vehicles, resulting in enhanced CO2 emissions and intricate traffic logistics in urban areas. Consequently, the imperative for the effective integration of sustainable green delivery systems, such as crowdsourced delivery, is on the rise. This research delves into the interplay between economic compensation, non-economic benefits, and the inclination to engage in crowdsourced delivery. Employing an online survey involving 137 participants, the results reveal that both economic compensation and non-economic benefits correlates with an increased willingness to participate in crowdsourced delivery. Intriguingly, the moderating factors of extra travel time and exploration stage challenges do not significantly impact this relationship. This research contributes valuable insights to strategic management, urging delivery firms and their managers to adopt and promote the implementation of environmentally friendly delivery systems.

Key words: Last-mile delivery, crowdsourced delivery, decarbonization

Framing of the research. The growth of e-commerce has revolutionized the way we shop, transforming the retail landscape and significantly impacting the last-mile delivery sector. The World Economic Forum's (WEF) estimation of 19 million metric tonnes of CO2 emissions from delivery vehicles in major cities in 2019 underscores the environmental fee of this evolving trend. By 2030, 36% more delivery vehicles are anticipated to be on the road (Hartlief & De Leth, 2021), this projection intensifies concerns about the sustainability of current last-mile delivery practices.

In today's digital age, the seamless process of ordering a package with a few clicks on a computer has become commonplace. With 51% of retailers already offering same-day delivery and 65% intending to adopt this service within the next two years (Saleh, 2018), the demand for efficient last-mile delivery solutions is more pressing than ever. However, the convenience of doorstep delivery comes at a significant cost, both economically and environmentally. Last-mile delivery, a critical component of business-to-consumer e-commerce, poses challenges for retailers striving to balance speed and quality in product delivery (Devari et al., 2017). The common choice offered to customers between store pickup and home delivery reveals the ongoing struggle to find cost-effective and sustainable solutions. Despite the majority of online shoppers preferring home delivery, the costs associated with last-mile delivery range from 13% to 75% of total supply chain expenses, a substantial financial burden for retailers (Gevaers et al., 2009). Compounding these challenges are issues such as the "not-at-home syndrome" and the "ping-pong" effect, where customers' unavailability or failure to meet agreed-upon delivery times results in added financial and environmental costs due to additional miles driven, especially in areas with low consumer density (Devari et al., 2017).

In response to these challenges, retailers are exploring diverse delivery methods, from traditional carriers like DHL to innovative concepts like drone deliveries and in-store pickups with drive-through windows (Slabinac, 2015). However, one of the most intriguing solutions that has emerged in recent times is crowd logistics, offering a potential remedy to last-mile delivery issues in urban areas (Castillo et al., 2022). With the daily surge in deliveries and a growing emphasis on sustainability, academics and industry managers are recognizing the need to explore crowdsourced last-mile delivery as a viable and eco-friendly option.

Purpose of the paper. In the contemporary academic landscape, scholars have extensively delved into the realm of crowdsourced logistics, crafting frameworks, designing models, and scrutinizing the efficiency of these logistical systems. However, a notable research gap exists, presenting an intriguing avenue for further exploration in this study. Specifically, this research aims to investigate the impact of various payment and incentive schemes on individuals engaged in crowdsourced delivery, as highlighted by prior work (Arslan et al., 2019). The intricate examination of the proposal to provide store credits or rewards to those contributing to delivery assistance, as suggested by Devari et al. (2017), demands thorough investigation. This research posits that a deeper comprehension of the motivations and behaviors of

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crowdsourced drivers, as advocated by Castillo et al. (2018), has the potential to facilitate the development of intricate and potentially more effective supply management strategies. More in detail, this study aims to fill a critical research gap by exploring the motivations of individuals participating in crowdsourced delivery and identifying the incentives that resonate with them. Acknowledging the pivotal roles played by economic compensation and non-economic benefits in driving participation, the research also probes into the impact of factors such as additional travel time and challenges encountered during the exploration stage. Through the application of a quantitative analysis of primary data gathered through surveys, the study aspires not only to enhance the theoretical understanding of sustainable last-mile delivery systems but also to provide practical insights for the formulation of effective supply management strategies. This paper, in particular, aims to address the following research questions:

RQ: Do economic compensation & non-economic benefits lead to more people joining the crowdsourced delivery system? Do extra travel time and exploration stage challenges have an influence on this?

Participation in crowdsourced delivery is incentivized from the crowdsources' perspective, encompassing both monetary and non-monetary rewards (Mladenow et al., 2014; 2015; 2016). The remuneration associated with shipments significantly influences couriers' decisions to bid for shipping requests (Ermagun et al., 2020). External motivators, such as financial gain, fame, and prizes, play a crucial role when individuals are driven by factors unrelated to the intrinsic appeal of the activity itself (Hossain, 2012). Additionally, various initiatives underscore non-economic factors, addressing diverse motivations for engaging in crowdsourced delivery. Some emphasize social ties, promoting activities like "shopping with friends," while others highlight environmental benefits, positioning their service as "environmentally friendly delivery." Political declarations and altruistic experiences are also leveraged, as seen in mission statements like "empowering local economies in a connected world" or offers of altruistic joy such as "making someone happy when you travel" (Carbone et al., 2017).

However, participating as a driver in a crowdsourced delivery system often incurs an additional time cost compared to non-participation. Drivers must make a trade-off when deciding whether to accept a delivery request, with travel distance to the task being a critical factor influencing this decision. Quantitative modelling reveals that the distance to the task significantly impacts workers' willingness to undertake it, with a diminishing effect on utility as travel distance increases (Miller et al., 2017; Kim, 2015). This highlights the importance of understanding the dynamics of travel time and distance in shaping couriers' decisions within the context of crowdsourced delivery.

Despite the potential compensation, several factors can act as deterrents to individuals considering participation in crowdsourced logistics. These include the perceived risks of incurring extra costs, the absence of relevant laws, unclear distribution of responsibilities, financial instability, and a lack of social protection. These challenges, collectively referred to as "exploration stage challenges," stem from the underdevelopment of crowdsourced delivery and can impede the willingness of individuals to participate (Huang et al., 2020).

Building upon the insights from existing literature, this research posits the following hypotheses:

H1: The willingness to engage in crowdsourced delivery exhibits a direct positive correlation with both economic compensation and non-economic benefits.

H2: The association between economic compensation, non-economic benefits, and the willingness to participate in crowdsourced delivery is moderated by extra travel time. Consequently, the strength of this relationship diminishes when there is an increase in extra travel time.

H3: The association between economic compensation, non-economic benefits, and the willingness to participate in crowdsourced delivery is moderated by exploration stage challenges. As a result, the strength of this relationship diminishes when there is an increase in the level of exploration stage challenges.

Figure 1: Conceptual model

Methodology. This study follows a quantitative cross-sectional research design. We developed, using the online tool Qualtrics, a questionnaire-based survey to collect data. The language used in the questionnaire was English. To ensure that the respondents to the questionnaire would correctly understand the questions, the survey was pre-tested and validated by research group members. In terms of the sampling approach, a combination of snowball sampling and convenience sampling was employed. The survey was initially distributed within the personal network of the researcher through email. By encouraging participants to share the survey in their own networks (snowball sampling), a more diverse and expansive sample group was achieved. The survey was also shared on social media platforms such as LinkedIn and Instagram to further broaden the reach. The population of interest in this study comprises adults aged 18 or older, reflecting the minimum age required due to the responsibilities associated with participating in crowdsourced delivery. The results were analysed through IBM SPSS. All the items used to operationalize the constructs were based on validated scales in the extant literature. Each construct was measured through multi-item scales that ranged from 1- strongly disagree to 7- strongly agree.

The sample was equally distributed between males and females (49.6% males and 50.4% females). Regarding age, more than half of the participants were under 25 years old (54.7%). Furthermore, most of the participants had a master's degree (62.8%) or a bachelor's degree (33.6%). Finally, most of the participants are students and worked part-time (46.0%).

Results. Cronbach's alpha was computed for each variable to assess the reliability of the scales in this study. The economic motivation and non-economic benefits items exhibited a Cronbach's alpha of .684, slightly below the desired .7 threshold. Despite attempts to improve by removing items, no increase in Cronbach's alpha was observed, and there were no items with a distinctly low item-total correlation. Therefore, the reliability is deemed sufficient to proceed. For the extra travel time variable the Cronbach's alpha is .773. In contrast, the variable exploration stage challenges showed a Cronbach's alpha of .529, raising concerns about its reliability. Despite moderate inter-item correlations, removing items did not enhance Cronbach's alpha beyond .589. While acknowledging this limitation, the study proceeded with this scale for testing the model, emphasizing the need for cautious interpretation of the result. The Cronbach's alpha for willingness to participate in crowdsourced delivery stands at .585. Given its two-item composition, the option of item deletion is not viable. The correlation matrix serves to reveal the strength of relationships between variables. In the matrix, it is observed that extra travel time exhibits a weak positive correlation with economic compensation and non-economic benefits ($r = .027$; $p < .05$; $N = 137$). Additionally, willingness to participate in crowdsourced delivery shows a moderate positive correlation with economic compensation and non-economic benefits ($r = .545$; $p < .01$; $N = 137$). Notably, none of the variables in the model demonstrate a high correlation with one another. The Cronbach's alpha values for each variable are provided in parentheses.

Table 1: Means, Standard deviations, Correlations, and Cronbach's alpha

Variable	M	SD	1	2	3	4
1. Compensation and benefits ¹	4.87	1.09	(.684)			
2. Extra travel time	3.66	1.37	.207*	(.773)		
3. Exploration stage challenges	5.30	0.85	.087	-.001	(.529)	
4. Willingness to participate	4.34	1.43	.545**	.265**	-.061	(.585)
N = 137						

¹ = Economic compensation & non-economic benefits

² = Willingness to participate in crowdsourced delivery

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Note: Cronbach's alpha is in parentheses on the main diagonal.

The regression analysis indicates a positive and significant association between economic compensation and non-economic benefits with the willingness to participate in crowdsourced delivery, supporting H1. This implies that both economic compensation and non-economic benefits are positively correlated with the willingness to engage in crowdsourced delivery.

In further exploration, we investigated whether additional factors, namely extra travel time and exploration stage challenges, could impact the identified relationship. However, the results indicate that the connection between economic compensation & non-economic benefits and the willingness to participate in crowdsourced delivery remains unaffected by extra travel time and exploration stage challenges. Consequently, H2 and H3 are not supported. A summary of the hypothesis testing outcomes is detailed in Table 2.

Table 2: Results of the tested hypotheses

H1	The willingness to engage in crowdsourced delivery exhibits a direct positive correlation with both economic compensation and non-economic benefits.	Accepted
H2	The association between economic compensation, non-economic benefits, and the willingness to participate in crowdsourced delivery is moderated by extra travel time. Consequently, the strength of this relationship diminishes when there is an increase in extra travel time.	Rejected
H3	The association between economic compensation, non-economic benefits, and the willingness to participate in crowdsourced delivery is moderated by exploration stage challenges. As a result, the strength of this relationship diminishes when there is an increase in the level of exploration stage challenges.	Rejected

Research limitations and future research. While this study has made valuable contributions to both theory and management, it is not without its limitations. However, these limitations can serve as catalysts for future research. One notable limitation is the overrepresentation of young adults in the sample group. Consequently, the sample is less representative of the general population, reducing the study's generalizability. Additionally, 70.1% of the sample group did not possess a motor vehicle, which could potentially influence their responses to the survey on crowdsourced delivery.

Future studies should strive for a more balanced sample that includes individuals of various ages and income levels, while also considering the possession of a motor vehicle. This approach will enhance the study's external validity and provide a more comprehensive understanding of the factors influencing willingness to participate in crowdsourced delivery across diverse demographic groups.

The results of this study are based on quantitative research. Future research could delve deeper into obtaining concrete data about desired economic compensation & non-economic benefits by combining quantitative and qualitative methods. This approach allows for broad-reaching results and a deeper understanding. Given the contradictions between this study's results and previous research on the impact of extra travel time and exploration stage challenges, future studies should explore whether these factors influence other sample groups. Identifying additional factors influencing the relationship between economic compensation & non-economic benefits and willingness to participate in crowdsourced delivery is essential for creating efficient systems.

Managerial implications. The escalating volume of home-delivered parcels places considerable strain on delivery services, necessitating more efficient and environmentally friendly last-mile delivery solutions. Crowdsourced delivery presents an opportunity for industry managers to implement a novel strategy. However, the success of crowdsourced delivery hinges on the active participation of non-professional delivery drivers. The findings of this research underscore the pivotal role of economic compensation & non-economic benefits in convincing individuals to engage in crowdsourced delivery. Now armed with the knowledge that a positive relationship exists; delivery service managers need to take strategic steps to offer suitable economic compensation & non-economic benefits. The initial step involves managers understanding the specific compensation expectations of potential participants, which may vary across industries, countries, and even regions within a country due to distinct circumstances such as population density, infrastructure, and public transport availability. This information enables the provision of competitive compensation that attracts and retains participants. To maintain participant motivation and satisfaction, managers should regularly review and adjust compensation based on factors like demand, distance, and time. Establishing a clear and transparent payment structure is equally crucial. Participants should have a comprehensive understanding of how their rewards are calculated and when they can expect to receive them. Transparent processes and clear guidelines foster trust and fairness, encouraging more people to join. Moreover, effective communication channels must be established. Managers should maintain regular communication with participants in the crowdsourced delivery system, keeping them informed about changes, updates, and other opportunities within the system. Clear and timely communication builds trust and keeps participants engaged in the process.

Lastly, implementing a monitoring and evaluation program is crucial. Managers should continuously assess the effectiveness of their compensation and benefits strategies by tracking participant satisfaction, performance metrics, and retention rates. Regular monitoring enables managers to identify areas for improvement and make necessary adjustments, optimizing the success of the program through ongoing evaluation. It's noteworthy that this study's results indicate that extra travel time and exploration stage challenges do not have an impact on the positive relationship between economic compensation & non-economic benefits and the willingness to participate in crowdsourced delivery. While this research did not delve into the specific factors influencing this relationship, it highlights the potential for future research to explore and understand these factors, facilitating adaptability and responsiveness in this evolving field.

Originality of the paper. In the contemporary landscape, the last-mile delivery segment presents a formidable challenge for business-to-consumer e-commerce. With the surge in online purchases, retailers face mounting pressure to execute rapid and high-quality deliveries to meet customer demands (Devari et al., 2017). However, the growing fleet of

delivery vehicles required for these services contributes to millions of tonnes of CO₂ emissions, a concerning trend that shows no signs of abating (Hartlief & De Leth, 2021). In response to these environmental concerns, the significance of green delivery systems, such as crowdsourced delivery, is on the rise. This research aimed to ascertain whether a positive relationship exists between economic compensation & non-economic benefits and the willingness to participate in crowdsourced delivery. Additionally, the study explored the potential moderating effects of extra travel time and exploration stage challenges on the relationship.

Based on the results of a cross-sectional quantitative study on economic compensation & non-economic benefits, and the willingness to participate in crowdsourced delivery, it can be concluded that, in this research, a significant positive relationship exists. Nevertheless, in this research, extra travel time and exploration stage challenges do not influence this positive relationship. This research added to the body of knowledge on the above-mentioned relationship and supported those studies that found this relationship. The results show that there are opportunities for delivery services and their managers to respond to these confirmed facts, allowing them to implement this green delivery method effectively. First of all, this leads to a lower number of freight delivery vehicles in (sub)urban areas, thereby benefiting society. Next, it supports firms saving money on delivery, while still providing the same level of service. This innovative design also allows for social collaboration, allowing non-professionals to participate in last-mile delivery strategies and contribute to a community effort that could result in a more sustainable neighborhood (Pourrahmani & Jaller, 2021). By offering the right amount of economic compensation & the desired non economic benefits, the number of people participating in crowdsourced delivery will increase, resulting in a more economical and environmentally friendly system that ultimately raises everyone's quality of life.

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Managing critical raw materials in energy transitioning supply chains: a Resource Dependence theoretical perspective on supply chain management capabilities

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Abstract

Critical Raw Materials (CRMs) are of pivotal importance for the green energy transition, and their demand is generally forecasted to hugely increase over the next decades. Sourcing of CRMs is a pressing issue which is going to highly influence supply chain (SC) management strategies of involved firms in the next years, as the security of this supply is threatened by several geopolitical and business factors. In this scenario, we decided to study which are the SC managerial capabilities and the associated actionable levers and strategic responses that SC managers should adopt to deal with the supply of CRMs. Leveraging on the Resource Dependence Theory (RDT), we envisioned a three-levels theoretical framework by linking SC managerial capabilities with levers and strategies from the RDT. We built several configurations, called scenarios, and adopted an experimental design which implements a vignette-based rank-ordered logit model to assess which are the capabilities whose variation has a greater influence on the SC control over CRMs supply. Our research is based on a survey administered to Italian SC managers which deal with CRMs in their operations. Results will benefit from revealed and unrevealed preferences of SC managers. The former identify the most suitable SC management capabilities in the CRM supply context, while the latter provide the strategic responses and actionable levers most suited to respond to the phenomenon of interest.

Key words: critical raw materials; resource dependence theory; energy transition; supply chain; capabilities; vignette-base method

Framing of the research. *The issue of Natural Resource Scarcity (NRS) is increasingly concerning globally, impacting businesses across various levels. NRS can manifest locally or globally, affecting both non-renewable resources like coal, oil, and minerals, as well as renewable ones such as water, wood, and agricultural products (Bell et al., 2012). Within this framework, the transition towards clean energy is instigating a significant revolution, redirecting resource requirements from traditional internal combustion engines powered by coal, gas, and oil to critical raw materials (CRMs) like lithium, nickel, and cobalt, pivotal in clean energy technologies. Forecasts indicate that the demand for CRMs is projected to quadruple by 2040 to support the clean energy transition technologies (IEA, 2021). However, this trajectory poses the risk of slowdowns due to challenges in CRMs supply unless specific issues are addressed: diversifying supply chains to mitigate reliance on a single source, unlocking technological potential, and ensuring sustainability and responsible sourcing (IEA, 2021). As a matter of fact, in recent years, there has been a significant surge in research focusing on Supply Chain (SC) security, with scholars becoming increasingly concerned about various CRMs supply issues (Liu et al., 2024). Of particular concern is the security of CRMs supply, especially with the advancement of new green energy technologies. This concern stems from the potential impact of geopolitics, trade barriers, and unilateral actions on critical mineral supply chains worldwide. In this context, the development of new tools for SC managers which could lead to the minimization of natural resource consumption, waste, and pollution in SC management “appears to be a strategic priority for improving both competitiveness and environmental performance” (Kabongo and Boiral, 2017). Moreover, the uncertainty that arises in supplying CRMs also requires the ability to adapt quickly and effectively to changes in customer and competitive demands (Yusuf et al., 2014). To the best of our knowledge, there’s only the above-*

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cited study from Kabongo and Boiral (2017) which tries to link organizational capabilities and eco-efficiency, arguing that organizational capabilities represent a valuable contribution in improving organizations' resource optimization and competitive advantage.

Therefore, we decided to develop the understanding of the managerial capabilities, strategic responses, and actionable levers that SC managers may adopt to deal with the supply of CRMs. In doing so, we leverage on the Resource Dependence Theory (RDT) as theoretical framing of the research. RDT posits that organizations live in networks of interdependent actors from a resource point of view, and leverage on their power relations to achieve control over scarce resources (Pfeffer & Salancik, 1978). Organizations rely on resources sourced from a multitude of entities, each with its own distinct perspectives and interests, which influence the strategic choices of the firm (Oliver, 1991). This theoretical perspective is particularly useful in our setting, as CRMs supply was born and develops ever more in a context of heightened complexity and interconnectedness of global supply chains (Liu et al., 2024).

We carried out a profound review of the SC management literature to define the **SC management capabilities** that could be used in our conceptual model. According to a review of strategic capabilities in SC (Vishnu et al., 2019), the SC management capabilities in **Table 1** were taken into consideration.

Table 1: SC management capabilities

Capability	Description	References
Flexibility	The ability to cop up with predictable fluctuations in terms of time, volume, mix, price, product, etc. It describes the ability of the supply chain to change or react to environmental uncertainty, to meet the increasing variety of customer expectations without excessive costs, time, organizational disruptions, or performance losses	Vickery et al., 1999; Wang et al., 2016; Manders et al., 2017; Seebacher and Winkler, 2015
Resilience	It enables organizations to react and recover from disturbances and safeguard the substantial stability of their processes within acceptable times and costs	Ribeiro and Barbosa-Povoa, 2018; Chen et al., 2017; Azevedo et al., 2008
Agility	It refers to the reaction time of companies to changes in market conditions and specifically to the speed of response to perturbations	Manders et al., 2017; Christopher, 2000; Lee, 2004
Sustainability	It indicates the management of the supply chain and the collaboration among firms to pursue the goals of the three dimensions of sustainable development: economic, environmental, and social	Seuring and Muller, 2008; Sarkis et al., 2011; Choudary and Sangwan, 2021
Reliability	The ability of the system to substantially maintain its operations in case certain disturbances occur. It reduces the probability of serious alterations to the production system, the related consequences, and the time to return to its expected productivity	Chen et al., 2017; Snyder, 2003; Miao et al., 2009
Efficiency	The ability to economically exploit the potential of the supply chain by reducing procurement costs, lead times, packaging, transportation and inventory costs, and the time devoted to contract management	Kristal et al., 2010; Beamon, 1999

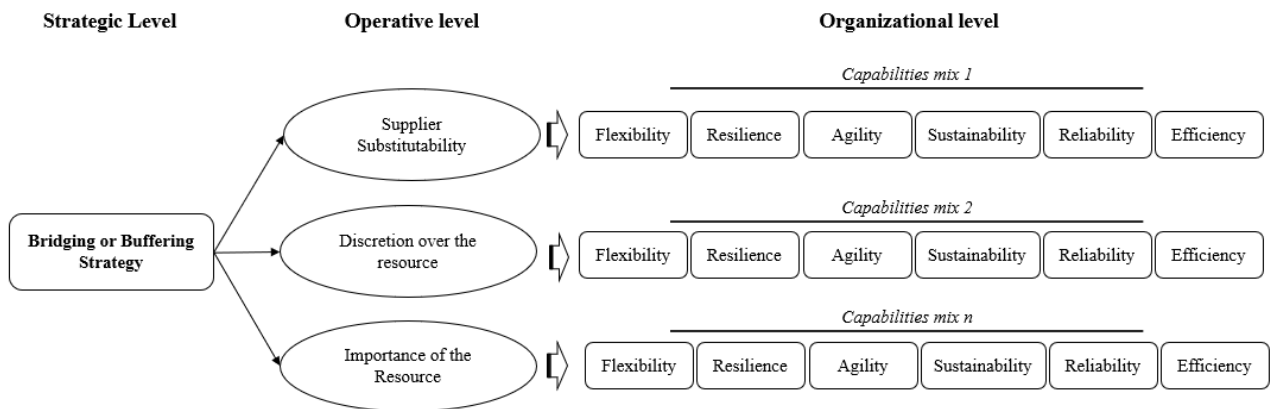
To identify the **actionable levers** and the **strategic responses** to achieve stability and control over CRMs supply, we leveraged on the RDT (Pfeffer & Salancik, 1978; Caniels & Gelderman, 2007; Kalaitzi et al., 2018). The levers that the RDT foresees are the followings:

- **Importance of the Resource (IR):** It encompasses the actions a company can take to reduce the impact from price fluctuations and ensure a continuous flow of material, especially in times of shortage. These actions become increasingly critical in situations of high price volatility and reduction in market supply.
- **Supplier Substitutability (SS):** It refers to the actions aimed at increasing the sources of supply to reconfigure, as necessary, the supply chain to enable rapid and cost-effective supplier switching. The rationale of the above actions depends on the fact that in general the fewer the number of suppliers used the higher is their replacement cost.
- **Discretion over the Resource (DR):** Incorporates mimetic and adaptive actions that a company undertakes to enhance its control over scarce resources. It becomes crucial when resources face socio-political and institutional pressures, and geopolitical and legislative conditions may jeopardize resource procurement.

The two generic forms of strategic response to supply dependency issues envisioned by the RDT are buffering and bridging strategies. **Buffering strategies** involve implementing measures to manage uncertainty by establishing safeguards that shield the enterprise from the risks associated with procurement. Buffering strategies operate externally to the existing supply relationships of the enterprise, intending to reduce exposure to suppliers and mitigate potential negative consequences from disruptions. The enterprise builds slack resources to absorb shocks, such as increased inventory, flexible production processes, a surplus of suppliers, and a supply chain design that avoids dependency on individual entities. On the other hand, **bridging strategies** encompass actions to manage uncertainty through the expansion and strengthening of existing supply relationships. Bridging strategies operate internally within the enterprise's supply relationships, aiming to manage dependence on scarce resources by exerting greater influence over them. Enterprises employing bridging strategies can modify or manipulate their exchange relationships through formal or informal actions. This ranges from building trust with partner firms, investing in collaborative structures, and enhancing information exchange to vertical integration.

Figure 1 illustrates the three theoretical levels examined in this study within the realm of Supply Chain Management in CRMs contexts.

Figure 1: Theoretical framework



Purpose of the paper. This study aims to explore which are the capabilities whose variation has a greater influence on the **SC control over CRMs supply**. Thus, by analysing the preferred capabilities of a pool of supply chain managers, we could derive the most coherent action levers and their corresponding strategic directions.

The paper poses the following objectives:

- Identify strategic responses to establish a resilient business framework capable of addressing the exogenous pressures impacting procurement processes promptly;
- Uncover actionable levers for managing procurement issues, price volatility, and developing a supply chain aligned with ESG requirements;
- Define managerial capabilities necessary for leveraging these strategies and implementing appropriate responses.

Finally, we want to investigate if these results are dependent on some characteristics of the respondents, such as industry, years of experience, countries being sourced from, and CRMs treated.

Methodology. Our research is based on a primary data collection conveyed through a survey instrument, which was delivered to a sample of Italian SC managers operating in different industries and that sources CRMs from all over the world. By focusing on the SCM we will obtain a structural homogeneity that will improve the processes of statistical inference. The paper adopts a mixed methodology, mainly based on an experimental design which implements a vignette-based rank-ordered logit model (Rologit). At the same time, it beneficiaries from a complex structure where the three levels of analysis, managerial capabilities, actionable levers, and strategic responses are integrated to provide more insights through a combination of revealed and unrevealed preferences expressed by the sampled respondents.

The survey instrument used for the study couples the vignettes with a set of close-ended questions to match the preferences expressed by the respondents through the vignettes with a propensity score that may reveal which respondents' characteristics influence their preferences. Vignettes convey greater realism to the respondent compared to direct-question-based methods, as they provide situational factors that are close to an operative decision-making process (Hyman & Steiner, 1996). As our respondents are expert SC managers or buyers, posing in front of them such questions put them in a situation which is closer to their everyday activities and might result in a less-biased outcome with respect to a classical direct-question method. In order to build the vignettes, we followed the methodological steps proposed by Contini et al. (2020). This is a four-step process composed by: 1) identification of the attributes; 2) definition of the modalities of variation of the attributes; 3) construction of the scenarios; 4) measurement of the preferences from the respondents.

- 1) The attributes were identified in the six SC management capabilities described above.
- 2) The modalities of variation represent the attributes' extremes "which, according to a broad spectrum of possible degrees, could lead to polar levels of importance consumers give to each attribute" (Contini et al. 2020, p. 5). To establish them, we referred to the literature cited in defining the attributes, leading finally to a measurable proxy of the attribute that serves two goals: it is easily understandable by the respondents and it better suits the design of the survey instrument, rather than the entire definitions provided in **Table 1**. The list of attributes and their modality of variations are provided in **Table 2**.
- 3) The scenarios are textual combinations of the attributes where each of them assumes a particular weight. Given weights must be in trade-off among the different attributes in a single scenario, and among different scenarios an equilibrium should be achieved to make the choice actually challenging and thus significative. Our scenario-building was informed by the RDT's strategies and levers, by drafting each scenario in compliance with a strategy-lever matching. Thus, we built **6 different scenarios** where each one presents the combination of the 6 capabilities identified more coherent with the strategy-lever match. Scenarios are provided in **Table 3**.
- 4) Preferences were measured by asking the respondents to **order the scenarios** and to indicate the best configuration for managing supply chain criticalities when dealing with critical raw materials. Thus, they will order scenarios from the preferred one to the less preferable.

Table 2: Attributes, modalities of variation and associated weights

Attribute	Modalities of variation	Weight
<i>Flexibility</i>	Adaptation speed to changes is high	3
	Adaptation speed to changes is medium	2
	Adaptation speed to changes is low	1
<i>Resilience</i>	Material stock and suppliers back up is high	3
	Material stock and suppliers back up is medium	2
	Material stock and suppliers back up is low	1
<i>Agility</i>	Information exchange speed is high	3
	Information exchange speed is medium	2
	Information exchange speed is low	1
<i>Sustainability</i>	Ability to manage collaborations for environmental efficiency and waste reduction is high	3
	Ability to manage collaborations for environmental efficiency and waste reduction is medium	2
	Ability to manage collaborations for environmental efficiency and waste reduction is low	1
<i>Reliability</i>	Speed in reacting to supply chain shocks is high	3
	Speed in reacting to supply chain shocks is medium	2
	Speed in reacting to supply chain shocks is low	1
<i>Efficiency</i>	Ability to manage supplying and distribution costs is high	3
	Ability to manage supplying and distribution costs is medium	2
	Ability to manage supplying and distribution costs is low	1

The survey was organized into three sections: 1) an introductory section where, after the explanation of the aims of the study, respondents were asked to answer profiling questions regarding their job position, their company's size, revenues and industry, the CRMs they deal with in their operations and the countries they source from; 2) the vignette section and their ranking; 3) three final questions covering initiatives to develop the three levers (IR, SS, DR).

Table 3: scenarios constructed in the vignette-based method

Scenario	Attributes and relative weights in each scenario
<i>A</i>	Adaptation speed to changes is high (3) Material stock and suppliers back up is high (3) Information exchange speed is low (1) Ability to manage collaborations for environmental efficiency and waste reduction is low (1) Speed in reacting to supply chain shocks is medium (2) Ability to manage supplying and distribution costs is low (1)
<i>B</i>	Adaptation speed to changes is high (3) Material stock and suppliers back up is medium (2) Information exchange speed is low (1) Ability to manage collaborations for environmental efficiency and waste reduction is medium (2) Speed in reacting to supply chain shocks is low (1) Ability to manage supplying and distribution costs is low (1)
<i>C</i>	Adaptation speed to changes is low (1) Material stock and suppliers back up is medium (2) Information exchange speed is high (3) Ability to manage collaborations for environmental efficiency and waste reduction is medium (2) Speed in reacting to supply chain shocks is medium (2) Ability to manage supplying and distribution costs is low (1)
<i>D</i>	Adaptation speed to changes is medium (2) Material stock and suppliers back up is low (1) Information exchange speed is medium (2) Ability to manage collaborations for environmental efficiency and waste reduction is high (3) Speed in reacting to supply chain shocks is low (1) Ability to manage supplying and distribution costs is low (1)
<i>E</i>	Adaptation speed to changes is low (1) Material stock and suppliers back up is medium (2) Information exchange speed is low (1) Ability to manage collaborations for environmental efficiency and waste reduction is low (1) Speed in reacting to supply chain shocks is high (3) Ability to manage supplying and distribution costs is medium (2)
<i>F</i>	Adaptation speed to changes is medium (2) Material stock and suppliers back up is low (1) Information exchange speed is low (1) Ability to manage collaborations for environmental efficiency and waste reduction is medium (2) Speed in reacting to supply chain shocks is medium (2) Ability to manage supplying and distribution costs is high (3)

As this paper is an ongoing project, data analysis is still to be performed upon the conclusion of the data collection phase. However, a rank-ordered logistic regression model will be performed to test which capabilities have a greater effect on SC control over CRMs supply. Unlike simply identifying the preferred alternative, the model provides the expression of the individual's preferences in terms of willingness to leverage each capability to overcome supply chain management criticalities.

In our study, we utilized individual rankings as the dependent variable to express preferences in terms of capabilities to manage CRMs supply. The rologit model is constructed based on a random utility model, where respondents rank multiple alternatives or vignettes (Contini et al., 2020), with m representing the number of alternatives (in our case, $m=6$). Each ranked alternative or vignette serves as an observation.

The utility obtained from each alternative ($j = 1, \dots, m$) is determined by:

$$U_j = b_{0,j} + b_{1,j} X_1 + \dots + b_{k,j} X_k + \epsilon_k$$

X_1 through X_k denote the explanatory variables, representing the variations in attributes. The coefficients $b_{0,j}, b_{1,j}, \dots, b_{k,j}$ express the significance and the weight of each capability to maximize the "utility" of our SC managers sample, while ϵ represents the error terms.

Results. As this is an ongoing project, where the data collection phase is still ongoing, results are yet to come. However, expected results of the data analysis foresee to benefit both from revealed and unrevealed preferences of the sample of SC managers. Particularly, revealed preferences are intended to identify the most suitable SC management capabilities in the CRM supply context, i.e. the capabilities whose variation in the scenarios presented affects the outcome (SC control over CRMs supply) the most. At the same time, given that we constructed the scenarios based on the RDT's construct of strategic responses and actionable levers, the scenarios' ranking will provide us also with unrevealed preferences regarding which strategic responses and actionable levers are most suited to respond to the phenomenon of interest. Finally, the results of the propensity score matching are envisioned to show if the above results are sensitive to the variation of the respondents' characteristics. In particular, we expect to obtain different revealed and unrevealed preferences of SC managers depending on their company's industry, size, CRMs treated, and countries sourced from, given that these attributes have the potential to greatly influence the SC landscape and therefore the preferred ways to accomplish the CRMs supply issues.

Research limitations. This research has some limitations which must be acknowledged. The first concerns the ranking process of the vignette method which is not an easy task to be accomplished given the number of scenarios involved (6) and the different attributes in each of them (6 as well) to be taken into account simultaneously. Even if we selected a very specific and expert audience of SC managers, we cannot be sure that they rigorously evaluated all the options, and we must take into account the risk of some random answers. Secondly, our choice of the management capabilities had to be limited to a restricted number to ensure the proper functionality of the questionnaire. This could have left out some other important capabilities, given that the entire list of SC management capabilities discussed in literature is potentially endless. However, we selected the most implemented and listed in the literature by trying to choose at the same time capabilities distant one from the other, in order to diminish the ambiguities that managers could face in confronting them. Thirdly, the construction of scenarios, even if based on a matching with RDT's strategies and levers, could have been influenced by the biased judgement of the authors related to what scenarios appeared as best to be included in the study. Lastly, the study has been conducted with a sample of Italian SC managers. Future studies should address a larger and geographically wider sample of respondents to improve the generalizability of the conclusions.

Managerial implications. This paper provides managers with important and fruitful implications to tackle a complex and challenging supply such as the supply of CRMs. As a matter of fact, the insights regarding capabilities could be directly transferred into training activities to be focused on the capabilities that this study will reveal as most important to control CRMs supply. Moreover, practical actions to leverage upon the strategies and the actionable levers from the RDT that our study has revealed as most appropriate in the context of CRMs supply should be implemented by SC managers. We believe that our paper could enable and strengthen a national dialogue on CRMs and the management of their supply chains, aiming to foster a reasonable awareness of the situation and prompt economic and government operators to consider the risks associated with the supply of such materials, along with the related geopolitical risks and the possibility of not meeting the timelines of the net-zero transition, with all its potential consequences.

Originality of the paper. Our paper is highly original in most of its components. The contextual framing on CRMs is lacking management literature that explores its characteristics, particularly in relation with SC issues (Liu et al., 2024). The theoretical background adopted borrows strategies and levers from the RDT and capabilities from the various literature on SC risk management: we thus believe our study to represent a "substantive use" of the RDT in the field of SC management, responding to the call of Wry et al. (2013) to substantially engage with RDT's concepts. Finally, the adopted methodology based on the vignette method, is less commonly used in management studies but proves insightful for understanding respondents' preferences. Vignettes are designed to present a series of situational or contextual factors and prompt respondents to evaluate alternative scenarios (Hyman & Steiner, 1996, p.1). By assessing and ranking scenarios, respondents provide information on the relative importance assigned to each attribute comprising the scenarios themselves (Wason et al., 2002). Based on our model construction, this methodology offers a dual innovative contribution. From a more linear perspective, it identifies the capabilities evaluated as preferable by supply chain

managers. However, we also obtain undisclosed information inherent in the designed framework, enabling the identification of strategic levels most aligned with the chosen capabilities. This result can be valuable for understanding whether companies are investing in developing competencies in line with their strategic settings or exploring alternatives, suggesting a strategic direction that maximizes the preferred competency structure.

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Track 13 Sustainability

The rebound effect of responsible consumption: an explorative research on sharing economy consumers

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Abstract

It is commonly believed that the sharing economy (SE), the economic system based on the sharing of goods and services, promotes sustainable consumption. However, the spread of this practice and digital technologies, have opened a debate on the possible negative effects of the SE, questioning its role as a facilitator of sustainability. According to many authors, the cost savings and convenience of this new sharing practice generates the so-called “rebound effect”, i.e. an increased demand for products and services. Given the scarcity of studies about this within the domain of the SE, the present research aims to shed light on the rebound effects that are associable with the SE, focusing on the household level. A qualitative empirical analysis will be performed through the focus group methodology, involving active users of SE from different industries (e.g., food, goods, mobility). The goal is to understand what are the typologies of rebound effects that could be associated with the use of SE services and provide a framework to classify and measure them.

Key words: sharing economy; collaborative consumption; rebound effect; moral licensing theory; qualitative research.

Framing of the research. Globalization and rapid technological developments have contributed to the emergence of a new economic system - the sharing economy (SE) (Araújo, 2021). Since the turn of the millennium, SE has become increasingly relevant (Belezas & Daniel, 2023). Defining the concept of a SE is complicated as SE practices are varied and constantly evolving (Hossain, 2020). Munoz and Cohen (2017, p 21) define SE as “a socioeconomic system that enables an intermediate set of exchanges of goods and services between individuals and organisations that aim to increase the efficiency and optimisation of underutilised resources in society”. SE is a phenomenon in which people participate in a range of activities, including bartering, lending, renting, trading, exchanging and transporting (Möhlmann, 2015; Heo, 2016). Companies in the SE capture inactive resources (Frey et al., 2019) that are then shared or redistributed by consumers (Belezas & Daniel, 2023). The recirculation or redistribution of inactive resources allows people to launch new services or activities and enter new markets (Bernardi & Diamantini, 2018). Therefore, SE is a disruptive innovation that challenges traditional business models (Cohen & Kietzmann, 2014). In this redistribution of inactive resources, consumers exchange or share goods that would otherwise be discarded or left inactive, unused or underused (Martin, 2016; Frenken & Schor, 2017). The SE has always been seen as a sustainable model of production and consumption (Codagnone et al., 2016), as a promising path towards sustainable consumption (Meshulam et al., 2022). It is a post-property economy, where modern consumers value access to services more than ownership (Gazzola et al., 2021). By facilitating access to goods rather than their ownership, it is argued that net consumption is reduced (Belk, 2014; Seegebarth et al., 2016), reducing net production and improving material efficiency (Pouri, 2021; Meshulam et al., 2022), as well as providing other economic and social benefits (Hamari et al., 2016; Acquier et al., 2017; Laukkanen & Tura, 2020; Gazzola et al., 2021). This could reduce resource use and greenhouse gas emissions (Cherry & Pidgeon, 2018). Although sharing practices may exist in non-technological contexts, technology and platform mediation are crucial components of the ES phenomenon (Belezas & Daniel, 2023).

This new pattern of consumption is profoundly changing consumer behaviour (Pushmann & Alt, 2016). Individuals around the world are beginning to rent, lend, trade, give away and share resources on an unprecedented scale (McAlpine, 2014). The SE enables individuals, organisations and societies to shape the way they live, connect and sustain themselves (Cheng, 2016), as it influences consumption habits by reducing ownership (de Leeuw & Gössling, 2016). Sensitivity towards a more sustainable lifestyle often emerges as one of the prerogatives of sharing users (Khan et al., 2020; Serrano et al., 2021). However, it also emerges that, in some contexts, sustainability is more of a positive side effect than a main topic (Hartl et al., 2018). The motivations that may drive consumers to adopt the SE can be diverse (Davidson et al., 2018). In addition to sustainability, consumers may be driven by economic motivation, which is often complemented by non-

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economic drivers such as social relationships (Lee & Wong, 2021), social projection (Jain & Mishra, 2020), entertainment (Tsai et al., 2021) and anti-consumerism (Ek Styv-en & Mariani, 2020). Intention towards the SE is determined by individual characteristics and in particular age, environmental consciousness (Aguilera-Garcia et al., 2021; Hinojo et al., 2022), Internet and social network use (Hinojo et al., 2022). Enjoyment and economic benefits emerge as the key elements of satisfaction (Tussyadiah, 2016; Santoso & Nelloh, 2017).

However, the enthusiasm for this access-based pattern of consumption goes along with the awareness about the “dark side” of the SE (Curtis & Mont, 2020). From a social perspective, the spread of the SE may indeed generate discrimination (Malik & Wahaj, 2019), misbehaviour (Lambea, 2017), privacy issues (Lutz et al., 2018). In the context of tourism, SE services can generate overcrowding in cities, which could lead to the occurrence of non-civic behaviour such as noise, vandalism and violence (Lambea, 2017). The SE may also generate discrimination that may occur through sharing platforms (Edelman et al., 2017; Piracha et al., 2019): some social groups, such as the poor or elderly, may be excluded because they do not possess the necessary skills in the technological domain (Malik & Wahaj, 2019). Among the social impacts, there is also growing concern about data protection and personal privacy among users of sharing platforms (Lutz et al., 2018). From an economic perspective, the spread of the SE could generate an increase in the prices of other products and the demand for goods (e.g., clothing) and services (e.g., tourism); the increase in net consumption generates negative economic, social and environmental impacts (Retamal, 2017; Ma et al., 2018). In the context of tourism, for example, SE can generate gentrification and overcrowding in cities, leading to higher rental and property prices (Wachsmuth & Weisler, 2018). In addition to social and economic impacts, the environmental impacts of the SE are particularly discussed. Increased procurement may cause increased environmental pressures and resource exploitation (Tussyadiah & Pesonen, 2016; Hossain, 2020).

A specific typology of negative (and unwanted) effect is referred to as the “rebound effect”. The rebound effect was formalised in the aftermath of the energy crisis and thus became initially widespread in the energy economy (Meshulam et al., 2022; Vélez, 2023). Dütschke et al. (2018), in the context of energy conservation, state that the rebound effect occurs when an individual increases consumption of a good or service as a result of an increase in its efficiency: when the unit price of a good or service decreases due to an improvement in efficiency, people demand more of it. By increasing the demand for resources, rebound effects can be seen as a kind of negative spill over (Dütschke et al., 2018). According to Pouri (2021), the rebound effect occurs when greater resource efficiency is followed by an increase in demand, which consequently exceeds efficiencies. The rebound effect can be direct, when it occurs within the same system of resources or services, or indirect, when it occurs outside the same system of resources or services; in this case, the savings (including time and money) obtained from consuming an efficient service are spent on other consumption. From an economic point of view, therefore, the rebound effect is explained by the price savings due to improved efficiency that stimulates demand, leading to higher overall consumption (Meshulam et al., 2022). In addition to having economic foundations, the rebound effect also has psychological foundations. From this last point of view, the rebound effect could be explained by the theory of moral licence, i.e. the cognitive process through which individuals justify immoral behaviour by having previously engaged in moral behaviour, in the same or another domain (Dütschke et al., 2018). In other words, previous good deeds can make individuals free to behave immorally (Monin & Miller, 2001; Merritt et al., 2010). After remembering a previous good deed or performing one, individuals perceive that have permission to behave immorally or to engage in a dubious action (e.g., morally questionable behaviour) without fear of discrediting oneself (Blanken et al., 2015). According to Ottelin et al., (2017), the rebound effect can be analysed at two different levels: household level (micro-rebound) and economy wide (macro-rebound). While the latter refers to price reductions and transformational effects, the former are less challenging research objects, and they can be more easily captured.

In the SE domain, scholars focused their attention on the link between SE and sustainability, identifying the rebound effect as the increased consumption due to the exponential growth of sharing services which leads to a higher consumption, severely limiting the environmental benefits of the SE (Kurusu et al., 2021; Meshulam et al., 2022). This seems to happen mostly when consumers are not driven by environmental concerns, yet by economic and hedonistic reasons or for the accessibility offered by digital platforms. In the absence of pro-environmental awareness, the consumer is likely to spend the money saved to purchase other goods or services with a high environmental impact (Merino-Saum et al., 2023).

Despite the strong association between the two topics, the literature on SE and the rebound effect is not very extensive (Henry et al., 2021). Most of the studies deal with the negative environmental effects of SE, consider different sectors: Warmington-Lundström and Laurenti (2020) study online boat sharing; Makov and Font Vivanco (2018) study smartphone reuse; Wood et al. (2018) study the fashion industry, Meshulam et al. (2022) study the food industry. Therefore, most studies have focused on environmental rebound effects, taking little account of other undesirable effects of the SE (e.g. social, economic).

Purpose of the paper. A review of the literature shows that the SE is often associated with sustainable consumption (Curtis et al., 2019; Meshulam et al., 2022; Pérez-Pérez et al., 2023). However, in recent times, negative effects of this purchasing mode, such as the rebound effect, have been highlighted (Meshulam et al., 2022). The literature on SE and the rebound effect is not very extensive (Henry et al., 2021). There are few studies on the topic and all are recent (e.g. Warmington-Lundström & Laurenti, 2020; Pouri, 2021; Meshulam et al., 2022; Merino-Saum et al., 2023). Above all, the literature to date has often focused only on the environmental rebound effects of SE, but additional negative and rebound effects (e.g. social and economic) could be considered. It would thus seem that interest in the topic is raising in recent years, as a result of an increase in sharing practices. Basing on this premises, the purpose of this research is to shed light on the rebound effects that are associable with the SE, focusing on the household level. This emerges as a gap

in the stream of research about SE and consumer behaviour, that is currently receiving great attention, and for which extended knowledge has been called for (Grieco & Palagonia, 2024). Yet, despite some sparse efforts (e.g., Parguel et al., 2017), an investigation on the possible micro-rebound effect is currently missing. To meet this goal, the research aims to analyse extant literature and integrate it with a qualitative empirical investigation in order to answer the following research questions:

- (i) What are the typologies of rebound effects that could be associated with the use of SE services?
- (ii) How can they be framed and classified (e.g., industry, area of impact, direct/indirect, intensity)?
- (iii) How can they be captured and measured?

Methodology. Consistently with the purpose of the research and the nature of the research questions, an exploratory qualitative study has been considered the most suited approach. In particular, the qualitative focus group methodology was chosen. A focus group is, according to Lederman (1990), “a technique involving the use of in-depth group interviews in which participants are selected because they are a purposive, although not necessarily representative, sampling of a specific population, this group being ‘focused’ on a given topic”. Focus group participants are selected on the basis of having something to say on the topic (Rabiee, 2004). This technique for data collection allows to seize the tacit aspects and the subconscious influences of habitual practices because of the confrontational aspect that would risk being missed in the more traditional setting of individual interviews (Maréchal & Holzemer, 2018).

A series of focus group will then be conducted to better understand the rebound effect associable with the adoption of SE services. The number of participants will be defined taking into consideration the need to allow for emulation and for sufficiently long speaking time for participants (Muylaert et al., 2024). Thus, despite it will hamper representativity and generalization, small groups will be involved in the research. The participants will be selected ensuring their knowledge and use of SE platforms, across different typologies of shareable goods and services, that might lead to different types of effects (Pouri, 2021). Selecting participants with different usage habits will allow to identify those effects that pertain to the SE in general and those that are referable to specific sectors (e.g., fashion, food, mobility).

To ensure full understanding by participants, the topic of the research will be explained before starting the focus group. During the focus group, it would be necessary to investigate the consumer’s adoption of moral behaviour (buying through the SE) and to understand what values drive this choice (e.g., sustainability). The literature suggests that the rebound effect occurs when consumers do not approach the SE for environmental values, but for other reasons (e.g., low price) (Warmington-Lundström and Laurenti, 2020; Pouri, 2021). It would also be necessary to understand the amount of SE products purchased or the number of purchases in other categories to understand the presence or absence of a rebound effect (direct or indirect).

The focus groups will be divided into three main parts. In the first one, participants approach and use to the SE will be deepened, also collecting their impressions and consideration about this consumption practice. In the second, the possible negative effects will be explored, driving participants to reflect upon the side behavior they might adopt, consistently with the definition of rebound effect. In a third part possible proxies to capture and measure these effects will be discussed. If possible, the focus group will be conducted on site, and it will foresee moments with the overall group of participants and moments with sub-groups of users divided according to the specific industry they are more experienced of.

The analysis of the data collected through the focus groups and their interpretation will follow Krueger’s (1994) approach, which provides a series of clear steps to deal with the large quantity and complex nature of qualitative data. Each focus group will be recorded and transcribed in all of its parts, including the opening statements, the breaks, the guidelines. The transcripts will then be content analyzed through the use of codes that will be inductively derived from the collected data.

Results. As the research is ongoing, there are no results to be reported yet. Expected results include the identification and classification of possible rebound effect at consumer level that could be associated to the use of the SE within different industries. This would also allow to understand possible ways to measure these effects.

Research limitations. So far, the main limitations are referable to the proper identification of the boundaries of the research. In fact, the rebound effect needs to be clearly framed, especially against similar concepts such as spillovers, backfire, boomerang, reactance. A second area of severe limitation can be identified concerning the development of the focus group. This is because the object of the analysis pertains to behaviors participants might not be fully aware of, whose connection with the use of the SE needs to be precisely understood. Finally, concerning the focus group, the goal to identify the proxies to measure this effect could be hampered by the ability of participants to understand the task and the ability to the moderator to conduct the focus group. More widely, the qualitative investigations lack the possibility to generalize and compare achieved results due to the small number of involved people, thus more research will be necessary to confirm any findings, also from a quantitative point of view.

Managerial implications. For business managers, it might be relevant to understand consumer behaviour in relation to SE and the negative effects these behaviours might generate. Managers will also be able to measure the negative effects of the SE. In this way, it might be easier for managers to rethink their actions to limit and address the negative effects. Managers, noting consumer behaviour, might think, for instance, about acting internally to improve the business model and avoid rebound effects. Furthermore, managers might think about educating consumers on the correct use of SE. All this might be necessary to ensure that SE continues to be associated with sustainable consumption. This is also necessary

because among the reasons for consumer adoption of the SE is sustainability; if, in the future, consumers realise that it may be unsustainable, the SE companies may suffer possible negative consequences (e.g., loss of consumer trust).

Originality of the paper. The research adds on the sub-field of research about SE consumers, for which more research is needed, even more concerning the end-users of SE platforms. It focuses on the so-called dark side of the SE, that is underdeveloped, and it raises the issue of rebound effects that happen at consumer level. In this way it aims to fill a gap that emerge in the literature, proposing the exploration of a topic whose deepening could benefit both scholars and managers.

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Greenwashing Temptation: A Critical Examination of the Legal Approach against Greenwashing

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Abstract

The role of green communication is pivotal today to demonstrate the company's commitment to sustainability. Corporate green communication is correlated to several positive effects which ultimately improve the firm's financial performance. However, all these benefits can be also attained by engaging in greenwashing. Following the recent conceptualization of CSR as a form of regulation incorporating voluntary and mandatory norms (Sheehy, 2015), current greenwashing literature emphasises the need to extend regulation about green communication as a solution to reduce greenwashing (legal approach). In line with this approach, political actors and governments are introducing regulations against greenwashing occurrences. By combining the self-love concept (Rocha & Ghoshal, 2006) with the phenomenon of greenwashing, this conceptual paper challenges the legal approach against greenwashing as the only solution to counteract the phenomenon. A new concept emerges from the conceptual analysis: the Greenwashing Temptation (GT). The GT concept allows to understand that not only greenwashing is a phenomenon embedded in the profit-driven principle, but also the legal approach to counteract greenwashing implicitly assumes the supremacy of the profit-driven motivation. Based on a discussion about the effects of anti-greenwashing regulations on the GT, we propose here a different avenue that could discourage greenwashing by challenging its foundational reason. Instead of creating financial disincentives, we call for the urgency of promoting ethical thinking in management and marketing studies.

Key words: Greenwashing; Profit-driven principle; Business Ethics; Mandatory CSR, Green Marketing

Framing of the research. Businesses today face a growing pressure from regulatory bodies and civil society to embrace eco-friendly practices to mitigate their ecological footprint (Jiang et al., 2023). Within this scenario, the role of green marketing and communication is pivotal to demonstrate a company's commitment to sustainable practices. In the current era of eco-capitalism, green marketing is becoming a central topic in marketing studies (Groening et al., 2018) and the megatrend of sustainable consumption is critical to understand consumers today, especially Generation Z (Borah et al., 2024).

Initiatives related to Corporate Social Responsibility (CSR) and green communication are emerging as critical sources of corporate legitimacy (Seele & Gatti, 2017). Corporate legitimacy in turn is correlated to several business advantages which may ultimately improve the financial performance of a company (Deephhouse, 1999). Research also suggests that corporate green communication positively affect corporate reputation (Baum, 2012), consumers' purchase intentions and behaviours (Borah et al., 2024; Dekhili & Achabou, 2013; Spack et al., 2012) and their willingness to pay (Laroche et al., 2001), customer satisfaction and positive word-of-mouth (Gasbarro & Bonera, 2021).

However, all these benefits can be also attained by engaging in greenwashing, that is a form of "cosmetic communication" (Vollero, 2013, p.4). Indeed, green communication may improve firms' reputation and performance regardless of the actual company's green conduct (Seele & Gatti, 2017). This is why an increasing number of organizations today are "not walking the talk" (Walker & Wan, 2012), meaning they engage in greenwashing.

Over the last decades, the practice has grown enormously, and the techniques to greenwash are increasingly sophisticated (Gatti et al., 2019). The frequency of greenwashing-related scandals, the potential damages for organisations truly committed to the ecological transition, the high profile of the companies involved, and the effect on scepticism that greenwashing has on stakeholders' perceptions highlight the need for a comprehensive understanding of the phenomenon. In particular, it is essential to find how to detect and prevent this unethical practice (Montgomery et al., 2023).

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To provide a deep understanding of the phenomenon and its implications, marketing and management scholars are increasingly addressing the topic in their studies. The academic literature related to greenwashing is currently booming, with more than 3.393 articles retrieved from ABI/Inform ProQuest database mentioning “greenwashing” or “greenwash”⁴. A longitudinal analysis of publications about greenwashing shows a constant increase in scholarly articles. In particular, from 2008 there has been a significant growth of papers on the topic (Gatti et al., 2019). The recent Montgomery et al. (2023)’s literature review reveals the ongoing interest in this area of research, with about 50 management papers about greenwashing in 2005, 100 in 2011 and more than 500 in 2021.

Greenwashing-related research has extensively discussed definitions of the concept, as well as several classifications of greenwashing typologies and techniques. Drivers and consequences of greenwashing have been also addressed in literature (e.g. Vollero, 2013), with several empirical studies measuring greenwashing effects on stakeholders, especially in B2C contexts (Gatti et al., 2019; Montgomery et al, 2023).

However, as claimed by Montgomery et al (2023), there is an urgent need to gain insight into how to prevent or disincentivize the practice. Following the recent conceptualization of CSR as a form of regulation incorporating voluntary and mandatory norms (Sheehy, 2015), some scholars emphasise the need to extend regulation about green communication as a solution to reduce greenwashing (e.g. Delmas & Burbano, 2011). In line with this approach, political actors and governments are introducing regulations against greenwashing occurrences (e.g. Guides for the Use of Environmental Marketing Claims (Green Guides) in US, the French Climate and Resilience Law (2023), The Greenwashing Law Council of Australia (2023)). The next chapter discusses the legal approach to counteract greenwashing, presenting the status-quo of EU regulations against greenwashing.

The legal approach to counteract greenwashing. One of the most widely accepted definitions of greenwashing defines it as “disinformation disseminated by an organization so as to present an environmentally responsible public image” (Concise Oxford English Dictionary, 10th edition). Some academics consider greenwashing as synonymous with false green communication. Other scholars, however, claim that greenwashing also indicate corporate green claims lacking validation from third-party certifications. According to this perspective, greenwashing refers to “making claims that are neither substantiated by a credible third-party certification nor by evidence” (Alves, 2009). An alternative approach proposes that greenwashing is the strategic selection of positive information regarding corporate environmental characteristics or behaviors, combined with the obscuration or the minimizing of negative issues. The selective perspective looks at greenwashing as a tactic to create a favorable environmental image by avoiding the communication of unsustainable practices, while promoting the corporate engagement into pro-green activities. The discrepancy approach expands this view by considering the discrepancy between the corporate environmental performance and its communication. Therefore, this perspective assumes that engaging in greenwashing corresponds to “not walking the talk” (Walker & Wan, 2012). Regardless of the different conceptualizations and definitions discussed in literature, there is a general agreement about the association between greenwashing and disinformation. In addition, research on the field suggest that greenwashing must be intentional to be classified as such (Mitchell & Ramey, 2010). Therefore, “genuine” greenwashing is always characterized by intent (Seele & Gatti, 2017).

For years greenwashing has been discussed in literature as an ethical issue as the misleading communication happens in a legal grey zone and depends on the eye-of-the-beholder (Giesler & Veresiu, 2014; Seele & Gatti, 2017). However, following the recent new conceptualization of CSR as a legal entity (e.g. Cominetti & Seele, 2016; Gatti et al., 2019; Sheehy, 2015), greenwashing is entering the political and legal fields. The theorization of greenwashing as a legal matter has been proposed as the solution to the problem about how to reduce and disincentivize greenwashing occurrences (e.g. Delmas & Burbano, 2011).

The evolution of the CSR concept towards an integration of voluntary and mandatory aspects has affected green communication and greenwashing in several ways. Political authorities today play a critical role in influencing green practices and green communication. In particular, in relation to green communication it’s not just that governmental entities have the authority to sanction misleading environmental claims under existing corporate laws, they also increasingly dictate the timing and manner in which companies communicate their ecological initiatives. There is a clear movement towards a more active governmental participation in the realms of green disclosure. For instance, since 2014 the EU legislation requires large and publicly listed companies to regularly publish reports detailing the social and environmental challenges they face, as well as the effects of their business activities on the society and the environment. The Eu regulation has become even more strict since January 2023, with the introduction of the new Corporate Sustainability Reporting Directive (CSRD). The Directive, set to affect reports published in 2025 for the fiscal year 2024, mandates companies covered by the CSRD to adhere to the European Sustainability Reporting Standards (ESRS) developed by the European Financial Reporting Advisory Group (EFRAG).

As clarified by the aforementioned example, today companies must comply with several regulations and standards. The rules of the game are changing. Green communication, and so greenwashing, are increasingly becoming a legal issue, dealing also with accounting and law and not just with management and marketing. To understand the level of evolution of greenwashing-related jurisdictions, in the next section we briefly summarize the main norms against greenwashing developed in EU. This constitutes an example of the development of greenwashing regulations. It is important to note here that a similar trend towards a strict anti-greenwashing regulation is observable in several other countries and nations all over the world (e.g. US, Australia, UK).

⁴ Data retrieved from ABI/Inform ProQuest database. English scholarly articles. 08-03-2023.

EU regulations against greenwashing. The European Commission has developed two main proposals to address corporate greenwashing: the “Proposal for a Directive on empowering consumers for the green transition and annex” (called the Green Transition Proposal) and the “Proposal for a Directive on substantiation and communication of explicit environmental claims” (called the Green Claims Directive). By combining and revising the Unfair Commercial Practices Directive (UCPD) and the Consumer Rights Directive, The Green Transition Proposal, introduced in March 2022, emphasises and strengthens regulations concerning environmental claims. This proposal introduces new categories and instances to the list of green communication practices that are considered deceptive or misleading. This list is in line with some greenwashing categorizations discussed in marketing and management literature (de Freitas Netto et al, 2020) and reflects some of the well-known seven sins of greenwashing developed by the environmental consultancy Terrachoice (later acquired by UL) in 2007. However, what is particularly interesting here is that these categories of greenwashing are becoming a legal subject. Following the recent trend of CSR towards the inclusion of mandatory and legal aspects, greenwashing as well is entering the legal sphere.

The Green Claims Directive, published in March 2023, represents the other significant initiative of the European Commission aimed at addressing the issue of greenwashing within the EU. This directive requires companies within the EU to provide substantiate and verifiable proofs about any environmental-related claims or labels they voluntarily employ, such as “green”, “ecological”, “carbon neutral”, or “eco-friendly”. The directive also indicated one or more authoritative bodies in each EU member state to evaluate the adherence to specific green communication directives. To enforce adherence, it proposes penalties, including monetary fines, for those who fail to comply with regulations. In certain states, these penalties can amount to as much as four percent of a company’s annual total revenue.

The legal approach against greenwashing has been proposed in literature as the solution to reduce greenwashing practices. The absence of legislation and limited punitive measures, on the contrary, are considered drivers for greenwashing (Delmas & Burbano, 2011). Two main reasons support this approach. From one side legal initiatives may increase transparency and accountability of corporate green communication. The establishment of standards and regulations can act as a deterrent against greenwashing. Given the necessity to provide reliable data or evidence to support environmental claims, it becomes harder for companies to mislead the public and so to engage in greenwashing. From the other side, sanctions and fines, while providing a partial compensation to the victims of greenwashing, may also create an inhibitory effect which may discourage companies to engage in greenwashing (Sun & Zhang, 2019).

However, we suggest here that not only greenwashing seems to be favoured by the profit-driven principle, as we will discuss in the next chapter, but also the legal approach to contrast greenwashing intrinsically assumes that the only responsibility (or purpose) of business is to increase its profits. Indeed, by creating a financial incentive (or disincentive) to NOT engage in greenwashing, they assume the profit-driven principle as the most important guiding force of current decision-making processes.

The profit maximization logic behind greenwashing and the legal approach to counteract it. In order to understand how the profit-maximization logic favours the diffusion of greenwashing, we need to clarify first why firms engage in green communication.

One of the main reasons for companies to engage in green communication is to gain corporate legitimacy. Legitimacy is linked to several benefits, including enhanced access to resources, improve partnerships with other businesses, and the recruitment of a more effective and motivated workforce. According to management research, achieving corporate legitimacy can ultimately lead to better financial outcomes (Deephouse, 1999). In the current era of eco-capitalism green marketing and communication are therefore new sources of corporate legitimacy (Seele & Gatti, 2017).

However, all these benefits can be also attained by engaging in greenwashing. Following signalling theory, false or misleading environmental claims can alter stakeholder perceptions (to obtain legitimacy) for two main reasons, which must work together for greenwashing to be deemed effective. The first is the perceived benefits an organization gains by signalling a commitment to environmental issues, irrespective of the truth of such commitment. Given that green communication is positively correlated with increased perceived legitimacy, even companies with a poor environmental profile are incentivized to engage in green communication. The second reason is linked to the difficulty stakeholders have in distinguishing between authentic and merely symbolic environmental commitments. This difficulty is largely due to the information asymmetry that exists between the signaller (the company) and the receivers (its stakeholders) and the complex nature of scientific knowledge that underpins many environmental claims, making accurate interpretation by the general public challenging. Consequently, companies can misuse green communications as a way to falsely signal their commitment to the environment, thereby achieving pragmatic legitimacy. By attaining legitimacy through greenwashing, companies aim at increasing their profits. Therefore, the profit-driven principle, supported by many mainstream management theories, can be considered a driver of greenwashing, supporting the practice when it does not break the law.

What is particularly interesting, however, is that the legal approach against greenwashing, even if guided by the good intent to reduce such unethical practice, is responsible for perpetuating the same profit-driven logic. The effect of anti-greenwashing regulation goes into two directions: first it creates a cost disadvantage associated to greenwashing (fines). The existence of strict regulations increases the risk of being punished. Secondly, by regulating green communication it enhances the control on the consistency between corporate green activities and green communication. Even in this case, however, it creates a disincentive based on reducing the benefit of engaging in greenwashing. The costs of engaging in false or misleading green communication become too high compared to the financial benefit perceived by companies.

While the legal approach may indeed contribute to effectively reducing greenwashing occurrences, we suggest here that it supports the profit-driven logic and therefore, under some circumstances, it could backfire good management practices.

Therefore, instead of challenging greenwashing when it occurs or making too costly the practice, as the legal approach does, we stress the opportunity to challenge the profit-driven principle as the only motive guiding corporate decision-making processes (see also Pastore and Ugolini, 2020). As claimed in the next chapter, some best practices which challenge the profit-driven perspective have already emerged: greater attention from the enterprises to implementing environmental management practices and putting attention to social sustainability (De Giacomo & Frey, 2022), and an increased number of businesses involved in certification processes (i.e. B-Corp certification) (Hunter and De Girolamo, 2023).

A new framework to understand motivations behind corporate green engagement. While the profit-driven principle is able to explain the main reason behind greenwashing and why regulations are important to counteract this practice, a paradox does persist. While greenwashing is growing at an unprecedented level, several companies are engaged today to transform their approach to business in an attempt to integrate sustainability into their strategy. Certified B Corporations (B Corps) or purpose-driven companies are an example. B Corp is a certification provided by B Lab, a global non-profit organization, to those companies that meet rigorous standards of social and environmental performance, accountability, and transparency. The idea behind this approach is that business go beyond traditional profit-driven models, aiming to create a positive impact on society and the environment. Purpose-driven companies are companies engaged in finding “profitable solutions to the problems of people and the planet”. Profit is not an end in itself, but rather a means to address social and environmental challenges. The establishment and proliferation of B Corps and purpose-driven companies challenge the conventional view that assumes profit as the only driven principle of business success.

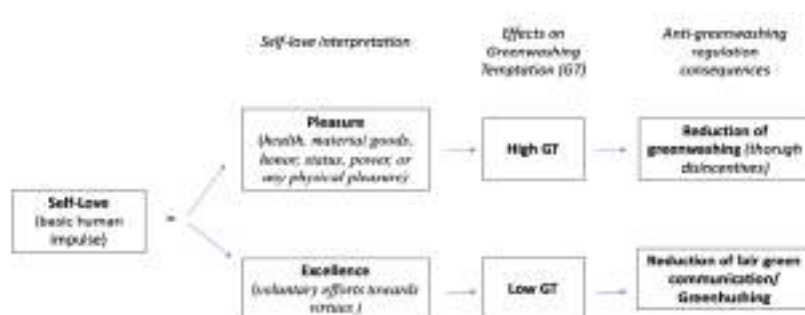
Not only good management practices challenge the self-interest model implied in the profit-driven principle, but also management literature has increasingly criticised the reductive nature of the self-interest model beyond the profit-maximization logic.

Management literature supporting motives other than self-interest has a long history, even if it has been relegated for years into marginal academic debates. Several examples of unselfishness in business have been discussed in literature, as individuals declining profitable deals they find unjust, or offering assistance to others without expecting anything in return (e.g. Elster, 1990; Frank, 1987). Even Adam Smith, often considered the father of the self-interest logic, refuses the reduction of human motivations to just self-interest. Even though in his *Wealth of Nations* Smith describes human actions as selfishness, he does not consider self-interest as the only motive for market exchanges, claiming that self-interest is moderated by an inner sense of justice (Smith & Cannan, 2003).

To address the limits of the profit maximization logic, in the last decades management scholars have proposed new concepts and theories integrating ethics into management studies. To this regard, an interesting contribution comes from Rocha and Ghoshal (2005) in their *Journal of Management Studies* article *Beyond Self-Interest Revisited*. They suggest a new framework to explain preferences, behaviours, and outcomes based on the concept of self-love, that is “the inclination of human beings to strive for their own good and perfection” (Aristotle, 1984; Aquinas, 1963). This framework integrates both self-interest and unselfishness motives into one perspective, therefore providing a valid interpretation to the coexistence of greenwashing cases and good corporate green practices. In line with Aristotle, Rocha and Ghoshal (2005) assume that the basic human tendency is toward good. However, human beings understand good in different ways: pleasure or excellence. Excellence results from voluntary efforts towards virtues and, according to Aristotle, it is the greatest of all the goods. Only excellence helps to develop the full human potential. True happiness is therefore attained when individuals cultivate their excellence, that is virtue.

Following the self-love framework (Rocha & Ghoshal, 2006), we suggest that both greenwashing and a fair corporate green engagement are motivated by the same basic human impulse towards good in general (self-love). Companies and managers engaged in greenwashing interpret “good” as “pleasure”, defined as a state attained through possessing health, material goods, honor, status, power, or any physical pleasure (Aristotle, 1984). The search for pleasure, which intricately assumes the self-interest as only motive, may guide human choices and behaviors in a personal life, as well as in management practices. However, following Aristotle, pleasure does not help individuals to reach happiness. Only excellence does.

Figure 1: The Greenwashing Temptation (GT) Framework



Based on our analysis, we develop a conceptual framework (Figure 1) introducing a new concept: the Greenwashing Temptation (GT). According to the Oxford Languages dictionary, a temptation indicates “the desire to do something, especially something wrong or unwise”. We therefore define Greenwashing Temptation as “the desire or propensity to do greenwashing”. By combining the GT with the self-love concept, the GT framework explains why some professionals consciously choose to not engage in greenwashing even when they perceive an economic advantage in doing so and the law does not forbid it. These individuals, motivated by a sense of moral duty or virtue ethics (self-love/excellence), may resist engaging in greenwashing (because they perceive a low GT) and instead prioritize transparent and truthful communication with their stakeholders. The GT framework also allows to understand the different effects of anti-greenwashing regulations on counteracting the practice. While in the cases of high GT, the legal approach may discourage greenwashing, in cases when GT is low, the legal approach may inhibit good management practices and/or encouraging greenhushing phenomena (Galli et al. 2023). Therefore, in these cases (low GT), we suggest that a different avenue to counteract greenwashing is necessary to promote good management practices.

Theoretical and Managerial Implications. Our conceptual analysis suggests that while establishing governmental regulatory frameworks may have a positive inhibitory effect on greenwashing practices, regulations alone cannot eradicate the Greenwashing Temptation. In addition, when GT is low, anti-greenwashing regulations may challenge good management practices. Indeed, our framework suggests that while the legal approach seems to be effective in discouraging greenwashing when GT is high, it does not promote fair green communication when GT is low. In cases when the motivation behind a corporate green engagement is value-driven (excellence), anti-greenwashing regulation may inhibit corporate green communication because it is not perceived as something beyond the law, therefore it does not allow to reach excellence. Given that green communication is becoming something to conform to (not “a voluntary effort towards virtues”), good companies may decide to be silence about it, thus engaging in greenhushing.

Based on the discussion about the effects of anti-greenwashing regulations on GT, we propose here a different avenue that could discourage greenwashing by challenging its foundational reason. Instead of creating financial disincentives, we call for the urgency of promoting an ethical approach in management and marketing studies. Scholars in the field should adopt a more comprehensive approach, where environmental and social concerns are integrated into the ultimate purpose of businesses. Putting ethical thinking at the core of management education would not eradicate greenwashing, given that, according to self-love theory, managers could always decide to focus on “pleasure” instead of “excellence”. However, as claimed by Ghoshal (2005), if we wish our students to contribute to building “delightful organizations”, we will have to teach them theories that describe how they can do so.

Limitations of the Study. This short paper is a work-in-progress conceptual paper. The paper needs to elaborate further the “ethical approach” proposed as an alternative avenue to counteract greenwashing. Additional theoretical frameworks could be integrated into the discussion to support the formulation of the new concept of GT. For instance, the literature of motivating principle for CSR is particularly relevant in this context. To this regards, Maignan and Ralston (2002) identify different principles discussed in CSR communication as driving forces of corporate commitment to CSR: performance-driven and value-driven. The two concepts could be related to excellence and pleasure, and they could be integrated into the GT framework.

The paper should also expand the discussion about the philosophical assumptions behind the self-interest view (*homo economicus*) and the profit maximization logic to better support the establishment of the self-love concept as a more comprehensive approach to understand human behaviors in management. In addition, to understand consequences of anti-greenwashing regulations in case of low vs high GT, empirical research is needed. The concept of GT should be therefore operationalized to test its effects in greenwashing-related phenomena.

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Harnessing collective bargaining for fostering sustainability and competitiveness: fact or fiction?

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Abstract

Modern societal and environmental challenges increasingly pressure business organizations to embrace corporate sustainability. However, achieving a “just” transition in the business sector involves navigating tensions among multiple and sometimes divergent demands of economic, societal and environmental sustainability, reconciling the needs and expectations of a wide range of societal actors. Addressing this challenge necessitates participatory and collaborative instruments that, while advancing corporate sustainability efforts, also mediate between societal actors in the attempt to reconcile divergent needs. In this view, this short paper aims to examine the opportunity offered by collective bargaining as a participatory and inclusive instrument apt at promoting corporate sustainability while reconciling divergent economic, societal and environmental demands through negotiation among societal actors, namely labor unions and employers’ representatives. The research project is ongoing as it examines the collective bargaining process aimed at the renewal of the national collective labor contract within the Italian metalworking industry in 2024. The present extended abstract thus presents the theoretical groundings, methodological approach and expected results.

Key words: ESG; collective bargaining; national collective labor contracts; sustainability; metalworking industry.

Framing of the research. *Amidst today’s social and environmental challenges, business organizations increasingly emerge as crucial actors in advancing sustainable development (Bansal & DesJardine, 2014). The evolution of social, regulatory, and competitive landscapes over the past fifty years – due to increasing regulatory pressures, ecological and societal uncertainties, and growing environmental awareness – lead the business sector to recognize corporate sustainability as an indispensable paradigm to ensure legitimacy and competitiveness in the long-term (Hoffman & Bazerman, 2007).*

Yet, achieving a sustainable transition of the business sector involves navigating tensions arising from multiple and sometimes divergent demands of economic, social and environmental sustainability: this implies aligning efforts towards environmental improvement with the protection of societal actors (e.g. workers, local communities, etc.), all the while upholding market competitiveness and profitability (Hahn et al., 2015; Van der Byl & Slawinski, 2015). The complexity of the challenge calls for collaborative efforts from all societal actors – from private enterprises to labor unions, from trade associations to public institutions – in ensuring a lasting and “just” transition of the business sector (Linnenlueck & Verreynne, 2017).

Collective bargaining joins societal parties – employers’ representatives and labor unions – in the process of negotiating terms and conditions of employment, ranging from compensation and welfare benefits to job security and workplace safety (Doellgast & Benassi, 2020). The economic dimension has always been a primary focus of the collective bargaining process, aiming to balance demands for secure and fair employment, competitiveness, and profitability (Doellgast & Benassi, 2020); however, in recent years, environmental concerns (e.g. climate change mitigation, resource consumption, etc.) and the need to ensure a socially just transition are gaining increasing attention in collective bargaining, as a result of increasing pressures for corporate sustainability (EESC, 2023). The inclusive and participatory nature of collective bargaining indeed makes it a privileged instrument for balancing the diverse stakeholders’ needs and expectations while articulating the sustainable transition of a business sector.

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In this view, the research project explores collective bargaining as a participatory instrument to promote sustainability within the business sector, fostering divergent social, environmental and economic demands through negotiation among societal actors. The research project is ongoing as it examines the collective bargaining process aimed at renewal of the national collective labor contract within the Italian metalworking industry in 2024.

Purpose of the paper. There is a certain consensus that collective bargaining can drive the green transition and promote a more environmentally sustainable economy (EESC, 2023; Odessky, 2019). The Trade Unions Congress, UK, has indicated key benefits for unions in integrating green issues into collective bargaining, such as achieving cost savings, aligning organisations with grand challenges, offering green jobs, and staff engagement. Moreover, some countries, such as Australia, Canada and the United Kingdom, are already involved in environmental goals, such as those related to climate protection, directly into collective bargaining by labour unions. Trade unions are starting to see new opportunities that arise from the sustainability transition, where labour markets may become more aligned to sustainability in terms of training, organisations and development of labour. Green jobs have started to be developed, as they contribute to reducing environmental negative consequences by promoting the development of sustainable companies and economies from an environmental, economic, and social point of view.

Despite the consensus on the potential importance of collective bargaining to promote sustainability and despite the examples of green collective bargaining in some countries, the European Economic and Social Committee (EESC) has recognized that in EU Member States, there are limited and inconsistent experiences of green bargaining (EESC, 2023). Some challenges that the literature has identified include the balance of power among negotiators and the will of different parties to turn collective bargaining into an instrument for regulating environmental issues (Gutiérrez and Tomassetti, 2020, p. 19). Moreover, the transformative process of the industry that is required to be aligned to a socially just transition should be based on the definition of long-term industrial relationships and policies that are needed to support the change of the industrial systems towards a higher level of sustainability. Those aspects require making decisions in the present, but the cost-opportunity can be evaluated in the future. The complexity of this transformative process of the labour market is also due to the complexity of the representative process regarding the collective interest in the transition phase, as the interests of different actors should be considered: companies, employees, local communities, society, and environmental movements. There is consensus that the labour market should become an open social system where multiple actors collaborate together to create the conditions for a just transition. But at the same time, that idea should still be developed (Tomassetti, 2021).

EESC highlights the importance of making more efforts to promote green collective bargaining and foster cooperation between employers and workers by including clauses related to environmental sustainability in collective bargaining to promote a green and socially just transition. The paper aims to explore the role that collective bargaining may have in promoting a sustainable transition by considering environmental and social issues and, at the same time, ensuring a high competitiveness of companies and industrial sectors. A contribution of the study is to focus on the opportunity to include Environmental, Social and Governance (ESG) aspects in collective bargaining. We consider collective bargaining as a participatory governance tool aiming to promote a dialogue among different social parties (i.e., employers and employees, but also governments and institutions). Thus, the research questions of the paper are the following:

Rq 1: Can collective bargaining support companies in contributing to a sustainable and just transition by also ensuring a high level of competitiveness within industrial sectors?

Rq2: What are the main challenges that may affect negotiations among social actors regarding the inclusion of ESG aspects in collective bargaining?

Methodology. Given the need for more understanding on the role of collective bargaining for fostering industry sustainability and competitiveness, we choose to address our research question through an inductive case study. The methodology is particularly suited when processes are complex, when the analyzed case is unique and particularly convenient (Gehman et al., 2018), and when phenomena are new and poorly understood (Eisenhardt, 1989). Moreover, case studies are not at odds with generalizing findings (Flyvbjerg, 2006). The case we would like to analyze is the new ESG CCNL (Collective National Labour Contract) for the metalworking industry, encouraged by Federmeccanica. This is an extreme case (Pettigrew, 1990), as this is the first Italian example of ESG collective bargaining.

Research setting

In order to understand the research context, we believe it is important to detail not only who Federmeccanica is and how it works but also how the process of collective bargaining for approving the CCNL works.

Starting with the latter, collective bargaining refers to “all negotiations between one or more employers (or their organizations) and one or more workers’ organizations (trade unions) for determining working conditions and terms of employment, including issues related to pay and working time [...]. A number of dimensions of collective bargaining (‘bargaining structure’) have been identified. These include coverage which refers to the percentage of employees directly affected by agreements; the level that bargaining occurs at; the scope or range of topics encompassed by bargaining; and depth – that is, the extent to which agreements are jointly implemented and reviewed” (Eurofound). Among these, one of the issues addressed by the political debate in recent times concerns the introduction of an adequate minimum wage for workers, also following the presentation by the European Commission of a directive on the topic, definitively approved on 14 September 2022, which Member States will have to implement within two years of its entry into force. The minimum wage can be established by law (legal minimum wage), by national collective bargaining, or by the combination of the regulatory source with collective bargaining. Currently, the minimum wage exists in all EU Member

States: in 21 countries there are legal minimum wages, while in 6 Member States (Denmark, Italy, Cyprus, Austria, Finland and Sweden) minimum wage protection is provided exclusively by collective agreements. Thus, collective bargaining and CCNL are particularly tricky and significant for Italy. The debate usually also revolves around other issues (above identified), such as the level of the minimum wage, the procedures and criteria to be established for the periodic adjustment of the minimum wage and the involvement of trade unions and employers' organizations in its definition. Therefore, the social parties and the collective negotiation, with their decisions, thus play a central role in this matter.

Federmeccanica (Federazione Sindacale dell'Industria Metalmeccanica Italiana – Association of the Italian Metalworking Industry), have been established in 1971, aiming to protect, in the field of labor law and in particular in industrial relations, the interests of the Italian metalworking industry. It not only represents and promotes the metalworking industry in relations with public opinion and Italian and European institutions, but it also represents and assists the participating groups in relations with trade union organizations and with Italian and European institutions; moreover, it stipulates the national collective labor agreement (CCNL) for the category. It joins Confindustria, and it is a non-profit and apolitical entity. Through the metalworking groups established in the Territorial Industrial Associations of the Confindustria System, Federmeccanica associates approximately 16,000 companies employing 800,000 people.

Its role in guiding the renewal of CCNL is critical. In 2016, through its commitment, collective bargaining agreements marked a turning point for industrial relations in the metalworking industry. In fact, in 2016, the social partners in the metalworking industry agreed to renew the collective agreement, after a long dispute and rift between FIOM (Federation of White and Blue-Collar Metalworkers), Federmeccanica and ASSISTAL (National Association of Plant Manufacturers, Energy Service Companies and Facility Management), FIM (Italian Federation of Metalworkers) and UILM (Italian Union of Metalworkers). In this context, since 2016, Federmeccanica aims to have a key role in negotiating for encouraging new and challenging CCNLs. The last metalworking industry agreement, signed in 2021, will expire in June 2024. Given that sustainability is now mandatory and is becoming the primary objective of states and also of large economies, it is no longer just a political issue but also an economic one. The largest international operators have put ESG (Environment, Social, Governance) issues on their agendas, in order to achieve a global paradigm shift including work and the way of doing business. There is no doubt that being at the forefront of these issues provides companies with a competitive advantage. Thus, according to the president of Federmeccanica, the new CCNL should integrate some ESG dimensions. The basic idea is that the fulfillment of the contractual rule itself becomes a useful action to achieve qualified standards for ESG purposes. Solid foundations already exist in the National Contract, from welfare to training, gender issues, or safety at work. However, at the same time, there are margins for further development, both from a formal point of view, i.e. giving the current provisions a look that responds to the ESG certification parameters, and from a substantial point of view, by identifying other actions and new areas that can make it possible to strengthen, improving it, the existing system with an even more marked ESG footprint. The ESG CCNL could include further tools to be implemented at the company level to raise the bar of sustainability and competitiveness, and useful guidelines could be included to guide companies and collaborators. With the support of authoritative experts, including academic ones, and operators involved in the ESG field, Federmeccanica has started, in September 2023, its work to arrive ready for the contractual appointment with ideas and proposals which, according to them, will allow Italian mechanics, companies and collaborators to continue to be an absolute reference in the industrial panorama.

Based on the outcomes of this extensive and intricate process of collective bargaining, which is expected to culminate soon, given the need to sign the new CCNL, we will understand if and how this will be a suitable case for our objectives. At the moment of writing, the bargaining has already started, with concerns and requests coming from the trade unions and with the implementation of a first platform proposal (February 20th, 2024) for the renew of the CCNL. This platform aims to address the needs of metalworking workers and offer appropriate solutions to prioritize industrial labor and invest in future generations. Depending on the ongoing negotiation, we will comprehend to what extent this case could be considered the first successful Italian implementation of an ESG CCNL.

Potential data collection and analysis. For data collection, a deep immersion in the setting is mandatory. Qualitative research, specifically case study research, requires a deep immersion in multiple kinds of data (Gehman et al., 2018), which may help in revealing the focal phenomenon. We aim to use, if possible, interviews and video calls – important for most studies (Gioia et al., 2013) –, as well as document study. While document analysis refers to the review by the researchers of written materials, interviews are used to gain knowledge and insights into a person's experiences, opinions and motivations (Gioia et al., 2013). Interviews can generally be classified as open (e.g. free conversation) or semi-structured (Punch, 2013), where open-ended questions and an interview guide are used.

We expect to start data collection and data analysis if and as soon as the bargaining is a semi-definitive step. The best approach for data analysis will be chosen once all the data have been collected (Langley & Abdallah, 2011).

Results. The research project aims at advancing the current understanding of the role of national collective labor contracts as mechanisms for promoting sustainability efforts within industry sectors and strengthening market actors' responsiveness and preparedness towards the grand challenge of sustainable transition while enhancing long-term competitiveness. To this aim, the study expects to examine the dynamics inherent in the collective bargaining process, illuminating the interactions between social actors as they negotiate ESG requirements. This process-oriented approach will help identify sustainability topics where the interests of social actors align, as well as tensions that may hinder progress. In this view, we expect the results of the study will provide insights into two main areas, discussed below.

First, we expect that the results will contribute to the understanding of ESG topics prioritized by social actors within the process of collective bargaining. In line with the broader RQ1's objective, which explores collective bargaining and national labor contracts as levers for the sustainable transition of the metalworking sector, while upholding competitiveness, the study's results will shed light on ESG topics that are integrated into the collective bargaining process. These topics will be deemed promising in terms of aligning sustainability efforts with competitive advantage. Thus, the results of the study will contribute to addressing the following sub-questions: (i) What ESG issues are deemed more central to the needs and demands of the diverse constituents of the metalworking industry? (ii) What ESG issues are considered promising levers for the competitiveness of the overall metalworking sector?

Given the preliminary documental analysis – based on existent and publicly available documentation –, we expect social actors will assign greater importance to social sustainability and governance requirements during the negotiation process, compared to environmental sustainability issues, for several reasons. Firstly, social and governance aspects already feature prominently in national labor contracts within the metalworking sector, particularly regarding issues such as fair compensation, welfare, health and safety, and financial and non-financial disclosure. In contrast, environmental sustainability issues have not previously been addressed within collective bargaining processes. This may deter social actors from raising environmental concerns during negotiations, fearing resistance from other parties. Second, social welfare aspects and workers' benefits (such as improved work-life balance and extended parental leave) are often linked to increased company attractiveness, enhanced worker retention, job satisfaction, and productivity. Consequently, we anticipate that social topics will be more closely aligned with the national contract's objective of fostering competitive advantage within the sector. On the contrary, environmental sustainability issues may be linked to easier access to credit and financial resources or cost reductions.

Second, the results will contribute to the understanding of conflicts and tensions that may arise in the interaction between social actors throughout the collective bargaining process, and that may hamper the successful integration of ESG criteria in national labor contracts. Collective bargaining indeed necessitates balancing diverse actors' needs and demands, which are often conflicting, as they encapsulate divergent priorities between labor and employers; however, sustainability constitutes a pressing priority for all social actors, and thus is seen as a promising avenue to partially reconcile such tensions. Still, given the unprecedented experience of pursuing corporate sustainability (at social, environmental and governance levels) through national labor contracts, resistance to change may arise. Thus, in line with the broader RQ2, the study will provide insights into the major tensions that may affect collective bargaining among social actors regarding the inclusion of ESG aspects in the collective national labor contract.

Based on the initial analysis of previous collective bargaining processes in the metalworking sector, we expect two major tensions between social actors to arise during the negotiation of ESG criteria. Firstly, tensions may surface between large enterprises and SMEs affiliated with Federmeccanica. Due to their larger resource endowments, large companies in the metalworking industry may not view additional ESG requirements as burdensome. These companies usually have organizational structures dedicated to sustainability and are often certified according to relevant schemes (e.g., ISO 14001). Consequently, sustainability requirements may represent a marginal additional effort for them. On the contrary, SMEs may perceive ESG requirements as too demanding, given their limited resources and capabilities: additional costs entailed by complying with ESG requirements may damage the narrative of aligning sustainability efforts and competitiveness. Such differences may pose challenges to finding common ground between these entities, potentially obstructing the bargaining process. Second, tensions may arise between companies and labor unions: the latter may perceive the introduction of ESG requirements in the contract as a means to accrue additional benefits to the employers rather than employees, while diverting attention during the bargaining process from more central monetary and compensation issues. This may lead to resistance to change on the unions' side.

Research limitations. This research is a work in progress. Thus, we believe there are some important limitations that could serve as a starting point for improving both the current research project and future research.

First of all, even if the collective bargaining has started and there is a first draft of a new platform, the negotiation is still ongoing, and we do not know yet if this will be a successful case worth deepening.

Furthermore, one of the main principles of process and dynamics research is that data should be collected over time (Gehman et al., 2018) to capture the process studied. Our research and potential data collection and analysis will focus on the first step of the story, which is the negotiation for the ESG CCNL. If, on one side, at the time of writing, more time is mandatory to see how the negotiation proceeds, on the other side, if the ESG CCNL is signed and approved, to be able to understand if the agreement can be a concrete instrument for fostering sustainability and competitiveness in the metalworking industry, we'd need to wait and see its realization and evolution. Are companies able to implement the new CCNL rules? Are they able to collect ESG-related data? Is it actually fostering internal changes? These are only some of the questions to answer while studying the practical effects of the new agreement.

Managerial implications. Given that the theme of sustainability is becoming the primary objective of states and large economies, which imposes a global paradigm shift for all dimensions of human life, including work and the way of doing business, national contracts, also negotiated according to sustainability (ESG) principles, may function as pioneer instruments in the sector in the pursuit of cutting-edge solutions. The different actors involved in the collective bargaining but, above all, large companies, should foster its realization to allow the industry transition toward a more sustainable way of working and a higher competition and, in addition to that, to help small entities to grow and embrace ESG obligations. In this context, the role of managers in fostering, planning, implementing, controlling and re-designing the ESG requirements included in the CCNL is key.

Originality of the paper. Some initiatives have been carried out in the area of green collective bargaining, for example, in the UK. However, there is a gap in the research on exploring the role of collective bargaining in promoting sustainability transition and a high level of competitiveness for companies.

Moreover, in Italy, the identified case would be the first example of ESG collective bargaining.

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Construct of Corporate Social Responsibility Scepticism: Implications and Insights from the Literature

RONGTITYA RITH¹ RICCARDO SPINELLI²

Abstract

This study provides a scoping review on the corporate social responsibility (CSR) vis-à-vis scepticism scholarship and appraises how the two concepts have been examined and contextualised in relation to one another. The findings illustrate the intricate process nature of CSR scepticism, given that CSR can yield both buffering and boomerang effects on CSR practitioners. The thematic analysis performed on 58 studies (published from 2007 to 2022) elaborates on CSR scepticism as a multi-dimensional construct with three distinctive typologies identified with regards to how the two topicalities have been cross-examined in the extant literature: “Typology 1: Dispositional scepticism and the buffering effect of CSR”, “Typology 2: Situational scepticism and the boomerang effect of CSR”, and “Typology 3: Centrality of CSR scepticism and its mitigation”. This study offers a conceptual insight into the prevalent issue of CSR scepticism, whilst also informing marketing, communication, and public relations professionals about the necessity of mitigating CSR scepticism, which has emerged as a barrier to effective CSR implementation and communication processes.

Key words: Content analysis; CSR; literature review; scepticism; skepticism; stakeholder management

Framing of the research. Stakeholders have become more observant and pessimistic about corporate actions and communications in general, and this era has been witnessing a surging decrease in trust amongst stakeholders (Du et al., 2010). Within the corporate social responsibility (CSR) context, scepticism arises when stakeholders perceive that companies engage in and communicate about their CSR actions with ulterior motives. Due to heightened levels of public scepticism, it is imperative that companies discern what CSR activities to undertake and how to disseminate CSR information effectively to accommodate a vast variety of different stakeholders and attain their legitimate support (Skarmeas and Leonidou, 2013). Nevertheless, the inherent risk of public scepticism is involved in both CSR implementation and communication processes (Kim and Rim, 2019). To a certain extent, stakeholders might personally experience discrepancies in CSR claims, and they may develop dispositional tendencies to resist organisations’ persuasive attempts by deliberately questioning their CSR efforts and imposing their sceptical views on the organisations’ intentions and motives (Yoon et al., 2006). Such public scepticism exists on so large of a scale that it imposes a hardship on contemporary business organisations as they strive to demonstrate their CSR efforts (Xu and Kochigina, 2021). The crux of the ironic argument is that those stakeholders are sceptical when companies “do not” engage in CSR to fulfil their social and ethical responsibility; nevertheless, they are still sceptical when companies “do” engage in CSR endeavours. This irony is contrary to the common notion that CSR is a win-win proposition to create the so-called “shared value” for business and society (Porter and Kramer, 2006).

Public scepticism can be so pervasive that CSR endeavours may become a double-edge sword for businesses when they are not perceived positively by stakeholders. Despite the fact that scepticism towards CSR can obstruct the success of CSR implementation and communication, CSR scepticism in its own entirety has not been well conceptualised and contextualised in the extant literature (Kim and Rim, 2019; Rim and Kim, 2016). The extant proliferation of CSR research has largely indicated a consensus that stakeholders are generally more optimistic about companies that engage more attentively in CSR initiatives (e.g., Becker-Olsen et al., 2006; Ellen et al., 2006). However, scepticism is simultaneously more prevalent surrounding organisational attempts at CSR implementation and communication processes (Kim and Rim, 2019). Stakeholders have become more doubtful about corporate CSR actions and communications (Connors et al., 2017) since they are under the impression that business organisations largely employ CSR as a marketing tactic to capitalise on consumers’ goodwill (Pirsch et al., 2007).

In the CSR context, scepticism originates from the conflicting paradox between the “for-profit” nature of business and the “altruistic” nature of CSR itself. CSR scepticism can be defined as the general public’s inclination to question and doubt an organisation’s claim of socially responsible positions and actions (Du et al., 2010; Rim and Kim, 2016). If stakeholders perceive that a company is using CSR strategically to reap certain organisational benefits, they are more likely to be sceptical of the concerned CSR practice. The crux of the argument is that stakeholders may care less about a

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company's CSR actions than about its motives (Ellen et al., 2006). Their responses to CSR are a result of not only the actual CSR practice itself, but also their evaluation of the CSR practice in relation to the company as a whole (Becker-Olsen et al., 2006).

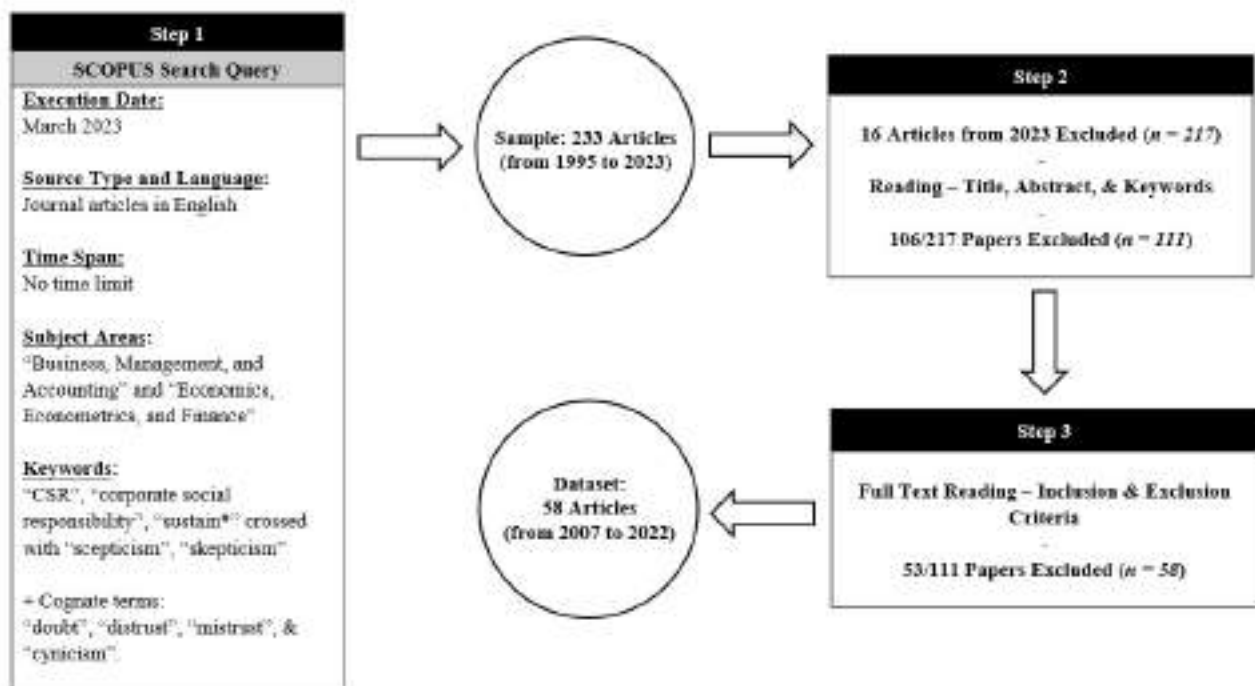
Despite the prevalence of public scepticism towards corporate CSR implementation and communication, studies on the antecedents and outcomes of CSR scepticism remain limited. This dearth of research is imperative to address for several reasons. First, scepticism is an intriguing phenomenon manifesting within a range of corporate governance strategies, including firms' CSR communication (Dunn and Harness, 2018; Love et al., 2022; Ma and Bentley, 2022), cause-related marketing (Vlachos et al., 2016), or crisis communication (Jung and Lee, 2022; Wei and Kim, 2021). Second, negative consumer responses towards corporate actions are quite detrimental, such as boycotting (Klein et al., 2004), cynicism (Chon and Kim, 2021; Serrano Archimi et al., 2018), or distrust (Ginder and Byun, 2022; Kim and Rim, 2019). Third, scepticism against CSR is on the rise although contemporary businesses have been extensively implementing CSR initiatives and publicising their CSR-related accomplishments. On another note, there have been reported incidents of corporate controversies that have worsened both issues of corporate transparency and hypocrisy in relation to organisational attempts at implementing and disseminating CSR actions (Lee and Comello, 2019).

Purpose of the paper. Contemporary business organisations engage in various CSR initiatives to accomplish their strategic goals or make positive contributions to their respective societies. Astonishingly, scepticism has become more prevalent surrounding CSR claims since stakeholders are sceptical of the extent to which those companies live up to their professed standards. Notwithstanding the abundant CSR research in various disciplines, the management literature over-fixates on CSR strategic paybacks, and less attention has been devoted to examining why CSR may be under siege. The purpose of this study is to analyse the process nature of CSR scepticism as a multi-dimensional construct through a scoping literature review of the current output of CSR vis-à-vis scepticism literature. This study takes an initial step towards conceptualising CSR scepticism by not only analysing its process nature, but also elaborating on its underlying determinants and outcomes. By doing so, this review contributes to a nascent research stream explicating the current workings and linkages between the CSR and scepticism topicalities, whilst aiming to inspire a continuous effort in theorising and pragmatizing research pertaining to the issue of CSR scepticism in its entirety.

Methodology. This literature review adopted the scoping method. According to Munn et al. (2018), researchers may choose to conduct a scoping review when the purpose is to scope a specific literature body, clarify concepts, or investigate the conduct of previous research. In addition, scoping reviews are particularly "useful for examining emerging evidence when it is still unclear what other, more specific questions can be posed" (Munn et al., 2018, p. 2). This objective is appropriate for the descriptive nature of this study, given that it does not emphasise any specific research questions in relation to the research context in question (i.e., the process nature of CSR scepticism).

To warrant academic rigour and quality, this review followed the five-step framework proposed by Arksey and O'Malley (2005): (1) identifying the study's scope, (2) identifying the scale of relevant studies, (3) selecting relevant studies, (4) charting the data, and (5) summarising and reporting results. Figure 1 below illustrates the first three steps of the literature search.

Figure 1: Execution steps of the literature search



In Step 4, thematic analysis was performed on the dataset, and we manually examined the full contents of the 58 articles against their strategic focuses, research aims, and findings. The bibliographic details of the dataset were recorded and developed into a literature database via MS Excel. Once established, the database was examined for patterns, themes, and anomalies. Following the data analysis, the descriptive and thematic findings in Step 5 could be elaborated.

Results. The dataset comprises 58 articles published between 2007 to 2022. Those articles were published across 29 journal outlets, including *Public Relations Review* (n = 6), *Journal of Business Ethics* (n = 5), *Journal of Marketing Communications* (n = 5), *Corporate Social Responsibility and Environmental Management* (n = 4), *Journal of Brand Management* (n = 4), and *Journal of Business Research* (n = 4). Additionally, majority of the articles came from the United States (n = 31) and certain European countries, specifically the Netherlands (n = 4) and the United Kingdom (n = 3). France, Germany, Italy, Spain, and Greece each contributed one study. In Asia and Oceania, India and Malaysia each contributed 2 articles, and one article originated from Australia. In terms of theoretical foundations, this review has identified 29 theories explicitly referenced in 44 studies. The remaining 15 studies were not framed around any theories. Attribution theory was the most utilised theoretical framework (n = 12). Other prominent theories include legitimacy theory (n = 3), cognitive dissonance theory (n = 3), and stakeholder theory (n = 2), to name a few.

Furthermore, the thematic analysis performed on the 58 papers enabled a further exploration of their research aims, strategic focuses, and findings. Our aim was to reconcile recurring themes that may explicate the CSR scepticism construct and its dimensions and outcomes. Following the thematic analysis, we could identify and distinguish three distinctive typologies to explain how the CSR and scepticism topicalities have been cross-examined and contextualised in the current literature in relation to one another.

Typology 1: Dispositional Scepticism and the Buffering Effect of CSR

Typology 1 comprises 14 articles. This category represents the overarching “buffering” effect of CSR on public scepticism and posits that scepticism is relatively “inherent” amongst stakeholders. Studies falling within this scope typically revolve around the role of scepticism as an underlying antecedent issue in relation to various CSR-related practices.

The extant literature has provided an insightful implication that public scepticism towards organisational altruism of CSR generally stems from the conflicting paradox between the “profit-maximising” priority of business organisations and the “altruistic” nature of CSR. The empirical work of Kim and Rim (2019), for example, posited that scepticism can be more inherent in nature amongst cynical stakeholders. In fact, for-profit business organisations are perceived to be seeking profit maximisation as their main priority. This naturally leads people to doubt the ulterior motives of any corporate CSR practices and perceive them as less altruistic. Kim (2022) has also stated that CSR scepticism is rising, and it is intricately connected to the capitalistic nature of businesses. This perspective is also applicable to and more prominent in the context of stigmatised industries operating in controversial business settings (Austin and Gaither, 2019). Prior research has shown that public scepticism is more inherent towards controversial corporations, and scepticism is an antecedent of corporate CSR-related actions.

In addition, the empirical evidence captured in the dataset has largely indicated that CSR scholars have been striving to identify factors influencing scepticism towards organisational altruism and stakeholders’ perceptions towards CSR motives and manifestations (Teah et al., 2022). When the attribution of ulterior motives is triggered, stakeholders are more likely to evaluate organisations and their CSR practices in a negative manner (Vanhamme and Grobben, 2009). Amidst public scepticism against CSR actions and communications, organisations ought to attenuate the scepticism towards their altruism and pursue to build a quality brand-consumer relationship (Shankar and Yadav, 2020). Specifically, the study of Park (2022) has investigated the mediating role of scepticism in determining how corporate social advocacy (CSA) can help build quality stakeholder relationships. In this regard, corporations can signal their sincerity by engaging in CSA-related practices and taking a more definitive and supportive stance on major societal issues (Park, 2022).

Although CSR communication enhances the visibility of a company’s CSR efforts, the more the company communicates, the more likely negative consumer reactions (i.e., scepticism) may also occur (Love et al., 2022). The work of Kang and Atkinson (2021) stressed on pro-environmental CSR messages in the hotel industry and examined the effects of message objectivity and consumers’ CSR-oriented and advertising-oriented responses. Their findings demonstrated that objective and outcome-focused messages are more effective in reducing consumers’ scepticism and leading consumers to perceive CSR as more public-serving. Likewise, Hall et al. (2021) have built a conceptual model that demonstrates the effects of CSR storytelling and suggested that organisations can leverage the storytelling process to convey their CSR actions in a more effective manner. On another note, the empirical study of Jung and Lee (2022) emphasised the importance of maintaining a continuous and consistent CSR communication efforts to sustain favourable perceptions and expectations of stakeholders.

Typology 2: Situational Scepticism as the Boomerang Effect of CSR

Typology 2 consists of 25 articles in the dataset. This category represents a literature body that examines the “boomerang” effect of CSR on scepticism. Studies within this category typically address CSR as a causal determinant perpetrating public scepticism, whilst also addressing various impacts of scepticism.

Business organisations have a strong tendency to inform stakeholders that they are committed to CSR, and they

disseminate their CSR activities accordingly. Nevertheless, there is also risk involved in communicating about CSR initiatives. Previous studies have demonstrated that consumers are generally sceptical about CSR claims since they are under the impression that companies mostly employ CSR as a “window-dressing” or “green” strategy to take advantage of consumers’ supportive intentions (Connors et al., 2017; Leonidou and Skarmeas, 2017). This perspective is also applicable to when CSR is strategically employed to attenuate a crisis situation (Ham and Kim, 2020). Companies can be perceived negatively although they do good deeds through CSR. This phenomenon can be explained as the boomerang effect of CSR which consequently induces public scepticism.

Skarmeas and Leonidou (2013) and Skarmeas et al. (2014) have further explained how consumer scepticism towards CSR develops and its influence on important consumer-related outcomes. Their findings revealed that attributions of egoistic and stakeholder-driven motives elicit consumer scepticism towards CSR, whilst value-driven attributions inhibit scepticism. In fact, this consumer behavioural aspect has been examined thoroughly by several studies. To exemplify, the work of Kwon and Ahn (2020) studied the effect of green CSR scepticism on consumers’ attitude, reactance, and behavioural intention. The empirical work of Alhouti et al. (2016) identified factors that influence the perceived authenticity of CSR initiatives. Likewise, Samuel et al. (2018) further reiterated the importance of addressing the CSR authenticity gap. Their verdicts have largely agreed that, in addition to engaging in CSR, a strategic approach must also consider the extent to which consumers perceive their CSR initiatives as authentic and genuine.

Additionally, prior studies have also suggested that scepticism towards CSR is closely related to scepticism towards conspicuous forms of CSR communication (Kim and Rim, 2019) which may include CSR claims with regards to environmental sustainability (Cheah et al., 2022), CSR messages (Dunn and Harness, 2018), or CSR advertising (García de los Salmones and Pérez Ruiz, 2018). Certain studies have also addressed consumer scepticism associated with cause-related marketing (e.g., Singh et al., 2009; Vlachos et al., 2016).

Additionally, research on public attributions of companies’ CSR motives has been pushing the forefront of CSR literature. Previous studies on CSR motives have empirically demonstrated negative effects of public scepticism towards a wide range of CSR manifestations. When publics question a firm’s sincerity, they tend to discredit the firm’s CSR actions and messages and may instead pose a negative evaluation (Skarmeas and Leonidou, 2013). How publics perceive a firm’s motivations for engaging in CSR initiatives is crucial, given that their perceptions and evaluations may alter the overall effectiveness of corporate CSR activities (Ellen et al., 2006).

Typology 3: Centrality of CSR Scepticism and Its Mitigation

Typology 3 includes 19 articles in the dataset. This category represents a literature body that centrally examines CSR scepticism in its own entirety. Studies belonging to this typology typically emphasise the impacts of CSR scepticism on organisational or consumer outcome variables as well as the presence of external variables and their roles in mitigating the issue of CSR scepticism itself.

Previous research has provided empirical insights into the role of corporate strategies that aim to mitigate public scepticism. Moreno and Kang (2020) conducted a study to examine the role of consumer evaluations of a company’s CSR communication process from both content and delivery perspectives. They suggested that the delivery of CSR information can be more important than the content itself in inducing scepticism. Their findings also indicated that the fit between a company’s core values and the CSR activities they communicate can play a significant role in alleviating scepticism, whilst the fit between consumers’ personal values and the CSR activities does not have significant effects on scepticism.

On a different note, a few studies have adopted a more psychological approach in understanding consumer behaviour with regards to CSR scepticism. The paper from Ramasamy et al. (2020), for instance, has examined the effect of human values on consumer CSR perceptions towards cosmetic companies’ CSR practices. Consumer scepticism was found to have a moderating effect on the relationship between human values of openness to change, self-transcendence, and conservation towards their CSR perceptions. Their results allow decision makers to better understand the influence of consumers’ value system on their CSR perceptions, whilst elucidating the boundary conditions posed by scepticism and amplifying the need for organisations to emphasise the notion of CSR authenticity. Another empirical study from Moscato and Hopp (2019) was conducted to examine certain psychological aspects of sceptics or cynics, involving the role of personality characteristics in consumer scepticism of CSR activities.

Within the CSR communication domain, Dunn and Harness (2018) adopted a mixed method approach in their study to explain how social media communication can shape CSR attributions and influence consumers’ CSR scepticism. Similarly, Joireman et al. (2018) have explored whether company advertisements promoting a firm’s good actions generate more positive responses when the advertisements contain concrete CSR-based claims or images. The work of Pomeroy and Johnson (2009a) emphasised the pros of corporate image advertising and its central role as a communication tool to help inform the public about organisations’ CSR effort. Their other work (Pomeroy and Johnson, 2009b), on the other hand, critically discussed the cons associated with CSR-based corporate image advertising, whilst also proposing two message variables, namely social topic information and social impact claim specificity.

The abundance of research pertaining to scepticism vis-à-vis CSR communication implies that companies face a major challenge in successfully and authentically communicating their good deeds, especially if their contributions are closely related to their core business activities (van Rekom et al., 2014). Overall, companies are becoming more involved in a wide array of CSR activities, and they often publicise their good deeds to demonstrate their CSR efforts, yet Elving (2013) proposed that organisations ought to be mindful and attentive when communicating about their CSR commitment.

Research limitations. It is equally important to note that this scoping review has certain limitations to be disclosed. First, this review purposefully targeted only peer-reviewed journal articles to maximise academic rigour and quality. In this regard, we may have neglected the grey literature which may also offer insightful perspectives. Second, we only utilised Scopus to constitute the dataset. Thus, we may have missed some other relevant works published on other platforms. Another limitation is that only articles written in English were targeted. The concept of CSR has been known to differ and vary across different social, economic, and cultural settings. As a result, we may have neglected some other relevant studies published in foreign languages. Future research may consider more types of publications and databases to accumulate more studies and constitute larger datasets for future systematic reviews or meta-analyses. Future research may also incorporate studies published in foreign languages to help enhance the current knowledge.

Managerial implications. This study contributed a conceptual insight and clarity into the prevalent issue of CSR scepticism, whilst also informing marketing, communication, and public relations professionals about the need to mitigate CSR scepticism, a prominent managerial issue that can obstruct effective CSR implementation and communication processes. To enhance and maximise public support and legitimation of CSR implementation and communication, academics and practitioners need to comprehend the process nature of CSR scepticism, thereby to effectively manage the said issue and its detrimental impacts.

Originality of the paper. This scoping literature review depicts the status quo of the extant scholarly research pertaining to CSR scepticism. The relevance and growing importance of this research area is quite apparent as there has been a surging interest in examining CSR scepticism from both academics and practitioners from inter-disciplinary fields. Our consolidation of the current research output has unveiled important determinants and outcomes of CSR scepticism as a multi-dimensional construct. As scepticism is a complex concept which originates from a wide array of research streams (e.g., marketing, public relations, communication, management, consumer behaviour, etc.), our consolidation of insightful implications and contributions from previous studies enabled us to explicate the CSR scepticism construct and its process nature.

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Il ruolo degli intermediari nella Simbiosi Industriale: il caso Regusto

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Abstract

Nel contesto della Simbiosi Industriale, dove le aziende collaborano per ottimizzare l'uso delle risorse e ridurre gli sprechi, gli intermediari svolgono un ruolo cruciale nel semplificare e facilitare i processi, creando condizioni ottimali per l'implementazione di tale strategia. Questo articolo esplora l'impatto degli intermediari sullo sviluppo della SI attraverso una ricerca qualitativa, esaminando la loro influenza sulla rete. Utilizzando la metodologia case study, la ricerca esamina Regusto, un intermediario che facilita le connessioni tra le imprese per prevenire gli sprechi nelle catene di approvvigionamento alimentare e non alimentare attraverso una piattaforma digitale. Gli intervistati rivelano che il coinvolgimento di Regusto è stato cruciale nell'avviare progetti di sostenibilità, come quello dell'azienda A1, dimostrando il ruolo dell'intermediario sia come facilitatore che come catalizzatore per iniziative sostenibili. Inoltre, lo studio mette in luce il cambiamento culturale catalizzato dagli intermediari, sottolineando l'importanza di promuovere una mentalità sostenibile e pratiche eco-innovative. Nonostante le limitazioni della ricerca, lo studio fornisce interessanti spunti sull'importante impatto degli intermediari sullo sviluppo della SI, offrendo implicazioni per l'accademia, i policy makers e i leader aziendali interessati a comprendere e a promuovere l'eco-innovazione e le pratiche sostenibili nei contesti industriali. L'originalità dello studio risiede nel suo focus sul ruolo degli intermediari nella SI, trascurato in letteratura, e nel suo contributo alla comprensione della loro influenza sulle pratiche industriali sostenibili e sul cambiamento culturale.

Parole chiave: simbiosi industriale; intermediari; ricerca qualitativa; economia circolare.

Stato dell'arte. A fronte delle recenti problematiche sociali ed ambientali, le aziende sono sempre più inclini ad adottare modelli economici alternativi e sostenibili (Porter, 2021). Negli ultimi anni, si è riscontrato un crescente interesse nelle imprese ad adottare pratiche ispirate al modello economico circolare in vari settori industriali (Dey, et al., 2022). L'Economia Circolare (EC) costituisce un modello economico che propugna la sostenibilità attraverso una radicale trasformazione del tradizionale paradigma economico. In questo nuovo approccio, il concetto di rifiuto non è più relegato a una posizione marginale (Murray & Haynes, 2017), bensì assume un ruolo centrale, diventando sia il punto di partenza che di arrivo di un processo produttivo. Attraverso meccanismi collaborativi che coinvolgono una pluralità di attori economici, nella catena di produzione ed approvvigionamento, il rifiuto si colloca al cuore del processo (Ciulli, et al., 2020; Schögl, 2023; Kirchherr et al., 2017). L'attuazione dell'EC richiede approcci differenziati a seconda del livello considerato, che può essere micro, meso o macro (Kirchherr et al., 2017). Nel contesto imprenditoriale associato al livello meso, l'EC trova espressione attraverso meccanismi collaborativi come la SI e la creazione di eco-parchi. Gli eco-parchi rappresentano comunità di imprese impegnate nella salvaguardia ambientale e nella conservazione dell'ecosistema naturale tramite la condivisione responsabile delle risorse (Chertow, 2000; Refaat, 2014; Haskins, 2006). Nella creazione di tali comunità imprenditoriali e nei meccanismi di condivisione, emergono rapporti sinergici di co-dipendenza e fiducia reciproca, basati su un dialogo costante (Corsini et al., 2022; Walls & Paquin, 2015). In questo contesto, dove si manifesta un elevato rischio di complicazioni legate alla molteplicità di rapporti imprenditoriali e alla presenza di attori diversificati che collaborano, l'intermediario assume un ruolo di rilievo nel facilitare tali relazioni (Notarnicola et al., 2016; Patala et al., 2020; Henriques et al., 2021). Si impegna attivamente nella mitigazione di eventuali barriere, che possano essere di natura fisica o mentale, emergenti durante le interazioni (Patala et al., 2020). L'intermediario contribuisce inoltre al riconoscimento del valore delle risorse, apportando il know-how necessario alle imprese per identificare strategie e pratiche finalizzate al riutilizzo, al recupero e al riciclo di materiali e risorse che rischiano di essere trascurate (Kanda et al., 2018). Pertanto, l'intermediazione nella SI svolge un ruolo cruciale nel semplificare e facilitare i processi, creando condizioni ottimali per un'implementazione efficiente. "La

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SI facilitata richiede lo sforzo di intermediari che possono svolgere varie funzioni per accelerare nuove innovazioni per il riutilizzo dei materiali” (Patala et al., p.2). Tali sforzi di facilitazione si delineano principalmente nella fase iniziale dello sviluppo della SI, attraverso “azioni di conversazione”. Queste azioni mirano a preparare il terreno per la collaborazione presentando potenziali partner e identificando opportunità di scambio. La facilitazione coinvolge anche il nutrire e promuovere la cooperazione tra gli attori nella fase pre-sviluppo, creando connessioni tra potenziali partner. Tuttavia, la facilitazione è significativa anche nella fase successiva dello sviluppo, attraverso le “azioni di co-creazione” volte a sostenere lo sviluppo dell’infrastruttura di rete e gestire il flusso di risorse (Paquin & Howard-Grenville, 2012).

Obiettivo della ricerca. Il ruolo degli intermediari esercita una significativa influenza sullo sviluppo della SI, fungendo da catalizzatori chiave (Patala, 2020). La loro presenza è cruciale per mantenere l’equilibrio e favorire lo sviluppo della rete sin dai suoi primi stadi. In mancanza di intermediari, si presenta un ostacolo primario allo sviluppo della SI (Henriques, 2021). Questo scenario evidenzia l’importanza degli intermediari come attori strategici, che hanno il compito di sviluppare una strategia di collaborazione nell’ambito della SI, un aspetto che finora è stato poco esplorato. Senza il loro intervento, le aziende devono affrontare maggiori difficoltà nel collegarsi tra loro, sottolineando così il loro ruolo fondamentale non solo nel facilitare gli incontri tra i partner, ma anche nel coltivare e stabilire relazioni solide e durature. Attualmente, le ricerche sugli intermediari nella SI sono ancora limitate, ma rivelano un enorme potenziale in questo campo. Gli intermediari sono riconosciuti per il loro valore in una varietà di contesti, che spaziano dalla transizione alla gestione ecologica all’innovazione (Kivimaa, et al., 2020; Van Lente, 2003). Sebbene gli studi confermano il contributo degli intermediari alla SI (Paquin & Howard, 2012; Zaoual & Lecocq, 2018; Patala et al., 2020) e il loro ruolo nel promuovere la cooperazione e la rivalutazione dei rifiuti (Zaoual & Lecocq, 2018), c’è ancora molto da capire sull’impatto del loro intervento. Di conseguenza, l’obiettivo principale di questo articolo è indagare sull’impatto degli intermediari nella SI. Questa analisi mira a colmare il divario nella comprensione di come gli intermediari possano influenzare positivamente lo sviluppo e le dinamiche della SI.

Metodologia. L’obiettivo di questo studio è esplorare il ruolo degli intermediari e il loro impatto nello sviluppo della SI, valutando la loro influenza sulla rete. In particolare, si intende comprendere l’impatto dell’intermediario degli intermediari allo sviluppo della SI. Si considera l’analisi del caso di studio quale metodo più idoneo per conseguire l’obiettivo della ricerca, consentendo ai ricercatori di mantenere una visione reale e chiara degli eventi della vita reale, compresi i cicli di vita individuali, il comportamento di gruppi ristretti e i processi organizzativi e gestionali (Yin, 1981). Sebbene questa metodologia possa risultare complessa e articolata, consente di ottenere risultati accurati e affidabili (Voinea et al., 2019), con significato pratico poiché riflette situazioni reali e permette di esaminare vari aspetti (Cronin, 2014; Bartlett & Vavrus, 2016).

Il caso aziendale è stato scelto attraverso un processo di selezione basato su criteri, volto a definire il profilo del campione per la ricerca (Barringer & Greening, 1998; LeCompte and Preissle 1993; Patton 1990). Nello specifico, sono stati considerati tre aspetti: (1) l’azienda deve fungere da intermediario tra diverse aziende coinvolte in collaborazioni; (2) deve manifestare un impegno per la creazione di un impatto ambientale positivo; (3) deve avere un’influenza rilevante nel contesto imprenditoriale. L’azienda scelta è Regusto, fondata nel 2016 e opera come intermediario per prevenire sprechi e eccedenze nelle catene di approvvigionamento alimentare e non alimentare. È stata riconosciuta come una delle prime 10 start-up italiane più promettenti nel 2019 (Secondi et al., 2019; EU-startups, 2019). Attraverso una piattaforma digitale, Regusto facilita in tempo reale il collegamento tra offerta e domanda di prodotti a rischio di spreco, semplificando la gestione dell’inventario sia per organizzazioni a scopo di lucro che no-profit. In aggiunta, è stata condotta un’intervista con un’azienda della catena di approvvigionamento che ha utilizzato la piattaforma Regusto per lo smaltimento di prodotti o rifiuti industriali, destinandoli a organizzazioni del terzo settore. Per motivi di riservatezza, il nome dell’azienda è stato mantenuto anonimo e verrà quindi identificato nella ricerca come azienda A1. La raccolta di dati primari è avvenuta attraverso un modello di intervista semi-strutturato, una pratica ampiamente utilizzata nelle scienze sociali per la raccolta di dati (Bradford and Cullin, 2012; Jaeger & Upadhyay, 2020). Questo approccio è stato scelto per garantire che le risposte fossero allineate agli obiettivi dello studio, offrendo agli imprenditori uno spazio per condividere riflessioni personali (Barringer & Greening, 1998). L’utilizzo di interviste semi-strutturate mirava a migliorare la flessibilità e la completezza della ricerca, preservando la natura conversazionale del dialogo (Barringer & Greening, 1998). Sono stati applicati due modelli distinti di intervista semi-strutturata, adattati alla tipologia aziendale intervistata. Gli incontri si sono svolti attraverso Google Meet nel mese di febbraio 2024, con una durata media di circa un’ora. Per garantire coerenza e uniformità nel processo di analisi, tutte le interviste sono state trascritte (Jaeger & Upadhyay, 2020). Per ragioni di riservatezza, le trascrizioni dell’intervista di A1 sono state trattate in forma anonima.

Per analizzare i dati, abbiamo adottato un approccio induttivo, una metodologia qualitativa che si basa sull’interpretazione approfondita dei dati grezzi per identificare concetti, temi e modelli emergenti (Strauss and Corbin, 1998). Questo metodo consente alle teorie di svilupparsi organicamente dai dati, senza essere vincolate da metodologie strutturate o preconcepite predefinite. Il processo di codifica è stato suddiviso in cinque fasi. Nella prima fase, nota come “pulizia dei dati”, abbiamo organizzato i dati grezzi per ciascuna intervista. Successivamente, abbiamo condotto un’analisi dettagliata del testo e dei temi correlati per ottenere una visione chiara del caso. La terza fase si è concentrata sull’identificazione e sulla creazione di categorie superiori o generali e categorie inferiori o specifiche, utilizzando un processo deduttivo nell’analisi del testo. La fase successiva ha coinvolto una “codifica sovrapposta” del testo, prendendo in considerazione solo le parti rilevanti per gli obiettivi della ricerca. Nell’ultima fase, abbiamo individuato eventuali sotto-temi in ogni categoria, derivanti da intuizioni recenti, combinando categorie in base a somiglianze (Thomas, 2006).

Risultati preliminari e discussione. Dall’analisi delle interviste, emergono due macro temi di interessante rilievo, i quali sono stati suddivisi nei due sottoparagrafi successivi denominati.

3.1. L'intermediario e la sua relazione

Nel contesto della SI, le aziende collaborano per ottimizzare l'uso delle risorse, con l'obiettivo di ridurre gli sprechi e utilizzare efficacemente i materiali (Chertow, 2000; Chertow, 2007). Questa strategia richiede una gestione complessa delle relazioni tra le imprese, che può essere difficile da orchestrare e gestire, rendendo necessarie azioni di facilitazione per il loro sviluppo (Patala et al., 2020). L'intermediazione nella SI svolge un ruolo cruciale nel semplificare e facilitare i processi, creando condizioni ottimali per un'implementazione efficiente. Come eco-innovatori, gli intermediari agiscono anche come broker, plasmando attivamente la collaborazione, organizzando contenuti, stabilendo regole, obiettivi e priorità e delineando progetti per l'implementazione. Agiscono anche come mediator, facilitando l'introduzione di nuovi collaboratori, proteggendo gli interessi degli utenti, promuovendo il loro riconoscimento e protezione e migliorando la comprensione relazionale e cognitiva (Howells, 2006; Stadtler & Probst, 2012; Kanda, 2018). Nel loro ruolo di broker, intervengono in vari modi, ad esempio agendo come convener nella collaborazione, migliorando la comprensione relazionale o agendo come learning catalyst, condividendo la loro esperienza attraverso la ricerca e lo sviluppo e promuovendo e distribuendo conoscenze, intuizioni e informazioni all'interno della rete (Stadtler & Probst, 2012).

Nel caso dell'azienda A1, il contributo di Regusto come intermediario è stato fondamentale nel lancio del progetto di sostenibilità. Senza la sua presenza e il suo sostegno, l'azienda A1, avrebbe avuto maggiori difficoltà nell'avviare il progetto. Questo dimostra non solo l'importanza degli intermediari nel promuovere iniziative di sostenibilità e facilitare la collaborazione tra le organizzazioni, ma anche il loro ruolo di catalizzatori nella creazione di opportunità e iniziative altrimenti difficili da realizzare per le singole aziende:

"Ci avevamo provato ma le realtà del terzo settore sono talmente frammentate, con tante difficoltà, che magari c'era una con cui funzionava, ma poi con le altre c'erano difficoltà. Quindi, lo si faceva una o due volte ma poi alla terza volta si faceva prima a buttarlo. Per quello che ti dico che è stato da subito concreto e semplice. È stato geniale" (Coordinatore Sviluppo Sostenibile, A1).

Pertanto, definire Regusto esclusivamente come un facilitatore potrebbe risultare riduttivo, poiché egli è stato un promotore dell'opportunità stessa. Il valore di Regusto si manifesta nel fatto che non solo ha contribuito a creare valore, ma ha anche suscitato e alimentato la motivazione necessaria per sostenere il progetto nel tempo. Ha stimolato e incoraggiato l'entusiasmo affinché il progetto potesse progredire e avere successo. In questo senso, il suo ruolo va oltre quello di un semplice facilitatore, poiché ha giocato un ruolo attivo nel promuovere e sostenere l'iniziativa di sostenibilità: "Senza di noi, molte aziende probabilmente non avrebbero iniziato o continuato le loro attività sostenibili. Il caso di A1 è emblematico, poiché all'inizio recuperavano saltuariamente qualcosa, coinvolgendo circa 10 enti no profit. Oggi ne coinvolgono 150 e il loro obiettivo è raggiungere il 10% dei prodotti recuperati, pari a 5000 tonnellate in un anno. Senza il nostro intervento, probabilmente non avrebbero raggiunto questo obiettivo con tempi e modalità diverse." (CEO di Regusto)

Ciò trova anche conferma nella relazione tra i due attori. Nella collaborazione tra una o più organizzazioni o aziende, coltivare una solida relazione di fiducia è fondamentale. La fiducia facilita la cooperazione attuale e futura, poiché le aziende sviluppano una reciproca affidabilità, confidando con sicurezza che gli impegni saranno rispettati e gli interessi saranno preservati (Zhang et al., 2011). La relazione tra intermediario ed attore delineata si distingue in modo significativo. Tale forma di relazione risulta ancora più particolare perché le sue intenzioni si sviluppano sulla base di una compatibilità percepita da entrambe le parti (Hakanen et al., 2016). In questo contesto, la fiducia assume una dimensione unica, evolvendo oltre la mera percezione di una relazione potenzialmente fruttuosa per crescere in modo sostanziale grazie a una comprensione condivisa di obiettivi e valori: "Io non so se chiamarla fiducia. Direi unione di valori in modalità cooperativa, sintonia (...)" (Coordinatore Sviluppo Sostenibile, A1).

3.2. Cambiamento culturale

La Strategia Mondiale per la Conservazione (1991) ha identificato tra i nove principi di una società sostenibile il cambiamento di atteggiamento e pratiche. Tale principio, traducibile nella diffusione di una cultura sostenibile, parte dall'assunzione che il perseguimento della sostenibilità richieda un'educazione culturale incentrata su di essa. Questo implica la diffusione di abitudini e norme comportamentali, nonché la promozione di principi e mentalità orientati verso la sostenibilità (Robin & Poon, 2009). "La cultura è una condizione per l'azione (...), e si riferisce alla civiltà". Da ciò emerge una concezione della cultura come motore di un potere sociale, economico e politico collettivo, comune a tutti poiché necessario a tutti: attraverso la cultura, gli individui conferiscono significato a sé stessi, agli altri e all'ambiente sociale in cui si trovano. La cultura costituisce lo strumento attraverso cui si attribuisce valore e senso a una condotta, a un principio, a una pratica sociale, economica o politica (Horlings, 2015, p. 163). Questo concetto trova conferma anche nelle osservazioni fatte dal CEO di Regusto:

"La sfida consiste nel far crescere la cultura in questo ambito, sia a livello aziendale che istituzionale" (Founder di Regusto). "Questa iniziativa conferma ciò che stiamo facendo per il Ministero, dimostrando che il monitoraggio degli impatti ambientali, e anche sociali, lungo la filiera agroalimentare e non, è diventato un elemento strategico per istituzioni come il Ministero della Transizione Ecologica ed Enea. Questo conferma che ciò che stiamo facendo è qualcosa di innovativo e necessario a livello ambientale e sociale".

In questo processo, un ruolo fondamentale è svolto rispettivamente dalle istituzioni sovranazionali, nazionali e locali, dalle organizzazioni non governative, dalle aziende e, più in generale, dalla società civile. Ciascuna di queste ha motivazioni diverse residenti, rispettivamente, nel desiderio di soddisfare le esigenze e i bisogni dei cittadini, nella volontà di perseguire ideali e valori personali, nella ricerca di profitto o nell'adesione a valori comunitari (Gardner, 2001). Nonostante le ragioni possano essere diverse, il progetto è comune a tutti. La transizione verso la sostenibilità può essere attuata attraverso una governance attiva, ove i governi lavorano in collaborazione con gli attori della società civile, ispirati da progetti chiari come l'agenda 21 per la sostenibilità (Evans et al., 2013). La cultura sostenibile nel suo processo può essere scomposta in quattro aspetti quali consapevolezza, intesa come la comprensione che risulta necessario cambiare quella situazione, la preoccupazione intesa come l'ansia derivante da quella situazione, motivazione - ciò che sollecita a migliorare e ad agire ed infine l'attuazione, intesa come il risultato del disagio e di quella preoccupazione sfociante in un effettivo comportamento (Robin&Poon, 2009). Nel processo di creazione di una cultura, vengono influenzati sia l'insieme di valori e tradizioni locali che le sovrastrutture identitarie, insieme alle dinamiche e ai processi che caratterizzano lo sviluppo regionale, guidati dalla volontà collettiva umana e che si estendono al di là dei confini geografici o amministrativi (Horlings, 2015):

“L'azienda A1 non può essere considerata omogenea a livello di valori. Le pratiche di sostenibilità sono più diffuse nei paesi europei dove il volontariato è ampiamente praticato, rispetto ad altri contesti caratterizzati da una minore sensibilità verso gli altri”.

Limitazioni della ricerca. Come tutte le ricerche in ambito accademico, anche il presente studio presenta delle limitazioni. In primo luogo, è stata condotta un'analisi basata su un solo caso di studio, quale Regusto, per esaminare l'impatto dell'intermediario nel processo di SI. In secondo luogo, è stata intervistato soltanto una sola azienda, ossia Azienda A1 interagente con Regusto per valutare l'impatto dell'intermediario nel processo di SI. Il lavoro futuro prevede di condurre interviste successive con ulteriori casi coinvolti nel processo di SI interagenti con Regusto, al fine da effettuare un'analisi più approfondita. Inoltre, si intende condurre un'indagine su altri intermediari, e relative aziende coinvolte nella SI, implicati nel processo di implementazione della SI.

Implicazioni manageriali. Il presente studio si distingue per la sua analisi dell'impatto degli intermediari nel contesto dello sviluppo della SI. Le sue conclusioni offrono un contributo significativo alla comunità accademica e ai responsabili delle politiche, nonché ai dirigenti aziendali futuri, che cercano di comprendere meglio l'implementazione della SI e i meccanismi chiave che facilitano questo processo. In particolare, questa ricerca fornisce una prospettiva approfondita sul ruolo cruciale degli intermediari e sulla loro influenza nel rendere più efficiente e veloce l'adozione dei sistemi informativi. Si ritiene che la disseminazione dei risultati di questo studio possa accelerare l'identificazione degli intermediari, migliorare la comprensione del loro impatto sul mercato e, soprattutto, evidenziare come possano facilitare la transizione verso pratiche eco-innovative.

Originalità della ricerca. Il presente studio si focalizza sull'analisi del ruolo dell'intermediario nel contesto della SI, esaminando l'impatto che esso ha sullo sviluppo di questa strategia. La sua originalità risiede in due principali aspetti. Primo, sebbene gli intermediari siano riconosciuti come attori fondamentali nei processi di transizione ecologica e di innovazione manageriale, il loro ruolo nei contesti di SI è stato poco esplorato, nonostante la crescente considerazione di questa strategia come cruciale per la transizione verso processi produttivi più sostenibili. Secondo, i risultati della ricerca non solo confermano chiaramente l'importanza dell'intermediario come elemento chiave, ma anche evidenziano il suo ruolo come promotore di cambiamento culturale e promotore di eco-innovazione.

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L'industria del calcio tra sostenibilità finanziaria e nuove dimensioni tecnologiche

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Abstract

I club di calcio europei sono interessati da una profonda trasformazione in quanto sollecitati dalla continua evoluzione che sta caratterizzando l'industria del calcio; i club nel tentativo di garantire la sostenibilità finanziaria adottano innovazioni anche attraverso il ricorso alle tecnologie digitali. In passato, i club hanno sempre attuato strategie finanziarie legate a sponsorizzazioni, vendite di biglietti e diritti televisivi; recentemente i cambiamenti normativi ed economici, nonché l'avvento sempre più dirompente della tecnologia e della transizione digitale favoriscono l'esplorazione di nuove vie di sostenibilità finanziaria. Difatti, con l'avvento della digitalizzazione, i club calcistici utilizzano nuove tecnologie quali la blockchain, i Fan Token e i Token Non Fungibili (NFT), i canali Over-The-Top (OTT). La ricerca ha inteso esaminare un campione di club considerati un esempio di diversificazione e sostenibilità implementate dai club di calcio europei più virtuosi, che integrano le proprie strategie finanziarie attraverso l'utilizzo dell'informatica, della digitalizzazione e dei social. Dall'analisi emerge un nuovo comportamento che lascia immaginare l'identificazione di nuovi spazi competitivi per l'industria del football, basati su nuovi contents digitali in grado di garantire maggiore stabilità finanziaria mediante una costante diversificazione strategica delle fonti di reddito.

Key words: digitalizzazione, OTT, token, blockchain, social media, tecnologia, diversificazione, sostenibilità finanziaria.

Inquadramento della ricerca. Il lavoro approfondisce e descrive una ricerca che gli Autori stanno svolgendo su un campione di club di calcio europei (Top Club europee) che hanno di recente implementato strategie innovative, aprendosi alla trasformazione digitale ed al marketing innovativo per incrementare i propri ricavi.

In passato, le tradizionali fonti di reddito delle imprese calcistiche europee erano sufficienti a sostenere la loro crescita. Tra queste fonti, le più diffuse e collaudate includevano sponsorizzazioni, vendite di biglietti e, successivamente, diritti televisivi. Su queste fonti di reddito è stato costruito essenzialmente il successo finanziario dei club europei.

Le sponsorizzazioni sono state, per anni, una pietra miliare delle entrate per i club sin dall'inizio del calcio professionistico. La natura reciprocamente vantaggiosa delle sponsorizzazioni ha avuto un profondo impatto sulla stabilità finanziaria e sulla crescita delle organizzazioni calcistiche. I club stipulano varie forme di accordi di sponsorizzazione, che comprendono sponsorizzazioni di maglie, diritti di denominazione degli stadi e endorsement. I diritti di denominazione degli stadi, d'altra parte, prevedono che il nome di uno sponsor venga affisso al terreno di casa del club. Questi accordi sono particolarmente preziosi perché creano un collegamento duraturo tra lo sponsor e il club, (Bull e Whittam, 2021), con evidenti impatti sulla visibilità globale dei club.

Le vendite di biglietti rappresentano il collegamento per antonomasia tra club di calcio e tifoseria. L'esperienza di assistere alle partite di persona è impagabile, costituendo una parte integrante della cultura dello sport. Quest'ultimi rappresentano una componente vitale dell'identità di un club. I tifosi sono il cuore pulsante del club, alimentando la lealtà e l'impegno duraturo. Questo coinvolgimento rafforza il ruolo del club come istituzione comunitaria.

I diritti televisivi, infine, hanno rivoluzionato il panorama finanziario dei club di calcio. La vendita dei diritti di trasmissione a reti televisive e piattaforme di streaming ha introdotto ricavi senza precedenti e ha elevato l'attrattiva globale del fenomeno del calcio professionistico. Le partite trasmesse superano i confini geografici, consentendo ai club di costruire una base di tifosi in tutto il mondo. Occorre sottolineare, inoltre, che i diritti televisivi contribuiscono all'equilibrio competitivo nello sport, poiché i ricavi generati dagli accordi di trasmissione sono distribuiti tra i club, garantendo che anche i club più piccoli ricevano una quota delle entrate.

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Queste fonti di reddito tradizionali hanno fornito, fino a poco tempo fa, i mezzi finanziari affinché i club potessero operare⁵. Tuttavia, ciò che ha spinto le imprese calcistiche a cercare nuove e più proficue fonti di reddito è stata l'evoluzione normativa europea, sul fairplay finanziario (SPF); questa pressione normativo-istituzionale non ha più permesso, né tollerato, l'esistenza di squilibri di bilancio e plusvalenze fittizie dei giocatori determinati dalla necessità di indebitarsi oltre misura per competere sportivamente, ottenendo, quindi, nel breve periodo, un saldo attivo consistente in un ritorno economico falso, non reale, incapace di sostenere nel lungo periodo la capacità finanziaria dell'impresa (Antognozzi S., 2022).

Com'è noto, il ricorso al disavanzo di bilancio per finanziarsi è nato soprattutto come effetto della sentenza Bosman⁶, che sancì la libera circolazione dei lavoratori all'interno dell'Unione Europea, consentendo il trasferimento dei calciatori professionisti ad altra società, al termine del contratto, senza nulla dovere alla società di provenienza. Per sopperire ai danni economici alle società calcistiche, la UEFA introdusse, nel 2004, le c.d. Licenze Uefa⁷. Nel 2009 il Comitato esecutivo della Uefa emanò il Financial Fair Play Concept, un corpus di regole obbligatorie per le squadre partecipanti alle competizioni europee, integrato, nel 2023, dal nuovo "Regolamento Uefa sulle licenze per club e la sostenibilità finanziaria". Tale normativa perseguì l'obiettivo di stabilire dei requisiti di pareggio del bilancio societario e di favorire la stabilità finanziaria dei club.

Di conseguenza, la ricerca di nuove entrate finanziarie necessarie per conformarsi ai vincoli normativi UE ha favorito un'evoluzione delle strategie di finanziamento dei club europei, sempre più interessate alle opportunità generate in campo finanziario dall'innovazione tecnologica: ad esempio, la trasformazione degli stadi di proprietà in beni multifunzionali in grado di generare reddito durante tutto l'anno (Werlayne et al., 2023; Edensor et al., 2021), oppure la valorizzazione economica del marchio del club, della sua storia monetizzata attraverso la vendita di diritti multimediali e la creazione di contenuti multimediali. Il merchandising è divenuto, quindi, una fonte sempre più potente di reddito, includendo più prodotti (videogame, maglie, scarpe, ect.) (Söderman e Dolles, 2013) con il vantaggio di poter raggiungere clienti in tutto il mondo sfruttando la brand reputation del club e dei suoi players (Uva, 2023; Yiapanas et al., 2023).

La competizione per una maggiore quota di mercato porta i club a "scommettere" gli asset aziendali per il successo futuro, rendendo l'industria calcistica finanziariamente instabile (Lago et al., 2006; Renzi, Taragoni, 2023, 115 ss.). In risposta a tali tendenze emergenti, la UEFA è intervenuta con il regolamento sul Fair Play Finanziario (FPF) per migliorare la salute finanziaria dei club europei.

In tale contesto, le imprese calcistiche hanno iniziato a ricercare nuove fonti di reddito immediato, individuando nuovi percorsi di investimento sostenibile tali da generare entrate finanziarie sempre più cospicue e proficue (Esposito De Falco, 2023, 5-6). Questa incessante ricerca della prosperità finanziaria ha modellato l'evoluzione delle strategie di sostenibilità finanziaria, seguendo i cambiamenti della dinamica di mercato e i progressi tecnologici. L'industria calcistica moderna si è dunque evoluta, da semplice fenomeno sportivo a sistema imprenditoriale e decisionale poliedrico e flessibile, capace di ricorrere a strategie tecnologicamente innovative di investimento finanziario volte a superare la dipendenza da fonti tradizionali di reddito (sponsorizzazioni, vendite di biglietti e diritti televisivi) non più sufficienti a garantire la stabilità finanziaria a lungo termine (Memari et al., 2021; Cayolla et al., 2023).

I club di calcio hanno così intrapreso una straordinaria diversificazione finanziaria, che comprende lo sfruttamento commerciale dei social media, l'ascesa delle piattaforme OTT (Over The Top), l'utilizzo di innovative fonti reddituali di entrata che si aprono al commercio digitale sfruttando token e blockchain e coinvolgendo i tifosi in piattaforme virtuali ed immersive di fruizione del servizio calcistico (UEFA, 2024; Deloitte, 2023; FIGC, PWC, 2024).

Con l'ascesa di internet e dei social media, i club hanno iniziato a esplorare ulteriori vie per distribuire i contents, lanciando siti web ufficiali, app e piattaforme di streaming (Fenton et al., 2023); si pensi, ad es., al programma E-Foot FIGC 2020-2022, con oltre 17.000 iscrizioni alla selezione delle e-Nazionali, una community di 82.319 utenti (+719% vs 2020) e 2,4 milioni di visualizzazioni, 1,6 milioni di utenti unici dei 50 live streaming su twitch. Su questa scia, anche le squadre di club italiane stanno adottando strategie simili spostando l'attenzione sui social media e sulle nuove tecnologie digitali (fig. 1).

⁵ Cfr. Bouchet, Troilo and Urban, 2020; Giudice F., 2020.

⁶ La sentenza ha il nome del calciatore belga che ricorse alla Corte di Giustizia della Comunità Europea per vedersi riconosciuta la possibilità di trasferirsi allo scadere del contratto con la propria società senza possibilità, da parte di quest'ultima, di chiedere un indennizzo economico. Cfr Dièz, Martinèz Sanchez (1996), 469 s.

⁷ Ogni club deve rispettare i principi contabili della propria legislazione e per le società quotate vige l'obbligo di redigere il bilancio facendo riferimento ai principi contabili internazionali IAS/IFRS. Lo scopo principale è stato quello di rafforzare la trasparenza delle operazioni economiche e finanziarie dei club al fine di rendere il sistema più stabile ed il relativo mercato più attrattivo per gli investitori. Cfr. G. Tortorano, 2017, 67 s.

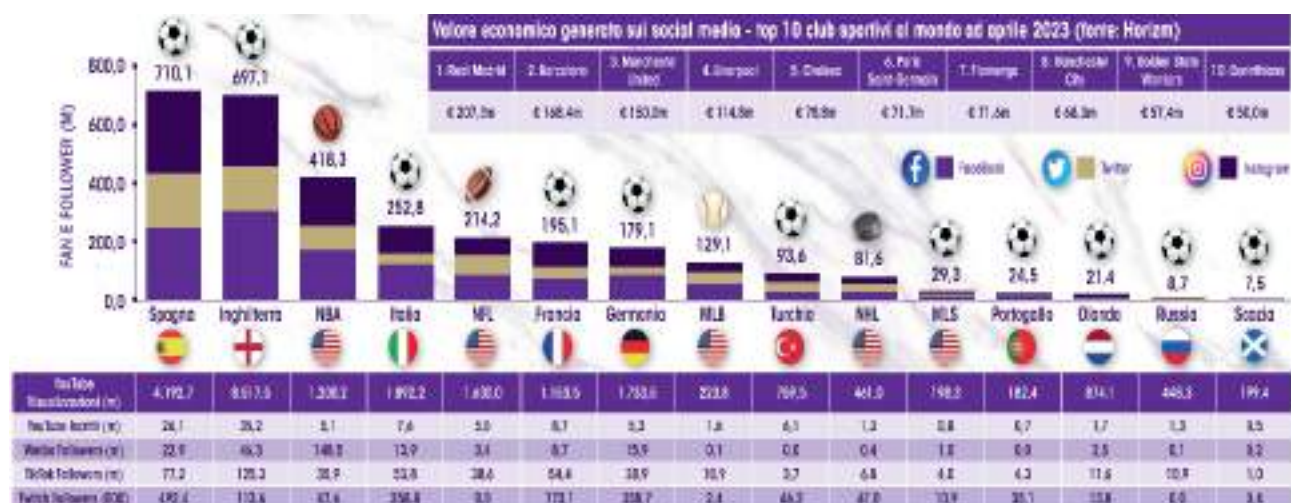
Fig. 1 - Profilo social delle società di calcio professionistico

	Squadre Analizzate	Facebook Followers	Twitter Followers	Instagram Followers	TOTALE	YouTube Visualizzazioni
Serie A	20	121,3 M	37,2 M	94,3 M	252,8 M	1.892,2 M
Serie B	20	7,4 M	1,3 M	5,7 M	14,3 M	53,0 M
Serie C	60	1,1 M	0,3 M	1,0 M	2,7 M	12,6 M
TOTALE	100	129,8 M	38,8 M	101,0 M	269,6 M	1.957,8 M

Fonte: da noi riadattata da FIGC, PwC, 2024

Un confronto sui fan e follower totali sui social media dei club calcistici italiani professionistici evidenzia un chiarissimo incremento dalle 127,4 mln di visualizzazioni sui siti dei club del 2017 ai 261,8 del 2022 ai 499,2 mln di visualizzazioni su You Tube del 2017 ai 1.987,8 del 2022 (FIGC, PwC 2024, 103). In merito alla brand reputation dei club italiani è stata condotta una ricerca in cui sono state raccolte, dai social network, circa 2,5 milioni di conversazioni da parte di circa 1,3 milioni di utenti in tutta Italia, riguardanti il calcio italiano, per comprendere come gli utenti percepiscono il mondo del calcio e le possibili opportunità di crescita e miglioramento dell'immagine di questo sport. Dall'analisi è emerso un sentiment nel complesso positivo (51%), soprattutto se confrontato con la media degli altri settori. Emerge inoltre una crescita del 6% nella percentuale di donne che discutono di calcio⁸. Per comprendere l'interesse generato dal calcio nel mondo, basta ricordare che, sui social network, il calcio intercetta l'interesse di circa il 40% degli abitanti del pianeta⁹.

Fig. 2 – L'importanza del profilo social del calcio mondiale (confronto con lo sport professionistico Nord Americano)



Fonte: FIGC, PwC, 2024, 162

I social media sono diventati, quindi, uno strumento fondamentale nelle strategie di reddito dei club di calcio (Glebova et al., 2023). Piattaforme come Facebook, Twitter e Instagram offrono ai club la possibilità di interagire con i tifosi, promuovere il merchandising e assicurarsi accordi di sponsorizzazione lucrativi. Ciò vale, in generale, anche in riferimento alla trasformazione digitale della fruizione dei contents calcistici¹⁰, per cui la transizione dalla Linear TV al consumo digitale mostra una crescita nell'utilizzo di strumenti digitali (Over-The-Top e streaming) per seguire gli eventi

⁸ Per la Serie A i picchi di conversazioni riguardano fine agosto - inizio settembre 2022 e fine gennaio 2023, in corrispondenza della chiusura del mercato estivo ed invernale, quando i "colpi di mercato" delle società provocano un aumento delle reaction e delle conversazioni degli utenti sui social. Le regioni più coinvolte sono state Lombardia, Lazio e Campania (FIGC, PwC, 2024, 105).

⁹ I club partecipanti alle 5 Top League calcistiche europee (Inghilterra, Spagna, Italia, Francia e Germania) presentano un numero aggregato di fan e follower sui principali social media (Facebook, Twitter, Instagram e TikTok) pari a circa 2,4 miliardi, con oltre 17 miliardi di visualizzazioni su YouTube, mentre le franchigie partecipanti alle top league del Nord America (NFL, MLB, NBA, NHL e MLS) si fermano rispettivamente a 1,0 miliardi e a 3,7 miliardi. La persona con più fan e follower a livello mondiale è il calciatore Cristiano Ronaldo (820 milioni nel gennaio 2023); in base alle stime di Nielsen, in media ogni post su Instagram del campione portoghese produce un Social Media Value pari a quasi 3,6 milioni di dollari (dato che rappresenta il valore mediatico derivante dall'esposizione del logo che un marchio ottiene quando collabora con un influencer come CR7), (UEFA, 2024, 147).

¹⁰ La creazione di contents multimediali prodotti e distribuiti in modo indipendente dai club, consente loro di acquisire il controllo sulla narrazione, rafforzando i legami socio-emozionali con i tifosi. Questo cambiamento ha portato a un'esperienza più coinvolgente per i tifosi, offrendo l'accesso ad interviste esclusive e contenuti personalizzati (Lefebvre et al., 2023; Rowe, 2015).

sportivi rispetto alla tv lineare (Free To Air e Pay TV): infatti il 41% degli appassionati di sport a livello mondiale segue gli eventi sportivi in streaming tramite OTT, social media o altre piattaforme digitali¹¹.

Tra il 2017 e il 2022 i club partecipanti alle 10 Top League calcistiche europee con una divisione di e-sports sono più che raddoppiati (da 67 a 143), mentre nello sport professionistico del Nord America (NBA, NFL, MLB e NHL) sono aumentati del 132% (da 50 a 116) (FIGC, 2024, 164). Secondo dati dell'Osservatorio di E&Y, inoltre, nel gennaio 2022 si contano 32,8 milioni di utenti delle piattaforme OTT (pay e free), in aumento rispetto ai 28,7 del gennaio 2020; nello stesso periodo, il numero di abbonamenti è aumentato da 8,5 a 14,5 milioni, gli utenti pay da 13,8 a 17,8 milioni e i sottoscrittori unici paganti da 6,1 a 7,9 milioni. Considerando i 5 principali mercati televisivi europei, i servizi OTT in streaming nel 2022 sono responsabili per il 20% di tutta la spesa in diritti tv sportivi (dato in crescita rispetto al 12% del 2021). L'Italia è in testa a questa classifica, con un'incidenza pari al 53% (grazie in particolare all'accordo tra DAZN e Lega Serie A); seguono Germania (32%), Spagna (16%), Francia (14%) e Inghilterra (2%). In particolare, il valore dei diritti media sportivi domestici acquisiti da OTT è cresciuto dal 4% al 23% nelle 5 Top League calcistiche europee negli ultimi 2 anni e dal 5% del 2018 al 23% del 2021 per la Uefa Champions League nei 5 mercati top (Inghilterra, Germania, Spagna, Italia e Francia), mentre in Sud America l'incidenza degli investimenti degli OTT per i diritti media della Copa Libertadores è passata dallo 0% del 2018 al 30% del 2022. A livello globale (dati 2021), la generazione z (9-24 anni) rappresenta il cluster maggiormente interessato allo sport (60%), davanti ai Millennials (25-40 anni) con il 55%, alla Generazione X (41-56 anni) con il 49% e al segmento Boomers (57-75 anni) con il 47%. Le generazioni più giovani sono allo stesso tempo quelle che utilizzano maggiormente gli OTT e i social media per seguire gli eventi sportivi (FIGC, PwC, 2024).

I club di calcio si sono anche avventurati nel Metaverso, un universo virtuale dove i tifosi possono interagire con il club in modi inediti¹² (Hongyi et al., 2022). L'immersività sta diventando un elemento imprescindibile nello sviluppo dell'intrattenimento sportivo: si calcola che il mercato dei dispositivi per la fruizione dei contenuti sportivi in realtà aumentata e realtà virtuale raggiungerà i \$ 7,5 mld entro il 2026 (IQUII Sport, 2023). Attraverso esperienze di realtà virtuale (VR), i tifosi possono partecipare alle partite, esplorare la storia del club e impegnarsi in attività uniche, aprendo nuovi canali di entrate. Alcuni club hanno persino introdotto collezionabili NFT (Token Non Fungibili) nel Metaverso (Baker et al., 2022; Romero-Jara et al., 2023).

Cripto-attivi e Fan Token sono emersi come elementi rivoluzionari nelle entrate 4.0, rivoluzionando l'engagement dei tifosi e la sostenibilità finanziaria¹³. I club di calcio hanno riconosciuto il potenziale delle criptovalute e della tecnologia blockchain. Gli NFT (Non-Fungible Token) ovvero oggetti da collezione digitali e carte collezionabili, negli ultimi anni stanno rappresentando una significativa opportunità anche per organizzazioni sportive, club e atleti, in termini di sviluppo di iniziative per la valorizzazione degli asset commerciali e del fan engagement. In particolare, sono ben 45 i club calcistici europei e 78 franchigie dello sport professionistico del Nord America che hanno avviato progetti, attività, sponsorizzazioni e collaborazioni in ambito NFT. Le Organizzazioni sportive a livello mondiale che hanno lanciato un Fan Token o hanno stretto accordi con aziende del settore (Socios, Binance e Bitci), al 2023, sono ben 122 nel calcio (contro 28 nel basket mondiale, 14 nel football americano, ect.).

Fig. 3 – I Fan Token nello Sport



Fonte: da noi riadattata da FIGC, PwC, 2024

¹¹ la percentuale media di tifosi di calcio che utilizzano i social media mentre guardano una partita di calcio è pari all'81%, e raggiunge addirittura il 90% in Cina, l'88% in Brasile, l'82% in India e negli Stati Uniti, il 77% in Spagna e supera il 60% in Australia, Francia, Italia, Regno Unito, Germania e Corea del Sud.

¹² 17 CLUB calcistici europei stanno sviluppando progetti utilizzando il Metaverso. Un esempio è IQUII Sport, la Business Unit di IQUII nata per supportare federazioni, club, atleti nel processo di trasformazione digitale orientata al potenziamento del business e per affiancare brand e investitori nel processo di valorizzazione delle partnership (<https://sport.iquii.com>).

¹³ All'interno del più ampio settore dei cryptoasset, i fan token rappresentano asset digitali che permettono ai possessori di prendere parte ai processi decisionali delle organizzazioni sportive esprimendo le proprie preferenze in sondaggi vincolanti (ad esempio per selezionare il design delle divise, i numeri di maglia, realizzare messaggi motivazionali e molto altro), con sconti esclusivi e la possibilità di guadagnare premi e ricompense attraverso giochi, concorsi e altre funzionalità.

Nonostante la recente crisi del mercato delle criptovalute (secondo alcune stime il valore del mercato è diminuito a livello globale per circa 1.800 miliardi di dollari tra la fine del 2021 e l'inizio del 2023), rimane significativo l'investimento nello sport da parte dei soggetti operanti nel settore dei cryptoasset (ad esempio NFT, criptovalute, blockchain e fan token), con sponsorizzazioni, accordi commerciali e sviluppo di piattaforme e iniziative di fan engagement. Alcuni club si sono avventurati nel mondo dei crypto-attivi investendo o accettando criptovalute per merchandising e biglietti (Naraine, 2019).

I Fan Token sono diventati un pilastro dell'engagement dei tifosi. I club emettono questi token su piattaforme blockchain, consentendo ai tifosi di influenzare le decisioni del club e accedere a contenuti ed esperienze esclusivi (Stegman et al., 2023). La vendita di Fan Token genera entrate e rafforza il legame emotivo tra club e tifosi. Alcuni club hanno sfruttato i Fan Token per dare ai tifosi una voce nella selezione delle playlist delle partite, nella scelta dei design delle maglie o persino nel votare per iniziative di beneficenza, facendo sentire i tifosi veramente connessi al processo decisionale del club. In definitiva, la rivoluzione delle entrate 4.0 nel calcio sottolinea l'adattabilità del settore nell'abbracciare nuove tecnologie e fonti di reddito innovative.

Finalità del paper. Nell'approfondire le strategie di investimento innovative delle squadre di calcio, si vuole verificare la validità e l'efficacia delle scelte individuate e la loro diffusione all'intero settore, sia nazionale, sia europeo.

Metodologia. Questa ricerca è stata sviluppata seguendo il metodo dei casi (Yin, 1984), volto a esemplificare un obiettivo o delle finalità di ricerca attraverso la rappresentazione di casi aziendali corrispondenti alla domanda di ricerca che si intende perseguire.

Nello specifico, la domanda di ricerca di questo lavoro, focalizzandosi sulle fonti di finanziamento delle imprese calcistiche, è la seguente:

“Le strategie di sostenibilità finanziaria nel settore calcistico europeo sono interessate dall'evoluzione tecnologica in atto? La transizione digitale può favorire il raggiungimento di una sostenibilità finanziaria per le imprese del calcio?”

Partendo da questa domanda di ricerca, si è ritenuto più opportuno ricorrere alla metodologia dei casi, definendo e selezionando venti top club europei (nazionali e internazionali) allo scopo di descriverne l'evoluzione verso fonti tecnologicamente innovative di reddito (OTT, token, multiverso, profilazione social, brand reputation, ect.).

La ricerca condotta non è ancora terminata. Tuttavia, ha comportato la costruzione di un campione qualitativo e selezionato di club europei da analizzare. Per restringere il campo, sono state considerate le cinque leghe principali: Premier League inglese, Serie A italiana, Liga spagnola, Bundesliga tedesca e Ligue 1 francese. All'interno di queste leghe, sono stati selezionati i 4 principali club. Per ogni club sono stati analizzati le fonti di reddito più innovative, dai siti web, al livello di digitalizzazione comunicazionale e di brand marketing, dalle fonti innovative di reddito (OTT, token, social, ect.) alla capacità delle nuove tecnologie di aumentare l'engagement dei tifosi, lungo un arco temporale riguardante gli ultimi tre anni finanziari (2020/21; 2021/22; 2022/23) (Ace Advisory, 2023; Mullin et al., 2014). La Tabella 1 riassume il campione analizzato, che è stato costruito sulla base delle informazioni desumibili da una research web condotta anche presso i siti dei principali club europei. Nel campione sono stati inseriti quei club che fornivano maggiori informazioni di dettagli circa l'utilizzo delle nuove tecnologie a supporto della formazione del reddito d'esercizio.

Tab. 1: L'elenco del campione di club europei analizzati

Club	Paese	Legha	Sito Web
Manchester City FC	Inghilterra	Premier League	https://www.mancity.com/
Liverpool FC	Inghilterra	Premier League	https://www.liverpoolfc.com/
Chelsea FC	Inghilterra	Premier League	https://www.chelseafc.com/en
Arsenal FC	Inghilterra	Premier League	https://www.arsenal.com/
Paris Saint Germain	Francia	Ligue 1	https://en.psg.fr/
Olympique de Marseille	Francia	Ligue 1	https://www.om.fr/fr
Olympique Gymnaste Club de Nice Côte d'Azur	Francia	Ligue 1	https://www.ogcnice.com/en/
LOSC Lille	Francia	Ligue 1	https://www.losc.fr/
FC Barcelona	Spagna	Liga	https://www.fcbarcelona.com/en/
Real Madrid Club de Fútbol	Spagna	Liga	https://www.realmadrid.com/en-US
Valencia Club de Fútbol	Spagna	Liga	https://www.valenciacf.com/home
Club Atletico de Madrid	Spagna	Liga	https://en.atleticodemadrid.com/
SSC Napoli	Italia	Serie A	https://sscnapoli.it/
F.C. Internazionale Milano	Italia	Serie A	https://www.inter.it/it
Juventus FC	Italia	Serie A	https://www.juventus.com/en
AC Milan	Italia	Serie A	https://www.acmilan.com/en
BVB Borussia Dortmund	Germania	Bundesliga	https://www.bvb.de/eng
Fußball-Club Bayern München AG	Germania	Bundesliga	https://fcbayern.com/en
Bayer 04 Leverkusen Fußball	Germania	Bundesliga	https://www.bayer04.de/en-us#statistics
Fußballclub Union Berlin	Germania	Bundesliga	https://www.fc-union-berlin.de/en/

Si precisa, in particolare, che è in corso di realizzazione l'analisi dei casi, per cui la discussione e le conclusioni di seguito esplicitate sono ancora parziali, anche se, in diversi casi, già significative. Gli Autori intendono terminare la ricerca nei prossimi mesi e pubblicare un'analisi più approfondita dei risultati ottenuti, che comprenda, ad esempio, anche una valutazione del miglioramento delle performance finanziarie risultate dall'implementazione di queste strategie finanziarie tecnologicamente innovative.

Risultati. Poiché la ricerca è ancora in corso d'opera, i risultati ottenuti non sono conclusivi, né esaustivi. In linea di massima, sono stati individuati tendenze nuove come quelle relative alla sostenibilità ed alla social responsibility che stanno esercitando impatti significativi anche sulla sostenibilità finanziaria dei club, a dimostrazione dell'adattabilità dell'industria calcistica ai cambiamenti socio-economici e tecnologici. In particolare, si evidenziano le diverse strategie che si evincono dai case study per diversificare e migliorare le fonti di reddito (dalla trasformazione digitale, alla profilazione social, all'e-commerce, alla brand reputation, ai fan token), conseguire una maggiore autonomia e versatilità finanziaria e rafforzare le entrate.

Sulla base della documentazione fin qui analizzata, tuttavia, si può sottolineare come l'espansione dei contents multimediali, ad es., sia una strategia fondamentale per i club calcistici, perché permette loro di superare i propri ruoli convenzionali di semplici entità sportive. La SSC Napoli, ad esempio, ha avviato, con IQUII, un progetto di vera trasformazione digitale sportiva, partendo dalla creazione di un ecosistema digitale basato sulle funzionalità di SportXP e Fanize, il tutto con l'obiettivo di portare i fan della SSC Napoli al centro del percorso di crescita del brand a livello internazionale. Alla base del progetto della SSC Napoli, la possibilità per gli utenti di vivere la propria passione azzurra secondo meccaniche che rendano la partecipazione attiva un abilitatore di esperienze esclusive grazie all'utilizzo della sport platform SportXP, con accesso a una serie di attività volte a rendere la fan experience coinvolgente e partecipativa attraverso l'utilizzo della Fan Cam per personalizzare e condividere i propri scatti, la partecipazione a survey, sondaggi e quiz per testare le proprie conoscenze sul club e dimostrare l'attaccamento alla maglia e alla sua storia. Questa piattaforma ecosistemica è in grado di aggregare e coinvolgere oltre 10 milioni di tifosi azzurri nel mondo attraverso fan experience esclusive e attività di fan engagement volte a fidelizzare sempre di più una delle fanbase più appassionante dell'intero panorama calcistico mondiale.

Il Borussia e il Bayern Monaco si sono affidati alla profilazione social, affidandosi alle piattaforme come TikTok che attirano un seguito sostanziale grazie a contenuti creativi e coinvolgenti, trasformandosi così in fonti di entrate attraverso partnership, sponsorizzazioni e collaborazioni con influencer.

In Spagna L'Atletico Madrid ha sviluppato una vasta gamma di prodotti a marchio del club, dalle maglie ai cimeli, attraverso i negozi online ufficiali, sfruttando la logica del marketing tribale consolidando il legame con i tifosi in una logica di engagement continuo e diffuso. In questo modo, quindi, l'e-commerce e il merchandising digitale si sono trasformati in fonti di entrate redditizie per il club. Dalla ricerca è emerso che nel 2023 il Barcelona FC ha generato sui social media 168,4 mln di Euro di valore economico. Di questi, il 10% proveniente da investimenti nello sviluppo di progetti di fruizione dei contenuti sportivi mediante il ricorso al metaverso, nonché realizzando un Innovation Hub/Center interno alla società (fonte: IQUII Sport). Più di 41 Club calcistici europei hanno inaugurato un Canale OTT, tra cui Bayern Monaco, Juventus, Barcelona, Real Madrid e Arsenal. Barcelona, Paris Saint Germain, Manchester City ed altri 30 top club europei permettono ai supporters, attraverso l'acquisto di fan token, di prendere parte ai processi decisionali e di esprimere le proprie preferenze per selezionare, ad es., il design delle divise, le campagne promozionali, ect.

In sintesi, i casi studio finora analizzati sottolineano come i club calcistici tendano a superare i propri ruoli convenzionali, applicando strategie di sostenibilità finanziaria per diversificare le fonti di reddito e ridurre la dipendenza da fonti di reddito volatili. Rispetto alla domanda di ricerca, quindi, i risultati ottenuti confermano l'esistenza di trend dei club europei (quantomeno i più virtuosi finanziariamente) verso strategie di sostenibilità finanziaria focalizzate su nuove e più innovative fonti di reddito. Ovviamente occorre ancora valutare un campione più ampio di case study per poter fornire una risposta più precisa e accurata.

L'analisi dei casi studio finora realizzata fornisce interessanti conclusioni sull'evoluzione dell'industria calcistica, sempre più contestualizzata sull'utilizzo di nuove tecnologie ICT. I club calcistici analizzati sono sempre più propensi ad utilizzare le tecnologie blockchain, a coinvolgere i tifosi attraverso Fan Token, Non-Fungible Tokens (NFT) e merchandising digitale, nonché a diversificare la propria attività attraverso canali Over-The-Top (OTT) e/o progetti legati al Metaverso e l'istituzione di Innovation Hub. Tutto ciò ha consentito ai tifosi una maggiore interazione e coinvolgimento con i propri club (ad es. il coinvolgimento in percorsi virtuali e di realtà aumentata e l'introduzione di token dei tifosi basati su blockchain, che permettono un accesso senza precedenti nella vita quotidiana dei club).

In conclusione, emerge anche un altro aspetto, recentemente alcuni autori hanno sostenuto che l'industria del calcio non risulta estranea al dibattito scientifico sulla sostenibilità. I profondi cambiamenti economici negli ultimi decenni (Breitbarth e Harris 2008), i fattori relativi all'engagement dei tifosi (la "connessione affettiva del tifoso" discussa dalla capacità di influenzare la comunità locale attraverso ampi impatti economici e sociali -culturali, emozionali, politici, relazionali, ecc.) nelle aree locali dei club stanno contribuendo allo sviluppo di nuove linee di ricerca sulla sostenibilità nell'industria del calcio. Il coinvolgimento stretto del consumatore, che comprende anche i lavoratori dei club, è un fatto irrefutabile nel calcio. A nostro avviso, questo fattore può essere uno strumento interessante da incorporare nel nucleo dell'organizzazione, in quanto può aiutare a trasmettere i principi della sostenibilità e la cultura della Social Responsibility (SR) agli attori esterni più importanti. Ciò dovrebbe basarsi su una strategia reale che si poggia sui pilastri della SR: responsabilità, sostenibilità finanziarie, cultura della misurazione e comunicazione degli impatti sociali positivi stanno diventando i parametri di riferimento per la competitività nell'industria calcistica. La necessità di una tale

strategia è emersa dalla sua assenza nell'industria del calcio, rivelata nel 2008 dal G14 (l'associazione dei 14 club più influenti in Europa). Il presidente dell'associazione, Jean-Michel Aulas, ha stabilito come obiettivo la valutazione delle attività sociali dei club, con particolare enfasi sulla sistematizzazione analitica per massimizzare gli impatti sociali, principalmente nel "misurare e valutare la nostra performance sociale e gli investimenti nella comunità" (G-14, 2008, p. 62). Un approccio strategico incentrato sulla SR permetterebbe al settore di minimizzare i suoi rischi (Breitbarth, Hovemann, Wazel, 2011), tradizionalmente connessi alle contraddizioni tra la loro vicinanza ai valori positivi dello sport (cameratismo, lavoro di squadra, salute, valori sportivi, connessione con la comunità locale, identità, ecc.) e corruzione, combine, scandali, frodi e altre macchie pubbliche. Oltre a questi rischi, il social washing continua ad apparire come un aspetto critico che viene esercitato in tutto il processo di implementazione della CSR. Lo sport non è estraneo a questo fatto. L'effettiva incorporazione della SR nella gestione strategica del calcio professionistico è un fattore chiave per la sostenibilità dell'attività, anche se è un processo di applicazione lento che coesiste con l'immediatezza con cui l'ecosistema calcistico solitamente opera. Una circostanza che ne genera permanentemente il ritmo, esponendolo al rischio di social washing. Così, il processo di implementazione della SR stesso, composto da una terminologia eterogenea (sviluppo, integrazione e implementazione) prevalente nella letteratura di gestione sportiva (Zeimers et al., 2018) è emerso di recente, seguendo il cambiamento guidato nel campo accademico della SR verso una ricerca più strategica, all'interno di una tendenza più orientata alla pratica, generata proprio dalle sfide e dalle critiche del social washing e anche del green washing (Maon et al., 2010). Bonini et al. (2006) suggeriscono che la consapevolezza della CSR dovrebbe essere incorporata nei processi decisionali strategici di base per scongiurare rischi finanziari e reputazionali a lungo termine. La ricerca evidenzia anche come migliorare la cultura della misurazione attraverso un sistema adeguato di standard è il mezzo che permetterebbe ai club di avanzare ulteriormente verso una vera cultura della sostenibilità e della SR. In qualsiasi forma di gestione strategica, la misurazione e la valutazione delle prestazioni è un processo essenziale nel prendere decisioni a medio e lungo termine; così come lo è anche nella performance di sostenibilità, o anche di più, data la multidimensionalità del concetto e l'importanza fondamentale che ha acquisito negli ultimi anni. Inoltre, vi è un ampio dibattito riguardo a quanto le case study possano estrapolare conclusioni e testare diversi approcci (Engert e Baumgartner, 2016). Nel caso qui discusso, siamo stati testimoni privilegiati di una situazione di difficile accesso per l'osservazione scientifica, e quindi i dati ottenuti sono rivelatori. È per questo motivo che il confronto dei risultati di questo caso di studio con altre evidenze nella letteratura specializzata può offrire paralleli che supportano argomentazioni e conclusioni che gettano luce sul dibattito e sulla mancanza di studi sulla distanza tra strategie di formulazione teorica nella SR e la loro applicazione pratica.

Limiti della ricerca. Al momento la ricerca, non ancora conclusa, si basa su un campione ridotto di club calcistici. Pertanto, potrebbero sussistere limiti di rappresentatività (per cui le conclusioni tratte dal campione potrebbero non essere applicabili all'intera popolazione) e di variabilità nei risultati (con difficoltà a individuare le vere differenze o tendenze del settore, poiché l'effetto del caso è più pronunciato).

Implicazioni manageriali. Il paper descrive l'avvento delle nuove tecnologie nell'industria del calcio e l'impatto che queste hanno sul tema della sostenibilità, della social responsibility, dell'efficientamento economico. Emergono nuove ed innovative forme di governance finanziaria che dimostrano una capacità manageriale di rispondere alle esigenze del mercato tempestivamente e con modalità estremamente efficaci ed efficienti.

Originalità del paper. La ricerca indaga su un settore, quello delle imprese calcistiche, che in letteratura è stato poco esplorato. Soltanto negli ultimi anni, per la pressione cogente della normativa comunitaria, si è iniziato a parlare di adeguamento delle strategie finanziarie dei club calcistici ai vincoli di bilancio. Per questo motivo la ricerca è nuova e originale, abbracciando tematiche di grande interesse, ma finora poco menzionate e analizzate.

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Rivelare il potenziale nascosto della natura: il ruolo del *management* nelle *public policy* per la biodiversità

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Abstract

Questo lavoro di ricerca analizza le implicazioni di *public policy* relative alla protezione e valorizzazione della biodiversità che emergono dagli studi di *management*. Considerando l'urgenza di affrontare il problema della perdita di biodiversità, emerge la necessità di strutturare un'azione immediata da parte di aziende e istituzioni. Tuttavia, l'approccio delle *public policy* in merito deve essere mirato e ben definito per affrontare efficacemente questa sfida.

Attraverso una analisi sistematica della letteratura, questo lavoro rivela che la tutela della biodiversità richiede collaborazione tra tutti gli stakeholder e politiche inclusive che coinvolgano le comunità locali e promuovano l'uso sostenibile delle risorse naturali. È cruciale anche incentivare le imprese a valorizzare i servizi ecosistemici, bilanciando l'aspetto economico con quello sociale relativo alla conservazione della natura. La multidisciplinarietà e un cambiamento di paradigma sono essenziali per affrontare questa sfida complessa, insieme a una governance adattiva che si adatti alle dinamiche socio-ecologiche in evoluzione.

Keywords: biodiversità; innovation policy; servizi ecosistemici; analisi sistematica; inclusività

Impostazione della ricerca. Le conseguenze dannose sulla complessiva prosperità economica e sociale derivanti dalla perdita di biodiversità e dal conseguente degrado degli ecosistemi naturali sono sempre più riconosciute come una impresa sfidante, che richiede un'urgente attenzione da parte dell'intero panorama sociale ed economico (Boiral and Heras-Saizarbitoria 2017; Macellari et al. 2018; Leclère et al. 2020). La gravità di tali impatti richiede un'azione sostanziale e immediata da parte di tutte le parti interessate, soprattutto da parte delle aziende e delle istituzioni (Panwar et al. 2023). In questo contesto, diventa centrale il ruolo degli studi di *management* nell'identificazione delle implicazioni di policy in grado di guidare lo sviluppo sostenibile per salvaguardare e preservare la biodiversità.

Le *public policy* relative alla Scienza, Tecnologia e Innovazione (STI) sono recentemente passate dall'essere orientate alla crescita al plasmare attivamente il futuro corso della tecnologia e dei mercati, in particolare per affrontare le sfide sociali (Bergek et al. 2023). Tuttavia, l'esplorazione empirica della relazione tra le policy STI e le transizioni socio-tecniche rimane notevolmente sottosviluppata (Borrás and Schwaag Serger 2022). Il concetto di approcci "orientati alla missione" ("mission-oriented policy"), come sottolineato da Mazzucato (2015), evidenzia l'importanza di definire con precisione gli obiettivi, le logiche e le prerogative delle policy (Diercks et al. 2019), soprattutto per evitare che policy volte ad agevolare alcuni gruppi finiscano con l'esaurire le risorse naturali, economiche ed innovative di altri (Lehmann and Menter 2018).

Alcuni autori hanno proposto la soluzione del policy-mix come potenziale approccio per affrontare le sfide sociali. Tuttavia, quello che risulta davvero necessario è un allineamento tra la letteratura delle policy per l'innovazione con la letteratura sulla gestione dell'innovazione e R&D per guidare efficacemente la transizione alla sostenibilità (Edmondson et al. 2019). Superare la resistenza all'utilizzo di nuove tecnologie da parte degli stakeholder evidenzia l'importanza di gestire la ricerca e sviluppo attraverso alleanze per l'innovazione e la co-creazione, creando sinergia tra pubblico e privato (Kemp and Never 2017). Questo panorama competitivo in evoluzione, guidato dalla rapida nascita di nuove tecnologie, richiede una nuova prospettiva sulla policy dell'innovazione, che incoraggi l'affrontare le questioni sociali favorendo allo stesso tempo lo sviluppo di nuovi ecosistemi che non siano vincolati da prospettive di "path-dependencies" (Schot and Steinmueller 2018).

Integrare quindi le letterature di *management*, gestione dell'innovazione e politiche per l'innovazione per superare la grande sfida della protezione e valorizzazione della biodiversità risulta un approccio necessario. Quindi, attraverso

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un'analisi sistematica della letteratura, con questa ricerca si vogliono sistematizzare i risultati relativi alle implicazioni di policy che emergono dagli studi di management per la conservazione e valorizzazione della biodiversità.

Obiettivo del paper. Dato che i policymaker sono regolarmente identificati come uno dei destinatari delle ricerche di management (Aguinis et al. 2022) e considerando che la questione della perdita di biodiversità deve essere affrontata dall'intero sistema economico (Dasgupta 2021), si registra una crescente necessità che la letteratura di management affronti le questioni relative alla biodiversità per contribuire concretamente alle policy. Pertanto, in questo articolo, poniamo le seguenti domande di ricerca: quali sono le implicazioni di policy che emergono dalla letteratura di management relative alla biodiversità? In che modo i risultati del mondo accademico possono supportare i policymaker sulla questione della perdita di biodiversità e modellare la futura agenda di ricerca nel campo della gestione dell'innovazione per la biodiversità?

Metodologia della ricerca: Per rispondere alla nostra domanda di ricerca, abbiamo condotto un'analisi sistematica della letteratura, utilizzando la metodologia descritta da Danese et al., (2018), Macpherson e Jones (2010) e Tranfield et al., (2003). Come evidenziato da diversi autori (Spina et al., 2013; Wang & Chugh 2014) questo approccio presenta numerosi vantaggi rispetto alle tradizionali revisioni non strutturate. In particolare, esso adotta un processo replicabile, scientifico e trasparente (Tranfield et al., 2003, p.209) che consente di: minimizzare i bias e gli errori (Tranfield et al. 2003); migliorare la qualità del processo di revisione e dei risultati (Mihalache e Mihalache 2015); confermare la validità attraverso la replicazione di fasi chiare durante il processo di revisione (Wang e Chugh 2014); sintetizzare e organizzare la letteratura accumulata in un campo specifico (Wang e Chugh 2014), fornendo spesso agli accademici e ai professionisti un quadro delle conoscenze esistenti (ad esempio Kunisch et al. 2023; Mihalache e Mihalache 2015).

Inoltre, la revisione sistematica della letteratura è un approccio versatile, ampiamente adottato in studi recenti pubblicati su riviste scientifiche di alta qualità su diversi temi di ricerca, come l'innovazione (Adams et al. 2015). Per questi motivi, riteniamo che la revisione sistematica della letteratura sia il metodo più adatto per il nostro obiettivo di ricerca, ovvero offrire una revisione sistematica e approfondita delle implicazioni di policy emergenti dagli studi di management sulla biodiversità.

La metodologia si compone di quattro fasi.

Innanzitutto, gli autori hanno ricercato "biodiversità" nei campi "management" o "business" nel Web of Science e "business, management and accounting" in Scopus, limitatamente a titoli, abstract e parole chiave, fino all'anno 2023. Il risultato è un totale di 3.455 documenti.

In secondo luogo, riconoscendo che la biodiversità comprende uno spettro più ampio di concetti, gli autori hanno ampliato la ricerca per parole chiave per includere il concetto di ecosistemi naturali. Nell'ambito della ricerca di management, esiste un corpus di letteratura in espansione relativo agli "ecosistemi di innovazione" o "ecosistemi imprenditoriali", che giustifica la necessità di una ricerca mirata su termini specifici relativi agli ecosistemi naturali. Pertanto, seguendo la classificazione dell'ecosistema globale dell'IUCN (2020), abbiamo formulato la seguente query di ricerca che contempla anche le varie tipologie di ecosistemi naturali:

(biodiversity OR "natur* ecosystem*" OR "terrestrial ecosystem*" OR "subterranean ecosystem*" OR "marine ecosystem*" OR "freshwater ecosystem*" OR "atmospheric ecosystem*" OR "ecosystem* service*")

Questo approccio ha aggiunto complessivamente 1.696 documenti alla raccolta. In particolare, questa ricerca ha restituito 830 documenti da WoS e 4.321 documenti da Scopus, per un totale di 5.151 documenti.

In terzo luogo, gli autori hanno limitato la ricerca ai documenti scritti in inglese e limitato i risultati solo agli "articoli" pubblicati. Tale selezione mirata verso gli articoli pubblicati è stata motivata dalla volontà degli autori di garantire che le politiche trattate nel documento fossero il frutto di un processo di revisione rigoroso da parte di esperti del settore. Successivamente, gli autori hanno proceduto con la rimozione dei duplicati. Infine, seguendo gli approcci di (Bonfanti et al. 2024) e (Acciarini et al. 2023), hanno filtrato in base alle riviste dell'Association of Business Schools classificate 3, 4 e 4*, che è la classifica riconosciuta a livello internazionale delle principali riviste di tutto il mondo nei settori del business e dell'economia. La scelta di concentrarsi esclusivamente sugli articoli pubblicati solo in riviste classificate 3, 4 e 4* è stata dettata dalla volontà di garantire un elevato standard di rigore metodologico e critico nei risultati di ricerca. In seguito a questa operazione è stato ottenuto un dataset finale composto da 374 documenti (con la rimozione di 2.232 documenti).

Infine, gli autori hanno condotto una content analysis degli articoli con l'obiettivo di sistematizzare le implicazioni di policy che emergono dal nostro set di dati. Abbiamo aderito all'approccio adottato da Soll e Larrick (2009) e stabilito in modo collaborativo i criteri per includere ed escludere gli articoli di ricerca. Seguendo il lavoro di Aguinis et al. (2022), è stata fatta una distinzione tra articoli che includono implicazioni di policy esplicite (cioè policy dirette) e quelli che includono implicazioni di policy non direttamente esplicitate nel documento (cioè policy indirette). Gli autori hanno analizzato separatamente i 374 articoli. Ciascun autore ha identificato e selezionato le implicazioni di policy esplicite ed implicite di ciascun articolo. Successivamente, gli autori hanno analizzato gli elementi comuni tra gli articoli e hanno condiviso tra loro i risultati.

Risultati. Dall'analisi preliminare di circa un terzo del dataset, emergono chiaramente sei punti fondamentali.

In primo luogo, la protezione e valorizzazione della biodiversità richiede una forte collaborazione e coordinamento tra tutti gli stakeholder interessati. Risulta necessario strutturare nuovi spazi di discussione e nuovi framework per esaminare e promuovere dinamiche interattive tra imprese, enti pubblici, organizzazioni non governative, agenzie di finanziamento e comunità locali. Questo approccio collaborativo è ritenuto essenziale per attuare politiche efficaci che

non solo mitigano la perdita di biodiversità ma promuovono anche pratiche di sviluppo sostenibile, andando a responsabilizzare le organizzazioni in modo efficace.

Un secondo punto fondamentale è l'inclusività delle strategie. Le policy innovative per la protezione della biodiversità dovrebbero promuovere strategie inclusive e relazioni sinergiche tra biodiversità e comunità locali. Coinvolgere le comunità indigene è prezioso, soprattutto in settori dove i rischi associati per la comunità sono molto alti. Questo permette anche di strutturare soluzioni che siano tarate al luogo dove la perdita di biodiversità deve essere combattuta. Infatti, sebbene la perdita di biodiversità sia una sfida globale, le soluzioni vanno trovate a livello locale.

Come terzo punto, emerge l'importanza di creare policy che incentivino le imprese private a valorizzare i servizi ecosistemici. Alcuni esempi riguardano la strutturazione di pagamenti per i servizi ecosistemici o compensazioni per la perdita di biodiversità (i cosiddetti "biodiversity credits"). Questo permetterebbe da un lato di incentivare le azioni di conservazione della biodiversità e dall'altro di promuovere crescita economica. La valorizzazione dei servizi ecosistemici, tuttavia, va bilanciata con policy che affrontino il problema della proprietà intellettuale in modo da evitare una eccessiva mercificazione della biodiversità, con conseguente aumento dello sfruttamento della natura piuttosto che della sua valorizzazione.

Il quarto punto che emerge è che la creazione di questo delicato sistema che coinvolge i diversi attori dell'ecosistema innovativo richiede una forte spinta verso la promozione della multidisciplinarietà. Policy e incentivi che promuovano il collegamento tra diversi settori disciplinari in modo da sviluppare approcci efficaci per il monitoraggio, la conservazione, il ripristino e la valorizzazione della biodiversità emerge come un'altra forte raccomandazione di policy.

Il quinto punto fa riferimento ad un elemento che emerge in maniera esplicita da molti degli articoli analizzati finora, ovvero la richiesta di promuovere un cambiamento sistemico nell'approccio alla relazione tra le attività commerciali (cioè attività di business) e la biodiversità. Questo cambiamento deve coinvolgere l'intera catena del valore, affinché sia evidente sia per i produttori che per i consumatori che la tutela della biodiversità non rappresenta solo un costo da sostenere, ma anche un beneficio per lo sviluppo delle proprie attività. In questo senso, le policy efficaci dovrebbero incentivare lo sviluppo di sistemi innovativi di raccolta dati che permettano una sistematizzazione e una diffusione efficace della conoscenza sul valore della protezione della biodiversità.

Infine, il sesto ed ultimo punto, enfatizza la necessità di avere approcci di governance adattivi che possano far fronte alle incertezze e alle complessità inerenti agli sforzi di conservazione della biodiversità. Le policy che enfatizzano la gestione adattiva, il coinvolgimento delle parti interessate e i processi decisionali partecipativi sono ritenute essenziali per migliorare la resilienza e la capacità di adattamento dei sistemi socio-ecologici di fronte alla perdita di biodiversità e al cambiamento ambientale. Questo paradigma di governance adattiva riflette un crescente riconoscimento dell'interconnessione tra le attività umane e gli ecosistemi naturali, richiedendo framework flessibili e reattivi in grado di adattarsi alle dinamiche socio-ecologiche in evoluzione.

Limitazioni della ricerca. L'analisi svolta finora è ancora in una fase preliminare, pertanto i risultati non sono ancora fortemente sistematizzati. Inoltre, la nostra analisi impone diverse limitazioni metodologiche. In primo luogo, la costruzione della query di ricerca specificata nelle keyword di "biodiversity" insieme alle specifiche costruzioni relative agli ecosistemi così come identificata nella sezione di metodologia, potrebbe aver portato alla non inclusione di alcuni paper rilevanti. Una soluzione ideale per ampliare il bacino di articoli sarebbe stata quella di utilizzare la keyword più generale "ecosystem". Tuttavia, nella letteratura di management esiste un forte filone di ricerca dedicato allo studio degli ecosistemi innovativi. Questa soluzione avrebbe dunque portato ad un dataset iniziale con un elevato numero di falsi positivi. Il nostro approccio cerca di ovviare a questo problema, cercando allo stesso tempo di ampliare il più possibile il bacino di articoli analizzabili.

Una seconda critica potrebbe emergere dalla limitazione agli articoli pubblicati esclusivamente in riviste dell'Association of Business Schools classificate 3, 4 e 4*. Se da un lato è pur vero che questo approccio riduce notevolmente il numero di articoli presenti nel nostro dataset, dall'altro questo permette di concentrarsi sugli articoli che presentano ricerca di alta qualità e che hanno un forte impatto sia nel mondo accademico che pratico (Crossan and Apaydin 2010). Studi futuri potrebbero considerare di non imporre questa limitazione in modo da ampliare l'analisi e verificare la robustezza dei nostri risultati.

Inoltre, la nostra revisione della letteratura è circoscritta ad articoli scientifici del settore di management. In futuro, vista la multidisciplinarietà del tema trattato, nuovi lavori potrebbero esplorare quali raccomandazioni per la protezione della biodiversità emergono da altri settori e quindi ampliare il contesto di analisi. Infine, per questa analisi abbiamo selezionato solo articoli scientifici, mentre sono stati esclusi libri, atti di convegni e documenti di policy. Studi futuri potrebbero prendere in considerazione anche questi altri tipi di pubblicazioni per arricchire la comprensione del fenomeno.

Implicazioni manageriali. Le implicazioni manageriali tratte da questo studio sono significative e possono influenzare l'approccio delle aziende nei confronti della biodiversità e dell'innovazione. Innanzitutto, le aziende devono comprendere che la protezione e la valorizzazione della biodiversità non sono solo questioni ambientali, che la tutela della biodiversità è essenziale per il successo a lungo termine e la sostenibilità del proprio business. Pertanto, è fondamentale che le aziende adottino un approccio protettivo e integrato che tenga conto degli impatti delle proprie attività sull'ambiente e sulle società. Tale approccio potrebbe iniziare con l'implementazione di programmi di sensibilizzazione sulla tutela della biodiversità rivolte sia verso i dipendenti che alle comunità locali. Questo

coinvolgimento non solo migliora la legittimità sociale delle aziende, ma può anche favorire la creazione di soluzioni più efficaci ed adatte al contesto locale.

In secondo luogo, le aziende devono adottare approcci flessibili e adattivi nella gestione delle attività. Questo significa essere pronti ad affrontare l'incertezza e a adattarsi ai cambiamenti ambientali, lavorando in collaborazione con altre parti interessate e adottando pratiche innovative. In particolare, le imprese ed i manager devono cercare di promuovere nuovi spazi di discussione e sviluppare relazioni sinergiche con enti pubblici, organizzazioni non governative e comunità locali. Questa cooperazione è essenziale per attuare le indicazioni di policy che non solo mitigano la perdita della biodiversità ma promuovono anche pratiche di sviluppo sostenibile, responsabilizzando efficacemente le imprese.

In terzo luogo, questo studio fornisce un quadro completo delle implicazioni legate alla conservazione della biodiversità. Le aziende e le istituzioni dovrebbero utilizzare queste conoscenze per sviluppare pratiche più efficaci che contribuiscano alla protezione dell'ambiente e alla prosperità economica e sociale.

Originalità del paper. Il contributo fornito alla letteratura rappresenta un passo significativo nel colmare il divario che separa la letteratura manageriale e quella di policy, con l'obiettivo primario di conseguire un migliore allineamento tra questi due ambiti. Tale impegno riveste un'importanza cruciale nel fornire una guida efficace e nel delineare un futuro percorso di ricerca per gli studi di management incentrati sulla transizione alla sostenibilità (Edmondson et al. 2019). Questo è ancora più rilevante nel caso della protezione della biodiversità, che rappresenta una sfida sistemica e globale richiedendo un approccio interdisciplinare e una collaborazione sinergica tra diversi settori e discipline.

L'importanza di questo lavoro risiede anche nell'offrire un nuovo e originale approccio che favorisce la connessione tra due corpus di letteratura spesso disgiunti, offrendo un prezioso contributo non solo alla comprensione del problema, ma anche alla sua applicazione pratica. La ricerca fornisce indicazioni per azioni e politiche che possano guidare concretamente gli sforzi volti alla protezione della biodiversità e alla promozione della sostenibilità su scala globale.

Ringraziamenti. Progetto finanziato dall'Unione Europea - NextGenerationEU - Piano Nazionale Resilienza e Resilienza (PNRR) - Missione 4 Componente 2 Investimento 1.4 - Avviso N. 3138 del 16 dicembre 2021 rettificato con D.D. n.3175 del 18 dicembre 2021 del Ministero dell'Università e della Ricerca. Codice progetto CN_00000033, Decreto Direttoriale MUR n.1034 del 17 giugno 2022 di concessione del finanziamento, CUP J53C21000290006, titolo progetto "National Biodiversity Future Center - NBFC".

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A explorative analysis on the impact of ESG and ESG 's controversies on corporate performance

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Abstract

This study aims to analyze the impact of ESG and controversies scores on idiosyncratic volatility of firm performance in the energy sector. The current study to examine the relationship between ESG, Controversy, and Volatility, considering the contextual differences and regulatory practices. In particular seeks to answer the following critical research questions: Does ESG score affect the idiosyncratic operating volatility? Does the controversy score affect idiosyncratic operating volatility? Is the legal system (common law or civil law) a driver of linkages between ESG, controversies and the firm's risk? We investigate our hypotheses on the energy sector, which is generally more exposed to the same ESG variables. The energy sector is strongly responsible for carbon emissions into the atmosphere globally due to using sources mainly of fossil origin, such as coal, gas, and oil. It alone explains the strong interest among investors in ESG compliance of companies operating in the energy industry.

Key words: ESG; Controversies; volatility; performance; energy sector

Framing of the research. Several scholars have produced methods to measure ratings and scores of ESG and controversies, as it has been widely discussed (Berg et al., 2019). However, empirical studies on the relationship between ESG and a firm's performance have provided contradictory results. While some studies show that engaging in ESG practices rise a firm financial performance (e.g., Eccles et al., 2014; Lo & Sheu, 2007; Wang & Sarkis, 2017; Fatemi et al., 2018), others have found the opposite (e.g., Brammer et al., 2006; Lee et al., 2016). Few other scholars have also suggested that the ESG score and firm's performance have no relationship (e.g., Galema et al., 2008; Orlitzky et al., 2003.) In other contributions, the authors highlight an unclear relationship between ESG scores (or ratings), expected return volatility, and stock prices. Most of such articles have been developed according to a market logic, where the capital market is implicitly assumed to operate in equilibrium conditions. Instead, assuming a capital market in disequilibrium, the positive or negative correlation between ESG and volatility comes from a risk perception (Somani et al., 2021; Landi et al., 2022) rather than the volatility of ESG investments. For that reason, we move forward to measure the effect of ESG on volatility by using accounting statements so company results are not influenced by market momentum, market frictions, and information asymmetry.

This study offers contributions to the ESG field from a risk management perspective. First, our study aims to provide empirical evidence of the link between ESG performance, controversies score, and idiosyncratic volatility measured objectively (i.e., not influenced by market perceptions). Second, the paper contextualizes how ESG and controversies act on the volatility of companies in the energy sector and operate in countries with opposing legal systems (common law and civil law), characterized by different logic that protect investors' interests. Third, the paper's output can be considered the starting point for understanding how to manage the idiosyncratic volatility arising from ESG compliance and the controversies level. In particular, this work intends to adopt a multidisciplinary approach that combines various theories: the theories defined as shareholder views, such as the theory of agency and property rights. In line with these theoretical strands, other vital contributions will be used, which are fundamental for the growth of knowledge in sustainability management. In this perspective, we use the Institutional Theory, Path Dependence Theory, Resources Theory, and finally, the studies which have investigated linkages between idiosyncratic risk and firms features (Brown &

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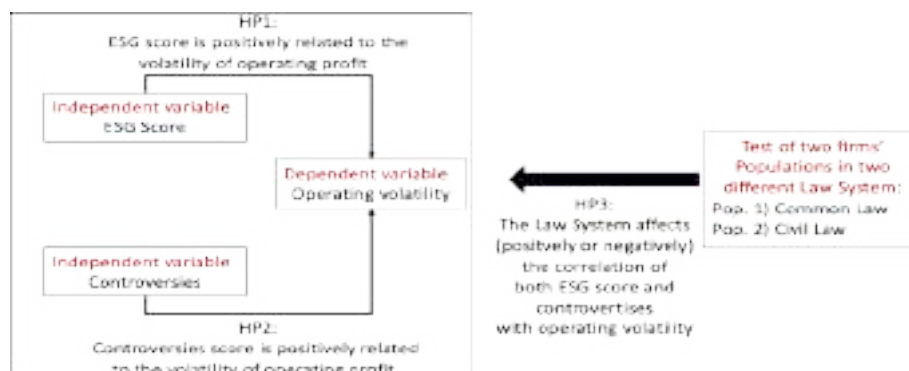
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Kapadia, 2007; Campbell et al., 2001; Cao, Simin, & Zhao, 2008; Ferreira & Laux, 2007; Irvine & Pontiff, 2009; Lee & Faff, 2009; Mazzucato & Tancioni, 2008; Panousi & Papanikolaou, 2012; Pontiff, 2006). In detail, the Agency Theory setting is very useful for understanding context's impact on our variables' behavior. In particular, we have to consider two aspects: on the one hand, the influence of the degree of protection that the context applies to the shareholders; on the other, the interpretation of the concept of ownership dictated by the regulatory context.

To fully understand the influence on volatility, it is necessary to refer to the considerations of the resource dependence theory, which introduces essential axioms regarding fixed costs because of durable resources that can be exploited in the long run. This theoretical approach allows the decomposition of operating volatility from a managerial point of view. For instance, it arises as a bridge between traditional volatility analysis and those studies tied to the Resource Based View. In this regard, Aiken & Hage (1968) identified some distinctive elements, like risk drivers, exploring organizational interdependence and intra-organizational structure. In this way, for our research, it is essential to consider the slack resources. In fact, according to the above considerations, slack resources play an important role in linking volatility analysis with internal companies' features⁶. In general terms, slack resources are linked to the operating volatility coming from ESG compliance when ESG investments imply a marginal increase in fixed costs and, consequently, higher functional profit sensitivity against business volatility (Renzi et al., 2017). The conceptual model in Figure 1 guided our study.

Fig. 1: Conceptual Model



So, the model's independent variables are the score of ESG and controversies. According to hypothesis 1 (HP1) and hypothesis 2 (HP2), the dependent variable, operating performance volatility, is positively influenced by such independent variables. The third theoretical hypothesis (HP3) is a not-neutral role of the legal system (common law and civil law) regarding the effects of the independent variables rather than operating volatility.

ESG score and HP1

The ESG score is the starting point to provide information for investors on their portfolio's risk-return profile, linking typical financial information with no financial ones, especially those related to climate change, new regulations, and governance (Aluchna et al., 2009). Cegarra et al. (2016) defined ESG as social, environmental, and economic concerns in business operations and stakeholder interaction. By analyzing a sample of around 400 firms from the EuroStoxx-600 index from 2011 to 2020, researchers discovered that the ESG score considerably affects the firm's profitability. The empirical research on the impact of ESG on financial performance and corporate worth does not provide unambiguous conclusions (Fatemi, Glaum & Kaiser 2018). In recent years, numerous studies have attempted to measure the impact of ESG factors on performance and a firm's valuation (Zhan, 2023; Chouaibi, Chouaibi & Rossi, 2022). These results suggest that prioritizing environmental and social disclosures can potentially enhance a company's return on assets. The results suggest a significant correlation between a company's disclosure practices and ROA.

Idiosyncratic risk mainly relies on elements that are peculiar to a specific company. However, scholars argue that idiosyncratic volatility is not crucial since inefficient markets' diversification process may effectively mitigate its impact. Yet, the efficiency of capital markets could be negatively affected by many factors, such as transaction costs, agency issues, and informational challenges characterized by asymmetric information. Hence, market inefficiencies amplify the significance of idiosyncratic risk, as highlighted by Mishra and Modi (2013). Horn's (2023) latest study revealed that receiving ESG scores is associated with reduced idiosyncratic stock risk. The impact is much more significant for equities with a better ESG score. While receiving a lower ESG score, corporations still exhibit much reduced idiosyncratic risk compared to equities that do not possess an ESG score.

Furthermore, equities that undergo a negative screening process have reduced levels of idiosyncratic risk in times of economic downturns in comparison to similar companies that possess an ESG score but do not undergo a negative

⁶ Slack resources, as well known, originates from the dominant coalition's contingencies, organizational characteristics, and values or beliefs (Sharfman et al., 1988). Other authors consider slack instead as an exogenous variable (Bourgeois & Singh, 1983). Although many typologies and taxonomies of slack have been created (Cohen, March, & Olsen, 1972; Cyert & March 1963; Moses, 1992), one helpful way to categorize slack is to distinguish between high and low discretionary resources (Sharfman et al., 1988).

screening process. A study conducted by Reber, Gold, and Gold (2022) showed that companies that engage in ESG information sharing have reduced levels of idiosyncratic risk compared to their peers. According to Kuo et al. (2021), an excessive focus on corporate investment in ESG activities can harm critical business operations and a company's immediate financial performance.

Moreover, the study conducted by Hurduzeu et al. (2022) indicated that companies in the energy sector observed a decline in their financial performance when they implemented ESG practices. Nitlar and Kiattisin's (2022) findings show that the implementation of vigorous ESG criteria substantially crashes the financial performance of stocks within the energy sector. However, most of the research suggests that there is a positive relationship between firms' financial success and their ESG performances (e.g., Brogi, Lagasio, 2019; Kim & Li, 2021; Aureli et al., 2020; Zhang et al., 2021; Zhao et al., 2018). These studies noticed that portfolios with high ESG scores exhibit a significant increase in excess returns compared to portfolios with poor ESG scores. Those with better ESG performance often exhibit lower levels of stock price volatility than those with worse ESG performance (Moalla & Dammak, 2023). Research findings have shown that portfolios incorporating ESG factors provide enhanced returns and decreased risk compared to traditional portfolios. ESG scores have a moderating influence on both volatility and downside risk.

Furthermore, it has been observed that firms implementing (ESG) have shown an enhanced ability to achieve greater resilience to risks (Ouchen, 2022; Reber et al., 2022; Chen, Kuo, & Chen, 2022;

Omankhanlen et al., 2021; Yoo et al., 2021). In general, we argue that the contradictory results produced so far in the literature regarding the risk-return profile of ESG are the consequence of market dynamics that are not always aligned with the corporate drivers of operating profitability and its idiosyncratic volatility. To obtain results not influenced by short-term market dynamics, we assume ESG objectives as a source of incremental operating risk because they positively influence the costs' rigidity.

Therefore, we hypothesize that:

H1: ESG score is positively related to the volatility of operating profitability.

Operating volatility decomposition

To better understand the meaning of HP1, we believe it is useful to show a brief accounting decomposition of the volatility concerning operating profitability.

Operating profitability, often known as operating income, is a conventional metric to evaluate the fundamental performance of a company's primary operations. Driving profitability is quantified by calculating the operating income ratio to net investment. This analysis assumes that the standard deviation of the operating income ratio measures idiosyncratic operating volatility. Using accounting data, this kind of volatility arises as a proxy for unleveraged risk.

Several academic researchers contend that the risk can be broken down by considering both the intrinsic volatility of a particular business and the extent to which operating profit responds to changes in revenue dynamics (Griffin, Dugan, 2003). Furthermore, it is crucial to emphasize the effect of profitability size rather than operating volatility. In other words, operating volatility is influenced by operating profitability, as shown by the Renzi et al. (2017) study, which utilizes either a predicting or historical approach. Figure 2 provides a comprehensive overview of the logical-quantitative framework used in the operating volatility decomposition, as seen from an accounting standpoint. Chung and Neethling (1989) assert that revenue volatility may be attributed to the cyclical nature of the specific sector in which a firm operates. Ross, Westerfield, and Jaffe (2002) have noted that the volatility of revenues might possess an endogenous characteristic whereby a company's inclination towards change and innovation creates strong variation in sales and selling prices.

In our study, we assume no direct correlation between ESG compliance and the level of revenue volatility. The limited impact of customer preferences and corporate reputation on revenue generation in the energy sector can be attributed to this phenomenon. However, the extent to which this phenomenon occurs is primarily contingent upon external variables, namely the fluctuation of oil and petrol prices. Hence, from our standpoint, a possible positive relationship exists between ESG compliance and the OP's volatility, mainly from internal factors. In other words, ESG compliance becomes a volatility driver when it contributes to a marginal increase in fixed costs, which serves as the critical determinant of DOL, as suggested by De Medeiros, Gustosa, and Dantas (2006). From this perspective, revenue volatility is considered a control rather than an independent variable. Moreover, the concise theoretical framework outlined in this study serves as a valuable tool for interpreting empirical findings in a managerial context. The alignment between the observed empirical results and the research hypotheses suggests that the independent variables have a discernible impact on firm volatility, which can be attributed to the underlying structural characteristics of energy sector firms. Conversely, a weak correlation between the independent variables and operating volatility would indicate that these firms exhibit greater structural stability than the influence of factors such as ESG score, controversies score, and institutional context.

ESG Controversies and H2

ESG controversies represent a novel aspect of ESG factors, including negative practices that companies may embrace. These practices include the release of waste materials, which pertains to the environmental part, the violation of employee rights, which belongs to the social factor, and the adoption of corrupt practices by managers, which refers to the governance component (Arechavaleta, 2010; Fiaschi, 2020). The ESG controversy score encompasses a total of 23 themes of disagreement.

Nevertheless, exploring disputes within ESG factors is a relatively recent development, and the current body of literature on this topic is constrained in its scope and depth. Hence, further studies on other perspectives will enhance the comprehension of the subject matter (Kuzmina et al., 2023). The notion of a "controversies score" has been a topic of

recurrent discussion within academic discourse. The field of ESG controversies is quite interesting, but it confronts obstacles owing to the lack of an established definition. Clarifying the process of establishing a plan for addressing controversies would benefit companies. Furthermore, firms need to analyze and restructure their business models thoroughly and plan to maintain their operations, particularly when they bring attention to controversial problems (Passas et al., 2022). Confident investors tend to establish a correlation between controversies and the sector within the operating companies.

Controversies can be considered observable shortcomings inside a business that possesses the capacity to have a substantial influence on both the organization itself and its financial performance (De Franco, 2020). Issa, Ayman, and Jalal (2023) claim that ESG controversies may substantially affect a company's financial performance (Sheehan et al., 2023). The occurrence of such issues has the potential to result in significant declines in shareholder value (Aouadi & Marsat, 2018).

DasGupta (2022) analyzes a global dataset including 27 countries from 2010 to 2019, aligning with a comparable research trajectory. The author argues that organizations exhibiting poor financial performance and high ESG controversies are more inclined to achieve high ESG performance. Marsat et al. (2022) primarily focus on environmental concerns and use a comprehensive global dataset between 2010 and 2016 to illustrate the significant impact of environmental performance on a company's ability to withstand and recover from shocks resulting from such controversies. De Franco's (2020) study shows a strong correlation between elevated ESG problems and the subsequent effect on stock returns for the US and European equities. Europe has a discernible phenomenon known as the surprise impact, whereby unexpected and significant reductions in debate levels tend to be linked with enduring adverse excess returns for up to 12 months after the downgrade. The individual in question does not anticipate an unexpected impact on the US, yet the market imposes penalties for gradual downgrades, which signify a worsening trend. Based on the researcher's findings, the primary factor contributing to this outcome is the significant responsiveness of markets to fluctuations in degrees of controversies in both scenarios. Based on these contradictory findings, we hypothesize that:

H2: ESG Controversies are positively related to the Volatility of operating profit

Legal system (common law vs. civil law) and HP3

Civil and common law are two primary legal systems widely recognized and practiced globally. (La Porta et al., 1997, 2008). Issacharoff and Miller (2013) illustrate that in civil law jurisdictions with a lower probability of shareholders initiating legal action against management or directors, companies have greater latitude in opting not to prioritize environmental, social, and governance.

ESG performance frequently encompasses obligations beyond regulatory mandates (Castillo & Rodríguez). Based on a recent study done in 2021, it has been noted that firms operating inside civil-law jurisdictions have higher levels of ESG performance compared to enterprises operating within common-law jurisdictions. The observed discrepancy in ESG performance might be ascribed to differences in the extent of protection afforded to investors' rights (IPR) under the respective regulatory frameworks. The notion being discussed may be defined as a set of rules and principles created to protect the rights and interests of individuals acting as investors and against unethical market participants (Clark, 1976). Investor protection law aims to provide investors with the essential information required to make educated financial decisions that align with their interests and financial characteristics (Siri & Zhu, 2019). The scholarly literature has extensively recognized the importance of a nation's national culture in shaping differences in values, beliefs, traditions, and customs among individuals and firms from diverse cultural backgrounds (e.g., Ho et al., 2012; Hofstede, 1980, 2001; Hofstede et al., 2010; Peng et al., 2012; Shi and Veenstra, 2020; Waldman et al., 2016).

On the other hand, it is also understood that the effect of ESG controversies may be shaped by contextual factors, namely the control system, which can vary between a market system and a bank system. In Common Law countries, several scholars contend that the degree of controversy may be heightened due to the delegation of control mechanisms to the market, which exhibits more vigilance in monitoring ESG standards. In this context, the level of controversy is heightened when the marketer has ownership of the firm. In contrast, civil law systems have reduced degrees of controversy due to the internal nature of their regulatory mechanism. In legal systems adhering to established norms, such as those found in common law systems, heightened shareholder activism may give rise to a greater level of contention.

In addition, the literature on path dependence has partially highlighted how the context impacts the observable behavioural dynamics within companies. Different legal systems can influence behaviours and phenomena such as moral hazard, shareholder protection and advocacy mechanisms, and the external communication actions of one's sustainability practices. In this regard, Zhang (2022) argues that firms tend to engage in ESG greenwashing activities, producing misleading disclosures under financial constraints, where the regulatory context favours this.

In common law systems, the absence of disclosure obligations has existed since 1817 (United States Supreme Court, *Laidlaw v. Organ* ruling). Indeed, there is no duty for the contractors of a agreement to reveal information of their exclusive knowledge, even when these alter the economic conditions of the relations between the parties. Indeed, misrepresentation, if unintentional, leads exclusively to rescission, a typical retrospective extrajudicial annulment of the common law system. The latter is much more exposed to controversies due to its very nature: it is a market-based system characterised by widespread shareholding, in which the first action of control is precisely exercised by the market that can evaluate the performance of companies. This is why it is very difficult for ownership in common law countries to control management's actions effectively. In this context, even small investors assume speculative behaviours (Esposito De Falco S, 2014, 2024).

Civil law economies present the opposite problem. These are bank-based systems, with access to risk capital mostly dependent on banks, with which companies establish long-term relationships. The financial system is certainly more stable and less subject to controversies, and companies, mostly family-owned, are protected by bank financing, which shields against market volatility.

However, the literature highlights how the negative relationship between CSR and the cost of equity is stronger for civil law countries. Joëla (2017), for example, emphasises how legal origin and cultural values can influence the relationship between corporate social responsibility (CSR) and the cost of equity. Common law and civil law countries (legal origin) are compared. The results suggest that companies with better CSR performance will enjoy a lower cost of equity.

On the other hand, Benlemlih and Girerd-Potin (2017) distinguish between shareholder-oriented and stakeholder-oriented countries. Initially identifying this classification with the distinction between common law and civil law countries and using a large sample of firms (1169 individual firms in 25 countries between 2001 and 2011), the authors show how Corporate Social Responsibility (CSR) significantly reduces the idiosyncratic risk of companies in civil law countries, but not in common law countries.

The effect of environmental, social, and governance (ESG) controversies on the cost of equity (COE) is even more evident regarding the mitigating role of positive ESG performances and market securities regulation. This is demonstrated by recent empirical studies such as La Rosa and Bernini, 2022 in which the authors compare negative ESG scores regarding controversies, compliance, and other negative issues. The results show how negative ESG performances, particularly environmental controversies, increase the COE, although this impact is mitigated if associated with the company's efforts to improve environmental performance. Furthermore, environmental controversies increase the COE in countries where market regulation is stronger due to greater investor expectations regarding the role of more efficient markets in controlling company controversies.

Regrettably, prior research has shown a need for more emphasis on the potential influence of shareholder activism on the extent of ESG concerns (Weick et al., 2005). Based on these contradictory findings, we hypothesize that:

H.3 The law system affects (positively or negatively) the correlation of both ESG score and controversies with the volatility of operating profitability

Purpose of the paper. The paper aims to demonstrate the existence of a direct correlation between ESG investments and controversial costs that directly affect firm performance, as well as how such a relationship is strongly influenced by the institutional diversity of regulatory and related cultural contexts.

Methodology. A statistical analysis will be conducted on a sample of companies in the energy sector based on Tobin's Q, that often indicates a company's investment opportunities and growth prospects. In the study context, Tobin's Q can influence idiosyncratic Volatility by showing the extent to which a firm is pursuing growth and expansion. Companies with higher Tobin's Q values might take on riskier projects, potentially affecting their idiosyncratic Volatility.

Table 2 details the independent, dependent and control variables.

Tab. 2: Variable Description

Variables	Symbol	Description
Dependent Variable		
Volatility of operating performance	Vol_OP	Volatility (σ) of Ratio EBIT / (Equity + Financial Debts)
Independent Variables		
EGS Score	ESG_S	Overall ESG Score of the company
		This metric quantifies the extent of a company's exposure to environmental, social, and governance controversies and adverse events, as reported in the global media.
Controversies score	CON_S	
Control Variables		
Company size	CS	Total Assets / Revenues
Liquidity	LQ	Cash / Total Assets
Revenue Growth	LR	Ln of Revenues
Tobin Q	TQ	Tobin Q value
Volatility of Revenue	Vol_RV	Volatility (σ) of Revenue

Our study assesses the influence of ESG (Environmental, Social, and Governance) and Controversies scores on the idiosyncratic Volatility of company performance within the energy sector. We aim to explore this relationship using panel data from various years and firms. The sampling period encompasses five years, from 2017 to 2022, enabling us to conduct a comprehensive and rigorous examination of the relationship between ESG and controversies scores and idiosyncratic Volatility of company performance. Data for all the study variables are extracted from the Eikon Refinitiv

database. In particular we have chosen two clusters of companies, each of fifth companies: the first belonging to the Civil law context (Italy, France, Germany and Spain), the second instead to the common law regulatory system (Australia).

Results. The findings of this study provide empirical evidence of the existence of a link between ESG performance, controversy score, and objectively measured idiosyncratic volatility in a sample of firms in the energy sector, and how ESG performance is greatly influenced by the different legal systems (common law and civil law) of the firms in the sample. In conclusion, our research has delved into the relationship between ESG (Environmental, Social, and Governance) scores, ESG controversies, and idiosyncratic risk within two legal systems. The decision to focus on firms in the energy sector has highlighted the complexity of the interactions between ESG, controversies, and the legal context, due to the substantial environmental impact and inherent social and governance challenges stemming from the sector in question. Therefore, the findings of this study provide empirical evidence of the existence of a link between ESG performance, controversy score, and objectively measured idiosyncratic volatility in a sample of companies in the energy sector, and how ESG performance is greatly influenced by the different legal systems (common law and civil law) of the firms in the sample.

Research limitations. In the research, there may be limitations of representativeness (whereby the conclusions drawn from the sample might not be applicable to the entire population) and variability in the results (with difficulty in identifying true differences or trends in the sector, as the effect of chance is more pronounced). In particular, the study exhibits limitations about the sample's narrow scope, which includes only 45 firms operating within two distinct legal systems (Civil Law and Common Law). Additionally, the number of observations made on the data from the sample's companies is limited to the last five years, and the choice of the reference sector is also a potential constraint. The investigation used a sample of companies working within the energy sector as a reference point. The research should have systematically examined the sample, considering factors such as the type involved (manufacturing and/or service) and their ownership status (public or private). Another study limitation was the failure to consider the company's affiliation with foreign corporations. Undoubtedly, this particular component has considerable importance in examining contextual effects. Consider a hypothetical scenario where a corporation functions as an international entity, engaging in operations across many industries. In such instances, the mere geographical location of a system does not inherently indicate its alignment with either the Civil Law or Common Law system.

In the future, we will consider expanding the observations by strengthening its companies' samples and data. A more advanced sampling methodology will be used. The proposed approach aims to enhance the depth of research by differentiating between service providers and energy producers within the energy sector. This differentiation will also include the distinction between public and private organizations, companies operating within a larger corporate group, and those working as separate entities. This last factor must characterize the selection of the two context samples.

Managerial implications. From a managerial point of view, the paper's output can be considered the starting point for understanding how to manage the idiosyncratic volatility arising from ESG compliance and the controversies level.

Originality of the paper. The research investigates a theme, ESG from a risk management perspective, that has been little explored in the literature. Only in recent years, due to EU regulatory pressure aimed at implementing ESG practices, has there been discussion of risk management strategies in relation to the implementation of ESG factors. For this reason, the research is new and original, embracing topics of great interest but so far little mentioned and analyzed.

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Aligning with the Sustainability Promise in ESG investing: A case study on employees ESG readiness

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Abstract

Framing of the research: ESG as an aspect of sustainable investing has been recognized as a pathway for reaching the UN Sustainability Development Goals (SDGs) and high expectations are placed on ESG investing given global sustainability challenges. ESG has been widely used as a marketing puffery which has led to regulators and other stakeholders now closely scrutinizing whether companies are living up to their ESG promises. In practice it is challenging for companies to live up to sustainability promises on the different ESG aspects. Failing to do so may harm corporate image. For an investor a sustainability promise is a commitment to focus on ESG issues in investments. Our study is inspired by promise theory: making, enabling, and keeping promises. For a company to live up to its promises, these three aspects must be aligned.

Purpose of the paper: The purpose of our study is to deepen the understanding of how investors can align with their sustainability promise and enable employees to integrate ESG in the investment work. We outline the alignment process by exploring factors that employees perceive that enable and impede alignment with the promise, and what is required to support integration in different phases of the investment process.

Methodology: The study is abductive. The qualitative action research is inspired by the Nordic School of thought and service design, which adopts a human-centered approach to development and can be applied for purposes of achieving strategic goals, such as enabling employees to align with promises. We conduct a case study in an investment firm and explore what employees experience to enhance and impend alignment. Initially we assess employees' promise readiness by a promise readiness assessment scale.

Results: Based on employees' experiences we identified factors that enhance and impend their alignment with the firm's sustainability promises. The service design inspired process encouraged employees to contextualize the overarching sustainability promise into actionable value propositions and to identify more granular tools needed for integrating value propositions into different phases of the investment process.

Managerial Implications: Alignment with sustainability promises is critical for any organization, including the investment sector. The reputation risk caused by failing to keep ESG promises has grown significantly as sustainability pledges have become commonplace in corporate communication. Therefore, alignment with the sustainability promise in different phases of the investment process requires careful consideration in a manner that enables investors to integrate the ESG aspects into their business plans. To succeed in doing so investors need an outlined alignment process, e.g., the kind that is outlined by our research.

Research limitations: Since our research is still in progress our findings are preliminary, and research on a broader basis is required. In addition, our research is conducted in Northern Europe where organizational culture may differ from the rest of Europe and the US. Thus, comparative analysis needs to be conducted between different types of investors and regions within the EU as well as globally.

Originality of the paper: Our study advances the conceptual discussion on firms' alignment with their sustainability promises in ESG investments. The results provide insights in how investors can walk-their-sustainability-talk. This is critical not only for avoiding reputation risks caused by breaking ESG promises, but also from a systemic perspective and how investors through walking-their-talk may contribute to reaching the UN SDGs.

Key words: Sustainability promises, ESG investing, Employee Alignment, Service Design, Promise readiness

Framing of the research. This paper describes a two-phased explorative, work-in-progress research on sustainable investing, focusing on employee alignment with a sustainability promise in investment work. We explore factors that enable and impede employees to aligning with the firm's sustainability promise. The first phase of the research was

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conducted in the summer and fall of 2023. The second phase of the research is work in progress and builds on the findings from the first phases of this abductive research process. The second phase focuses on exploring what tools employees perceive they need to align with the sustainability promises and what they need to maintain aligned with the promise throughout the investment process. By sustainable investing we draw on the definition by Silvola and Landau (2021:3), i.e., that "...investment decisions are based on ESG (environmental, social and governance) information that is essential for each company, in addition to traditional financial figures".

ESG investing is established as a possible pathway to reach the UN Sustainability Development Goals (SDGs) (Delgado-Ceballos et al., 2023), and investment has had an historical role in transforming the economy (Penna et al, 2023). However, currently only a fraction of the UN SDGs are on track and high expectations are placed on ESG investing given the global sustainability challenges. There is a shared agreement on that more capital must be deployed in sustainable investing to meet the UN SDGs. However, the actual increase in ESG investing is far from sufficient to meet the goals (Penna et al, 2023).

In practice, it is challenging for companies to live up to sustainability pledges on the different ESG aspects and the expectations these promises raise among different stakeholders (Kossofsky, 2021). Nonetheless, failing to do so may include non-financial risks that may harm corporate valuations. When investors fail to invest in alignment with their sustainability promises, they also contribute correspondingly less to the transformation towards a more sustainable society.

A sustainability promise is often an abstract promise of ethical action (Rasche et al., 2017, and a commitment made by a company to focus on environmental, social and governance (ESG) issues. During the past decade there has been a huge increase in sustainability-charged pledges in different sectors. For instance, large banks and institutional investors have made green pledges that when/if fulfilled "have the potential to contribute markedly to a low carbon transition" (Glomsrød and Taoyuan, 2016: ii). A promise is a psychological contract with embedded moral and ethical aspects (<https://plato.stanford.edu>) about the possible future value that its fulfilment will create for stakeholders (Grönroos, 2009). People expect that promises are kept (Vanberg, 2008). However, there are growing concerns of companies mostly "talking-the-sustainability talk" (Kaplan, 2024), i.e., not truly integrating ESG. Simultaneously, there are claims that the transition towards more sustainable growth may be supported by integrating ESG criteria into investment strategies.

An investor's overarching sustainability promise provides the broad outline for its investment work. However, to actualize the promise, employees need to contextualize the meaning of the oftentimes broad statement (Liewendahl and Heinonen, 2020). In other words, to invest in alignment with the investors' sustainability promise requires that employees understand what is meant by the promise.

Exploring alignment with sustainability promises through contextualization of it into actionable value propositions on the different aspects of ESG and into the different phases of the investment process advances our understanding of how firms can walk-their-sustainability talk. Ultimately alignment with the promises means that employees improve their ESG promise readiness. By ESG promise readiness we mean "what it takes for employees to function in alignment with the mission statement" (Liewendahl et al 2023). Readiness requires a set of abilities, including financial competences and other human assets (ibid).

As ESG lacks a common theorisation, ESG investing is complicated and complex (Pollman, 2022; Larcker et al., 2022). What ESG actually is and how it should be implemented remains unclear and diverging views exist on the purpose of what exactly ESG is aimed to solve (Larcker et al 2022). Furthermore, the varying set of standards, frameworks, metrics and rating providers' valuation methods contribute to ESG challenges when integrating ESG in practice (Pollmann, 2022; Larcker et al, 2022). Actors in the field are often concerned about risks, measurements and uncertainties relating to ESG investing (Gassmann et al, 2021). On a macro level, there exists some agreement on what ESG is trying to solve as stipulated in reporting regulations and legislation, but it remains on a high abstraction level. The regulatory and legislative efforts, such as the EU taxonomy and reporting regulation offer frameworks for large corporations and assist CEOs, boards, and CFOs in reporting (Silvola et al, 2024). The reporting should reflect the firm's strategy since ESG investing is a strategic issue (Silvola et al, 2024). However, if investors measure and report their impact only to prove it without improving their impact, it cannot be expected they will live up to their promise of making the world a better place (Roor and Maas, 2023). Moreover, the public declaration of ESG as the advocate for doing good and contributing to socio-economic transformation, does not mean it is easy to apply to practise, as there is a lack of a general readiness structure for this (Gorbunov et al, 2023).

The fact that sustainable finance and ESG investing differ from traditional investment norms complicates the firm internal alignment with the investors overarching sustainability promise. Sustainability- and ESG investing are commonly seen vehicles to create an impact while generating financial returns, i.e. through incorporating environmental, social and governance factors in the investment process (OECD report 2020, Pollmann 2022) thereby adopt a broader focus compared to traditional investment aiming at increasing shareholder profits. To align with the implications of a sustainability promise broadens the agenda to include "do good" aspects.

Duangaard and Ding (2022:17) claim that "current theories fail to offer useful insights into the disparity in ESG performance, whereas (Sheenan et al, 2023) note that one challenge to ESG performance is due to actors lacking ESG literacy. Furthermore, to achieve meaningful ESG performance firms must adopt an ESG mindset (Sheehan et al 2023). This implies that listed corporations not only need to adapt to the ESG regulations in their reporting, but also must learn to develop an ESG mindset to apply ESG in practice. Thus, one goal for alignment with the overarching sustainability promise is to create a shared and coherent ESG mindset among employees about the meaning of the sustainability promises and its operational implications. Changing mindsets involve changing perspectives and often people are fixated

with old mindsets (Chou and Tversky, 2020), which makes the creation of new mindsets troublesome, as people easily stay stuck in old habits.

Mindsets, i.e., our meaning systems, are based on attitudes and beliefs and direct our thoughts and actions (Dweck and Yeager, 2019). In addition, emotions as well as beliefs of our abilities affect our mindsets. Individuals have different mindsets about different abilities (Gunderson et al., 2017), i.e., mindsets are contextual. Mindset are distinguished into fixed and growth mindsets and affect our breadth of attention and how we learn (Doerflinger and Gollwitzer, 2020; Karlen et al 2021). A growth mindset is the belief that intellectual ability can be developed (Yeager and Dweck, 2020) and a fixed mindset draws on the belief of trait-like abilities (Karlen et al, 2021). Further current research suggests a neural interplay between a growth mindset and intrinsic motivation (Ng, 2018). Yip, 2018 suggests that there is a missing link between the sustainability mindset and motivation, and Muff (2022) suggests that firms need to move from ESG risk management towards a positive impact mindset, which requires a dual mindset transformation, both on the organizational and leadership level. Malhotra and Pachauri (2022) suggest leaders must engage employees and nurture a positive mindset towards ESG and engage employees in ESG strategies by employee buy-in ESG strategies. For employees developing an ESG mindset may involve creating new attitudes, beliefs and abilities that are compatible with the implications of the sustainability promise.

Factors that may impede the potential of ESG/sustainable investing include traditional financial system as well as intermediaries that operate without ESG mindsets. For instance, Park and Lee (2024) suggest that traditional investment shareholder capitalist norms of maximizing financial returns may impede ESG investing, including abiding to fiduciary duty, managing quantifiable risks, and focusing on short term returns (Friede, 2019).

Caetano et al (2023) argue that the investment community must undergo a significant cognitive shift to recognizing the long-term importance of investing for systemic transformations in various industries, that generate both monetary and nonmonetary value. The concept of transformative investing contributes to the practises of ESG and impact investing, offering a lens for assessing investment opportunities and monitoring progress toward the system changes required to achieve a sustainable and socially just transition. (Caetano et al, 2023).

Thus, it remains for each individual firm not only to decide upon its strategy of applying the ESG philosophy of “doing good while doing well” and how to communicate about it, but consequently aligning with this promise and integrating it into the investment process. Further, incorporating ESG into practice needs to be done in a way that minimizes the risks of breaking the ESG promises. To do this the organization needs to ensure it is aligned with its “do-good” promise and its staff is enabled to live up to it. That is, its promise theory aspects, giving, keeping and enabling promises are aligned. Consequently, each organization needs to reflect upon the question of how the alignment with the promise is accomplished. This was well expressed by one of the participants in our case study, who perceived that ESG investing requires clarity on what exactly actors are trying to solve, and for whom?” Such clarification surely is relevant for many investors to explore when they aim at aligning with do-good charged promises and integrating their sustainability pledges into their investment process.

To conclude, for an organization attempting to live up to its sustainability mission and operationalize ESG investing, it means creating a firm-internal mindset that embraces the different ESG factors. This in a manner that enables the creation of a shared? mindset among the staff members, and thus enhance the firms ESG readiness. This will enable staff members to function in line with the firm’s sustainability promise and its implications in practice, i.e., in their investment work, and thus advance their ESG readiness. Seen in this light, for a firm to adopt an ESG mindset requires transformation, which requires learning, which eventually if experienced as motivating by staff members enables buy-in of the sustainability strategies. This may optimally advance the infusion of a “positive impact mindset”. Therefore, it is essential to initially identify what employees perceive impact aligning with the organizations’ sustainability promise.

We have published the results of the first part of our research in a working paper. In the first part of the study, we explored what factors impede and enable staff members to align with the investment firm’s overarching sustainability promise. In the second part of the research, we focus on a) what tools staff members perceive they need to align and to stay aligned with the sustainability promise, and b) how to integrate the sustainability promise into the investment process.

Purpose of the paper. The purpose of the paper is to describe our two-phased, explorative and abductive study on employee alignment with sustainability promises in ESG investing. The purpose of our study is to deepen the understanding of how investors can align with their sustainability promise and enable employees to integrate ESG in the investment work. By exploring factors that employees perceive that enable and impede alignment with the promise, and what in their view is required to support integration in different phases of the investment process we outline the alignment process.

Methodology. Our methodology draws upon the traditions of the Nordic School of service research (Grönroos and Gummesson, 1985; Gummerus and von Koskull, 2015). The Nordic School focuses by tradition on solving real-world problems by performing action research in case studies (Gummesson, 1988). The study is abductive and uses empirical data and theory in exploring a phenomenon (Gadde and Dubois, 2002). Its analysis is inspired by constructivist grounded theory, i.e., iteratively formulating working hypotheses and generative questions drawing (Charmaz, 2000). Grounded theory (GT) is a general analyses methodology for qualitative research aiming at developing theory that is grounded in data (Strauss and Corbin, 2007). Theoretically, our study draws upon promise theory, transformative research and research on sustainable investment. Combined and intertwined with the empirical data, our analyses contribute to promise theory and transformative service research as well as sustainable investing by advancing our understanding of

investors alignment with their sustainability promises as an aspect of integrating ESG in their investment work. The approach in our research is inspired by a co-worker orientation which draws upon co-workshop (Tengblad 2007; Andersson et al., 2020) and humanistic management that initially was introduced by Mary Parker Follett. Central to humanistic management is that it builds upon a practical ontology, co-active power sharing and integration of experiences from a wide-enough scope (Godwyn and Gittel, 2012).

In the first phase of the study, workshops and qualitative interviews were conducted throughout a 6-month long process. Employees' experiences were identified, described, and analyzed. An ESG promise readiness assessment, using Vianalyze the changes in promise readiness that transpired during the action research. The attributes that the promise readiness scale assesses are employees consciousness and understanding of the overarching sustainability promise as well as their competences and willingness to integrate the mission statement into the investment process.

By adopting a co-workshop stance the focus is on employees and their needs, when exploring factors that enable and impend the alignment with the firm's overarching sustainability promise. The research is ongoing and currently we conduct phase 2 of the study and explore what type of tools employees perceive they need to enhance alignment with the sustainability promise and integration it into the various phases of the investment process. This is done by qualitative interviews and workshops inspired by Service Design (see e.g., Eskelinen et al, 2017; Vignoli et al, 2021).

The research questions we pose are:

1. Phase I: What impediments and enhancing factors for aligning with the overarching sustainability promise do employees experience?
2. Phase II: a) What tools do employees perceive they need to align and maintain aligned with the sustainability promise? b. What capabilities are required (in ESG investing) to advance alignment?
3. What supporting tools do employees perceive they need in the different phases of the investment process to a) create- and b) integrate actionable value propositions throughout the investment process?

The case in phase one

Our case study in phase one of the abductive, service design inspired research was conducted in an investment firm in Northern Europe. The firm strives to invest in targets with a credible ESG (environmental, social and governance) strategy. Responsibility is the firm's strategic star and a prerequisite for long-term value creation.

The case organisation had successfully been working with its sustainability mission for quite a while. By participating in our action research, the firm wanted to further advance the integration of its sustainability promise and advance on operationalization of the practical implications of the sustainability promise. The specific goal was to advance the contextualization of the promise while simultaneously contributing to research that aims at developing an outline for a firm-internal promise alignment process that can benefit other similar organizations.

Phase two of the study

In phase two we continue the findings from phase 1 and the generative questions that emerged during the research. The generative questions draw upon the empirical material as well as the other current relevant research findings that advance our understanding of the phenomenon explored. In line with service design principles used in phase one of the study, we do in phase two of the study focus on the second part of the SD double diamond process, creating and testing tools for solving the challenges identified in phase one of the study. Hence, as the question of what abilities are required for integrating the sustainability promise into the investment process, is a relevant question that has not yet been replied by current research. Hence our research continues in an abductive manner, by exploring both empirically and by using literature as another informant, to answer this question.

Generally, alignment with promise requires a long-term focus (Grönroos, 2009), and an out-side in focus (Grönroos, 2017) i.e., living up to value expectations evoked by promises on a relational base. A long-term perspective is beneficial in ESG investing context alike (Silvola and Landau, 2021). In this light it is relevant to focus on alignment by contextualizing the overarching promise into actionable value propositions throughout the investment process. To do so we explore the creation and integration of actionable value propositions at various phases of the investment process, i.e., alignment tools and in addition tools that help employees to maintain aligned with the sustainability process throughout the investment process.

To answer research question 3, i.e.: What supporting tools do employees perceive they need in the different phases of the investment process to a) create- and b) integrate actionable value propositions throughout the process?

Initially draw upon the framework by Agrawal and Jespersen, (2023) i.e., 1) The Context: social and economic conditions, stakeholders and founding principles, 2) Investment focus, 3) venture analysis, 4) decision making and 5) decision point to outline the ESG investment process.

Results. The data we have acquired and analysed so far in our research contribute with insights in factors that impede and enhance the alignment with the overarching sustainability promises and cues on how to proceed in our exploration as stated in research questions 2 and 3. The results from phase one are discussed regarding the readiness assessment and factors that enhance and impend alignment with the sustainability promise.

The readiness assessment and factors that enhance alignment with the sustainability promise

To answer research question one, i.e., what enables and what impedes alignment with the sustainability promise we initially conducted a promise readiness assessment to calibrate the current ESG readiness state in our case firm. This

scale assesses readiness regarding 4 different ESG readiness attributes on a 7-point Likert scale. The assessment also includes open-end questions.

For the case firm the results were excellent, and the results were supported by the open-end questions. Out of the explored attributes we found that one aspect that in general may advance ESG readiness is focusing on exploring, establishing, and reinforcing capabilities required in ESG investing. As current research shows ESG investing may require other than traditional analytical skills of employees, and what these may have not yet to the best of our knowledge been explored and defined on a detailed level. This initial finding opens up for interesting questions to explore in more depth and guide us in phase two of our study.

During phase one of our study, we identified the following factors that enhance employee alignment with the overarching sustainability promise: 1) Legacy and strong social heritage, 2) A long-term focus (in investments), 3) Flexibility, 4) High ambition and willingness to align and live up to the sustainability promise statement, 5) Pride and 6) A strong focus on sustainability. All these identified factors were found to facilitate employees in aligning with the promises and correspondingly supporting them in their work. For instance, the perception that sustainability is an inherent legacy and heritage and an operational value for the firm, may in itself gear ESG investing forward. Factor 2, a long-term focus is in line with current literature on sustainable investing that advocate a long-term perspective in ESG investing (see e.g. Silvola and Landau, 2021). In our case employees perceived that long-term focus as beneficial as it broadens opportunities to function in alignment with the sustainability-charged promise.

To adopt a systemic view on the factors that enhance employee alignment with the sustainability promise we conducted a constellation analyses. That is, we depicted the identified factors as elements in a constellation, as depicted below. We analyzed the relationship between these in relation to one of the generative questions: What enables us to align with our sustainability promise?

A constellation analysis as done in our study facilitates

Figure 1. Constellation analyses on findings from phase 1 acknowledging the systemic workings in a context. The identified factors are portrayed as elements in a constellation. Analysing the factors in relation to each other advances the systemic understanding or the relationship between the factors and how these factors in this case reinforce each other. A change in any of the factors will (probably) have spill-over effects on the other factors.



Factors that may impede alignment with the sustainability promise

Based on the abductive analyses in the first phase of our research we found that the following factors may impede alignment with the sustainability promises: Insufficient contextualization of the overarching sustainability promise, b) not well-defined ESG criteria to support investments, and c) insufficiently integrated value propositions into the investment process.

Based on these findings the research is now in progress and proceeds into its second phase. Our methodology is the same as in phase one but in phase two we focus on the 3rd and 4th phases of the service design process and consequently focus on creating tools that support the alignment as posed by the research questions. We also explore specific competencies and capabilities required for integrating actionable value propositions in ESG investment. Our initial findings are supported by other researchers. For instance, Leins (2000) argues that analysts need to develop skills for creating imaginaries and narratives about possible future in financial market development.

Through our abductive exploration we found that one major issue related to ESG investing and aligning with an sustainability charged promises is the current conceptual confusion. A variety of views on the financial aspect of ESG and the implementation of ESG co-exist (e.g., Sciarelli et al., 2021; Cappucci, 2018), and these are not necessarily congruent, even if most researchers and a growing number of practitioners agree that ESG investing can impact communities wellbeing and protect the environment (Gangi et al., 2021). But concerning employee alignment with overarching sustainability pledges, the theory on sustainability and ESG investing offers scant support. Aldowaihs et al (2022) found that only a few researchers have focused on exploring how to integrate ESG factors into business models. But as Malhotra and Pachauri's (2023:38) claim "ESG has emerged as a key factor in engaging today's workforce." Consequently, other literature streams may offer support in outlining this specific aspect of integrating ESG into the business plan and investment process.

Our case study shows that when aiming to create a firm internal ESG mindset and aligning investment work with the overarching sustainability promise contextualising the promise into more specific, detailed, and actionable value propositions is essential. However, this is not sufficient as such. As our generative questions reveal the fit of the actionable value propositions need to be explored in more detail and related to the different phases of the investment process.

During the first phase of our study, we identified factors the enhance and impede alignment with the sustainability promises. Throughout the research we formed generative questions that advance our research and guide the second phase of it. Our initial findings suggest that when considering alignment in terms of tools that support employees to align and stay align as well as integrating the promise into the investment process a systemic approach is required. Based on our current understanding integrating the sustainability promise into the investment process and considering ESG aspect throughout, brings in a circular back-and forth movement throughout the process.

We applied the idea of bottom-up strategizing which means seeking strategic input from other than managers (Liewendahl and Heinonen, 2020). This seems to be beneficial in alignment in general regardless of sector, and advances alignment also in investment work. Utilising service-design inspired methods in the alignment process enables contextualizing overarching promises into more specific, actionable value propositions with input from employees. This seems relevant when exploring the integration of the sustainability promise on a more granular level into the investment process as the next phase of alignment. Moreover, this seems logical because employees are to apply the value propositions in the operations, and by contributing to the creation of the value propositions employees gain ownership or and proximity to value propositions. Consequently, the propositions authentically articulate the tangible value that employees contribute to creating in practice. This way, the promised value aligns more closely with the reality of employees, accurately reflecting what they need to do in practice.

Based on our abductive analyses, we can conclude that there seems to be a consensus among researchers that sustainable investments can be challenging to operationalize in practice. This may be due to the confusing use and plethora of concepts, and that the operational aspects lack structural readiness, e.g., readiness to align with ESG promises. Some remedy is offered for listed companies that must apply required reporting standards (Silvola et al 2024), but nevertheless the investment sector currently faces significant changes and uncertainties in its transformation towards sustainable investing (Welch and Yoon, 2022). For some, ESG investing may imply major, and even somewhat diffuse adjustments in operations. Consequently, employees may face novel situations and uncertain requirements in their investment work, and we hope our research offers a remedy on this aspect.

Research limitations. Since our research is still in progress our findings are preliminary and research on a broader basis is required. In addition, our research is conducted in Northern Europe where organizational culture may differ from the rest of Europe and the US. Thus, comparative analysis needs to be conducted between different types of investors and regions within the EU as well as globally. Further readiness assessments using the ESG readiness assessment scale need to be conducted in order to make generalizable conclusions on factors that impend and enhance alignment with sustainability promises and outline a more generally applicable alignment process.

Managerial implications. Alignment with sustainability promises in ESG investing is critical for investment firms who strive to uphold the promised value to their stakeholders and to avoid reputation risk. The reputation risk caused by failing to keep ESG promises has grown significantly as the sustainability pledges have become common in company communication. Therefore, alignment with the sustainability promise in different phases of the investment process requires careful consideration. Specifically, for staff members that have not previously been involved in the firm's official communication design the integration of the sustainability promise in different phases of practical investment work may be challenging. How and when a promise is contextualized into actionable value propositions on a granular level that enables integration of the ESG aspects in each phase of the investment process alignment with the sustainability mission statement is advanced and the firm's promise readiness is improved.

To conclude, alignment with the sustainability mission is a tedious and challenging process. By contextualizing the mission statement into actionable value propositions and fitting these into each phase of the investment process advances the creation of a coherent ESG mind-set which in turn advances the firms ESG promise readiness. Inspiration for the alignment work is found in the process we have outlined based on our case study. However, it seems reasonable to argue that every investor faces different challenges that correlate to their sustainability promises and their applicability in terms of broadness.

Originality of the paper. Our paper advances the conceptual discussion on firms' alignment with their sustainability promises in ESG investing and provides insights in how investors can walk-their-sustainability-talk. This approach to exploring ESG investing is scant and is in its early phase. Insight in alignment with sustainability promises is critical not

only to avoid reputation risks caused by breaking ESG promises, but also from a systemic perspective and how investors through walking-their-talk may contribute to reaching the UN SDGs.

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Food Waste and Out-of-Home Consumption Patterns: Unravelling the Actual Consumption Behavior of Food Taken Away and Consumed at Home

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Abstract

Reducing food loss and waste (FLW) is crucial to ensure more sustainable food systems. A growing body of literature has discussed the use of food-sharing platforms and the practice of taking home leftovers after dining out as a viable approach to mitigate the phenomenon. However, a critical gap persists as none of these studies systematically assess the actual consumption of this food at home and its correlation with post-consumption waste. This study bridges this gap by leveraging primary data from an innovative application to quantify FW generated both out-of-home and brought-home. Indeed, it specifically focuses on two distinct types of FW: surplus food sold by restaurants to consumers and leftovers taken away by consumers. Drawing from the experiences of 574 respondents, the results reveal an 88.2% FW volume saved, affirming the potential of food-sharing platforms and the use of doggy bags in mitigating FW. Additionally, significant variations of consumer FW patterns, in terms of dining preference and socio-demographics, are captured in the comparative study on the generation of the two types of FW. For instance, both groups emphasize a notable pattern of high FW associated with single diners and the consumption of the first main dishes; while, in terms of demographics, in accordance with the literature, the findings reveal that younger consumers are more inclined to waste food than older ones. In summary, this study makes a substantial contribution to the theoretical and practical framework for measuring and tracking the actual consumption of out-of-home food brought home, unveiling intricate correlations with post-consumption waste and providing a deeper understanding of consumer perspectives on FW behavior. These insights are essential for developing targeted and engaging consumer-centric FW mitigation practices.

Keywords: food waste, sustainability, food sharing app, post-consumption waste, doggy bag; food waste management.

Framing of the research. FLW is one of the main obstacles to transitioning to sustainable and circular food systems. Although FLW is generated at various points in the food supply chain, most occur during the final stages. Indeed, 931 million tonnes of FW were generated from retail to consumption levels in 2019. Of this, households contributed 61% and food services contributed 26% (UNEP, 2021). Consequently, the need to prevent and mitigate FW in these contexts has become a key priority both from a scientific and practical standpoint (Principato et al., 2021; Dhir et al., 2020; Filimonau et al., 2022; Principato et al., 2018; Talwar et al., 2023).

In response to this urgency, efforts to minimize FLW has led to the development of digital technologies and new business models (UNEP, 2021), such as the food-sharing and redistribution business models challenge (Ottolenghi et al., 2022; Michellini et al., 2020). Moreover, in the realm of food left by consumers after being served, previous studies indicate that the use of takeaway boxes (commonly known as doggy bags) could be a viable solution to reduce FW (Secondi et al., 2020; Principato et al., 2021; Talwar et al., 2021).

Although FW within the food service context has recently become a focal point for researchers, there is a limited number of studies focusing on consumer behavior related to FW in out-of-home dining (Talwer et al., 2023). Some studies have investigated consumers' values and behaviors when dining out, shedding light on aspects such as pro-environmental behavior and attitudes toward waste reduction (Filimonau et al., 2020; Kim and Hall, 2019), while others have shifted their research focus to a previously unexplored aspect: leftovers and the use of doggy bags (Talwer et al., 2023; Dagiliute and Musteikyte, 2019; Stöckli et al., 2018). However, these have predominantly focused on the decision-making process

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(Dagiliute and Musteikyte, 2019; Miroso et al., 2018) rather than delving into what happens at the post-consumption stage, particularly when leftovers are taken home. Besides this, although food-sharing platforms and the use of doggy bags have been widely acknowledged as effective tools to mitigate FW within food service establishments, there remains a significant gap in understanding whether the food brought home through these methods is consumed (Talwar et al., 2021; 2023) and how certain variables are related to this post-consumption waste. Therefore, a more comprehensive examination of how these solutions contribute to minimizing FW is necessary.

Purpose of the paper. This study aims to fill the existing research gaps by gathering primary data via the Regusto innovation, focusing on FW generated out-of-home and brought home, while also examining the functionality of the Regusto innovation. Two types of FW are considered: surplus generated by the restaurant and sold to consumers using a food-sharing platform, namely the Regusto app; and leftovers from consumers' takeaways using a doggy bag, namely the Regusto bag. Based on such premises, the following research question has been investigated: Can food-sharing platforms be deemed as an effective solution for reducing FW? Is there any quantitative analysis to support this claim?

Methodology. The present research examines the potential of two types of Regusto innovation, namely Regusto app and Regusto bag, in addressing the FW problem. The Regusto app allows consumers to buy meals at reduced prices from restaurants. Here, at the time of collection, the meals are stored in the Regusto Bag, a box that redefines the traditional concept of take-out and doggy bags. During the research, the Regusto Bag was used not only to take away meals bought by consumers but also to carry away leftovers generated by consumers in restaurants. To track FW related to leftovers or surplus meals placed in the REGUSTO Bag, a QR code linked to a specific customer survey was implemented. This QR code facilitated the monitoring of FW resulting from the food taken home using the Regusto Bag.

All data was collected through the utilization of the QR code inserted into the Regusto bags, which were used for takeaway activities by the consumers. By scanning the QR code with a smartphone, consumers would be invited to complete the questionnaire. In the questionnaire, participants were asked to provide information both before and after consuming meals from the Regusto bag. This process involved participants reporting their estimated food consumption in grams and indicating the time taken to consume the food from the Regusto bag. This data collection process aimed to gather insights into food wastage patterns and to evaluate the effectiveness of the Regusto innovation. In addition, participants were given the option to upload photos showcasing any unconsumed food items. This visual input allowed for a direct comparison of the food consumption proportions attributed to the use of Regusto bags.

Data entries were collected during the summer (May to September) and winter seasons (November to January) of 2022 and 2023 among 6 participating restaurants, which differentiate themselves in various business types (burger, pizzeria, restaurant, etc) and with different food type offerings and business models. Out of these food outlets, two offer dine-in services exclusively, while the others provide takeaway services as well. Food types are mainly categorized as first main dish, second main dish, pizza, sandwich, side dish, dessert, and others. All three main meals and an additional aperitif are available throughout the day. A total of 574 observations formed the base sample for subsequent analysis after necessary data cleaning and correction. Consumers' out-of-home dining activities were described with by-event factors such as transportation methods and weekdays. Purposes of using Regusto bags, food quantity in doggy bags (in grams), food consumption time, number of consumers, and reasons for leaving some food wasted, were acquired to enrich consumers' post-consumption patterns following the use of Regusto doggy bags. The survey sample covered a wide range of residential areas, including 23 distinct cities across 7 regions in Italy. The survey also considered demographic features such as gender, age, profession, education, income, area of residence, and family status. Household FW disposal methods were included as a proxy for FW behaviour. Via the survey, we have invited consumers to self-assess the potential economic benefit of the use of the Regusto App.

The final dataset identified 4 food consumption levels with the question "How much food is not consumed and remains after using the doggy bag?". The answers were further transformed to the percentages of food consumption in a doggy bag (0%, 50%, 75%, and 100%) with the variable of the total volume of food in a doggy bag. 417 out of 547 respondents (72.65%) reported zero waste after using the doggy bags followed by the post-consumption FW percentages of 25%, 50%, and 100% (Table 2). Similarly, a high zero waste existed in the sub-groups, of which the doggy bags were used for saving meal leftovers and takeaway meals made with food surplus, 68.57% and 72.91% respectively. Given this fact and the relatively small sample size, a Binary Logistic Regression Model was implemented after defining consumers' FW patterns at the post-consumption stage (0= a certain level of food wasted, 1=zero food waste) as the final target variable.

On the other hand, our dataset was divided into two major respondent groups according to the survey question "With what purpose do you use the Regusto bag, meal takeaway or meal leftover at the restaurant?". Meal takeaway represented the takeaway food orders placed by the consumers on the Regusto app which listed meal offers prepared with food surplus by the participating restaurants; meal leftovers indicated the clients' plate waste after their dining experience at the participating restaurants. FW quantification and description analysis were carried out separately and comparatively to reflect the potential difference in the FW patterns and behaviours between the two groups.

Results. Among 574 respondents, 35 consumers (6.1%) used Regusto bags to save their meal leftovers after dining out (Group M), and the remaining 539 (93.9%) were Regusto App users and ordered takeaway meals that were prepared with surplus food by the participating restaurants (Group T). 262,343 grams of food were taken with Regusto bags. FW percentage at the post-consumption stage was 23.6% for Group M and 11.4% for Group T, furthermore, respondents who reported wasting all food in Regusto bags in Group M reached 8.6% - a much higher percentage than Group T. 19.7% of the respondents shared their reasons for wasting food from the Regusto bags. 10% of those respondents from Group M shared that the changed taste of meal leftovers prevented their further consumption, meanwhile, in Group T, this was not reflected.

In Group M, 82.85% of respondents used Regusto bags to save their meal leftovers from restaurants, with 65.7% using them for lunches. The majority preferred to take home the leftovers from their first main course and expressed a dislike for using public buses. Consumers in Group M were mature (54.3% aged between 39 to 65 years) with a high proportion of people (45.7%) with an individual income of more than 1500 euros per month. Cost-saving was highly recognized as a value of Regusto bags in this group (avg. = 8.97). In comparison, Group T were not frequent clients of restaurants, meanwhile they ordered more for dinners (64.75%) and used public buses sometimes. Dessert and sandwiches were popular in Group T, but not the first main. Demographically, Group T was younger (10.4% aged between 39 to 51 years) with less income. Organic waste bins and home composting were popular in this group.

Consistent FW patterns examined with high FW rates and quantities existed in sub-segments who walked to the restaurants during dinner time or could not finish the first main dishes in Group M. The waste rate of the mentioned segments ranged from 19% to 42% approximately. Only restaurant clients used Regusto bags to take meal leftovers for further consumption. Single diners contributed the highest FW volume (83.4%), but a large dining group (4 to 6 persons) reported the highest waste rate (25%). In a week, Saturday and Monday shared a high FW rate (27.3% and 25%), meanwhile, Saturdays contributed the highest wasted food amount (73.6%). In Group T, only the different FW quantities by categories were noted. The pattern of high FW amount was captured in the consumer segments who drove to the restaurants for dinners, dined without companions, or tried to consume the food leftover within 1 day. FW volume of these categories contributed from 63% to 83% to the overall measure. First main dishes exhibited the highest waste rate (19.3%), although the waste amount was much lower than other types.

The results of post-consumption FW rates and quantities were mostly consistent in Group M. Respondents who reported high FW patterns were mostly males, aged between 13-25 years, living in small to medium towns or cities, with a lower educational background (up to short-cycle tertiary education), or from a small family (2 to 4 persons). Attention was especially drawn to students who reported a high FW rate (46.4%). Both low-income (less than 1000 euros per month) and high-income groups (more than 2000 euros per month) reported a relatively high FW rate (38.5% and 25% respectively). FW volumes measured were diverse in Group T. Consumers who left more food wasted were mostly females, had permanent jobs, held a Bachelor's or Master's educational background, had an income level between 500 to 1500 euros, or were from a small family (2 to 4 persons) no matter with children or not. The FW volume proportion out of the total by these segments ranged from 32% to 91%. Special attention was paid to individuals from small families or who had an income from 500 to 1500 euros, as very high FW quantities were reported in these two sub-groups (91.5% and 67.4% out of the total FW volume). Seniors in this group (39-51 years) held a higher FW rate (27.7%) but the slightly younger age group (26-38 years) contributed the highest FW quantity measured in grams which was more than half of the total reported by this group. Group M and Group T did not show significant divergence in FW behaviours and perception of FW mitigation – unlike the results obtained from dining scenarios and demographics. Regarding waste disposal methods, respondents in Group M, who do home composting, wasted the most (50% of FW rate); meanwhile, in Group T, respondents who throw away their household FW in organic waste bins and for home composting reported the higher FW rates (13.4% and 12.2% respectively). In both groups, people who held a neutral-to-positive opinion towards the cost-saving benefit of the Regusto App reported a higher FW rate (24% to 35.7%).

Despite the small sample size of Group M, we carried out an ANOVA test on the percentage of the final food consumption between the two groups, however, no significant difference was shown ($p=0.37$). The regression model was implemented only in Group T. In the group of explanatory variables relevant to dining scenarios, dining with companions influences the post-consumption strongly and positively ($p<0.005$; $OR>13$). The first main dish and sandwiches are negatively and weakly relevant to post-consumption ($OR<0.3$; $p<0.05$); a similar result was observed for Tuesdays, and the amount of food ordered and taken away by Regusto bags. Consumers who took public buses to the restaurants tended to consume their food leftovers at the post-consumption stage ($OR=2.56$; $p<0.05$). Demographically, despite weak results regarding profession and education, a relatively strong and positive correlation was only displayed by the senior age (39-51 years) with post-consumption ($OR=2.22$; $p<0.05$) – a result contrary to the descriptive analysis. People with permanent jobs or self-owned businesses, and who are students, are less likely to finish the food although the correlation is relatively weak ($OR<0.5$; $p<0.1$). Education level reaching PhD or equivalent negatively correlated to the consumption of food ($OR=0.56$; $p<0.05$). Additionally, consumers with children are more likely to waste food ($OR=0.48$; $p<0.05$). In the assessment of FW behaviours and perception of FW mitigation, organic waste bins, waste bins, and low ratings of cost-saving (rate=1) are positively related to post-consumption. However, the cost saved in euros has no significant influence on the final post-consumption. McFadden's R squared is one of the most common and simple tests to assess the robustness of the logistic regression model. We achieved a value of 0.43 which passed the test with moderate approval. Then, we plotted the ROC (Receiver Operating Characteristic) curve to evaluate the model accuracy (Goodness of Fit in Logistic Regression, McGill University). A large proportion of the area under this curve (AUC) indicates a good overall fitness of the model with an AUC score of more than 80%. Therefore, we conclude a proper explanatory power and estimation accuracy of our model.

Research limitations. Some limitations exist within the scope of this research that should be acknowledged. First and foremost, the study's sample size of 574 respondents, while providing valuable insights, may not be fully representative of the diverse population engaging in out-of-home dining and utilizing food-sharing platforms. Secondly, the geographical focus on Central Italy in this study may restrict the applicability of the findings to other regions with potentially different cultural, economic, and social dynamics. The study's reliance on self-reported data from respondents

introduces the possibility of social desirability bias and memory recall issues. Respondents may provide answers that align with perceived socially desirable behaviors, and the accuracy of their recollection of FW-related incidents might be influenced by various factors, potentially leading to a level of response bias. Furthermore, the study primarily focuses on the Regusto app and Regusto bags, and while they are illustrative examples, the generalizability of the findings to other food-sharing platforms and doggy bag practices may be limited. Further research is needed to address limitations in sample size and explore more accurate post-consumption data. As AI and machine learning technologies continue to advance, researchers may have the opportunity to assess more accurate post-consumption data.

Managerial implications. The findings of this study have important managerial implications for stakeholders in the food industry, particularly restaurants and policymakers aiming to address FLW. Firstly, the results highlight the potential of food-sharing platforms and the use of doggy bags in mitigating FLW. For restaurant managers, the adoption of digital technologies such as food-sharing platforms can contribute to sustainability goals and also generate additional revenue.

The study underscores different levels of consumer engagement and the effectiveness of FW reduction concerning meal leftover takeaway and surplus food takeaway. There is no one strategy for all - different takeaway intentions and types of food must be considered when designing the strategies to encourage the practice of consumer FW reduction. For instance, when addressing the change in taste of leftovers, it is important to provide information on food preservation, reheating tips, and recipes. More transparent and effective communication about availability, quality, and types of surplus food by restaurants might further decrease the post-consumption waste by consumers. Furthermore, the insights into variations in consumer behaviours and FW patterns based on dining preferences and demographics provide valuable information for targeted interventions. Restaurant managers can tailor their approaches to different consumer segments and dining scenarios, such as single diners, younger consumers or small families, to further foster a culture that values minimizing post-consumption waste. Furthermore, the correlation between the perceived cost-saving benefits of Regusto and reduced food wastage suggests that emphasizing economic incentives can be an effective strategy for engaging consumers in FW mitigation practices.

Originality of the paper. The originality of this paper lies in its comprehensive approach to addressing the issue of FLW within the context of out-of-home dining and the use of food-sharing platforms. While existing literature discusses the role of food-sharing platforms and the practice of taking home leftovers, this study goes beyond by systematically assessing the actual consumption of acquired food at home and its correlation with post-consumption waste. Furthermore, this study contributes to the literature in mainly two aspects. Firstly, through the Regusto innovation it gathers primary data specifically focusing on FLW generated in both out-of-home and brought-home dining scenarios. The latter, considered a post-consumption measurement, introduces fresh insights for evaluating the effectiveness of FLW mitigation methods. Secondly, the inclusion of micro-level and territory-level data from the Regusto case study addresses a gap in the analysis of consumer profiles, providing valuable insights for targeted interventions in food waste mitigation practices.

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The role of Paradox mindset on the intention to implement Industrial Symbiosis: linking Paradox Theory and Theory of Planned Behavior

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Abstract

This study aims to investigate the role of operational managers' paradox mindset in the intention to implement Industrial Symbiosis (IS) solutions within European manufacturing organizations. The transition to circular business models offers opportunities for optimizing resource and waste management. However, despite the potential for sustainability, the adoption of circular economy (CE) practices has been limited. Many studies have identified barriers to CE implementation, including internal-individual obstacles such as perceived operational disruptions and risk aversion. Operational managers play a crucial role in navigating these tensions, but the lack of their intention to adopt IS remains unexplained. Paradox theory offers insights into individual-level barriers, emphasizing tensions between seemingly conflicting yet interrelated aspects.

Through a cross-sectional questionnaire survey with 400 European operational managers in the manufacturing sectors, the study clarifies the relationships between paradox mindset, leadership support, and intention to implement IS solutions., examining the mediating role of attitudes, subjective norms, and perceived behavioral control. Additionally, it introduces the concept of paradoxical leadership as an antecedent to operational managers' paradox mindset, promoting a culture supportive of managing contradictory demands.

Expected results will contribute to understanding the role of individual-level factors in organizational sustainability transition assuming a paradoxical perspective.

Key words: paradox theory, theory of planned behavior, paradox mindset, intention, individual level, industrial symbiosis.

Framing of the research and Purpose of the paper. *When organizations engage in Industrial Symbiosis (IS), i.e., changing from conventional linear business models to circular business models (Baldassarre et al., 2019), they exploit the full potential of inter-organizational resource and waste management. However, despite its potential to transform businesses into more sustainable ones, the uptake of circular economy (CE) is slow so far (Ghisellini et al., 2016; De Angelis, 2020). Many studies have tried to explain this discrepancy by identifying barriers to CE implementation, focusing both on external-collective barriers (e.g., market and regulatory barriers) and internal-individual barriers (e.g., perceived disruption of operational streams, risk aversion and lack of expertise) (De Jesus and Mendonça, 2018; Herczeg et al., 2018).*

Because the implementation of IS solutions (i.e., CE solutions between organizations) needs some structural and behavioural changes within the involved organisations, decision-making tensions between new and habitual actions arise. Typically, operational managers are confronted with navigating these tensions while implementing IS solutions within organizations (Golev et al., 2015). In their role, operational managers need to pursue seemingly contradicting roles, as they implement IS solution in an otherwise XYZ-driven organization. While previous research found that operational managers need to navigate the internal-individual barriers to implement IS, it cannot explain the lack of operational managers' intention to adopt IS within companies (Golev et al., 2015).

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Paradox theory might explain such individual-level barriers in implementing IS solutions (e.g., Daddi et al., 2019; De Angelis, 2020), as it focuses on tensions between aspects apparently in contrast, but also in synergy with each other (Smith and Lewis, 2011). Therefore, by applying a cross-sectional study design with 400 European operational managers and building on the theory of planned behaviour (TPB), we analyse how operational managers' individual level of acceptance and energization by tensions (Miron-Spektor et al., 2017) (i.e., paradox mindset) influences the intention to implement IS solutions by the operational managers. The study analyses the role of attitudes, subjective norms, and perceived behavioural control as mediators between paradox mindset and the intention to implement IS solutions. Moreover, to analyse quantitatively how the organisation could support workers in developing a paradox mindset, this study introduces the variable paradoxical leadership as an antecedent to the operational managers' paradox mindset by creating a supportive culture that encourages and rewards the ability to manage contradictory demand (Boemelburg et al., 2020; Yin, 2022).

Theoretical background and Hypothesis development

Paradoxical tensions and IS

Because IS requires the adoption of novelties in the organisation, it could elicit both learning tensions, defined as "tensions between building upon and destroying the past to create the future" and learning-belonging tensions, defined as "conflicts between the need for adaptation and change and the desire to retain an ordered sense of self and purpose" (Smith and Lewis, 2011). Difficulties in adopting CE within organisations have been recently interpreted from a paradox theory perspective (Daddi et al., 2019; De Angelis, 2020). Regarding IS, only Schlüter et al. (2022) started to illustrate some paradoxical tensions but linked them to the tasks of IS facilitators. Implementing IS solutions makes companies complement incoming by-product streams with original raw materials (Bain et al., 2010) and this requires support from upper and intermediate management for its successful employment (Golev et al., 2015; Taqi et al., 2022). Therefore, structural changes within the involved organisations can be necessary and decision-making tensions between new and habitual actions can appear. Specifically, the adoption of IS solutions can influence previous operational streams (e.g., inventory management, purchasing of raw materials and planning of production with multiple material sources) (Frohlich and Westbrook, 2001; Vachon and Klassen, 2007; Herczeg et al., 2018), taking operational managers feeling tensions between the need of implementing something new and useful to achieve more environmentally friendly targets and their habitual way of working. Golev et al. (2015) mentioned the relevant role of operational managers in adopting IS solutions within organisations, to investigate technical solutions and synergy opportunities without disentangling how their individual characteristics toward the paradoxical tensions associated with IS can affect their intention to adopt IS within companies.

Paradox mindset and the intention to implement IS

Paradox mindset refers to "the extent to which one is accepting of and energised by tensions" and individuals who carry it tend to value, accept, and feel energised by tensions (Miron-Spektor et al., 2018). Considering the adoption of organisational novelties, innovative and habitual actions are considered in tension with each other (Miron-Spektor et al., 2011; Miron-Spektor and Erez, 2017). Scholars started to analyse how the paradox mindset motivates individuals to promote innovative solutions, when tensions between new and habitual actions can appear within the organisation (Liu et al., 2020; Liu and Zhang, 2022). However, a specific focus on the potential power of paradox mindset in influencing operational managers' intention to adopt IS within companies is still missing in literature.

Paradoxical leadership as a paradox mindset antecedent

Zhang et al. (2015) defined paradoxical leadership as "leader behaviours that are seemingly competing yet interrelated, to simultaneously and over time meet competing workplace demands". In order to analyse quantitatively the leadership support to subordinates in developing a paradox mindset, this study introduces the variable paradoxical leadership as an antecedent to paradox mindset by creating a supportive culture that encourages and rewards the ability to manage contradictory demands (Boemelburg et al., 2020). According to the recent qualitative study by Yin (2022, page number), paradoxical leadership could promote subordinates' paradox mindset "by helping them learn to face, cope, and live with tensions".

Fostering a paradoxical mindset through paradoxical leadership can help to create a culture where workers are more comfortable with paradox and better able to manage complex and ambiguous situations. Moreover, when leaders help their subordinates reduce stress and anxiety and build confidence through work practices and training, followers learn to cope with tensions. Consequently, subordinates' capacity to live with tensions can increase and they can develop the paradox mindset. Considering the context of this study, the following hypothesis about operational managers as subordinates has been defined:

H1: Paradoxical leadership is positively related to operational managers' paradox mindset.

Mediation between paradox mindset and the intention to implement IS

Having a paradox mindset can make you prone to manage complex (paradoxical) situations (Miron-Spektor et al., 2018); however, the intention should be measured, to also have a better prediction of the potential behaviour (Armitage and Conner, 2001). Furthermore, to engage in innovative and complex actions (such as IS), operational managers should hold a strong sense of agency, which is described as a desire to intentionally make things happen by means of their own actions (Ng and Lucianetti, 2016). According to the Theory of Planned Behavior (TPB), individual intention already has three antecedents, i.e., perceived behavioural control, subjective norms, and attitude (Ajzen, 1991; Armitage and Conner, 2001). This study analyses operational managers who are not taking choices just for themselves, but they have impact on the organisation through their intention. While the traditional formulation of the TPB does not explain the link between

the individual and the organisation, it has been used in many organizational settings, such as the organisational change context (e.g., Jimmieson et al., 2008), where we posit our study and the implementation of IS. Considering these aspects, the following three hypothesis have been defined:

H2: Perceived behavioural control mediates the relationship between operational managers' paradox mindset and intention to implement IS.

H3: Attitudes in IS context mediates the relationship between operational managers' paradox mindset and intention to implement IS.

H4: Subjective norms in IS context mediates the relationship between operational managers' paradox mindset and intention to implement IS.

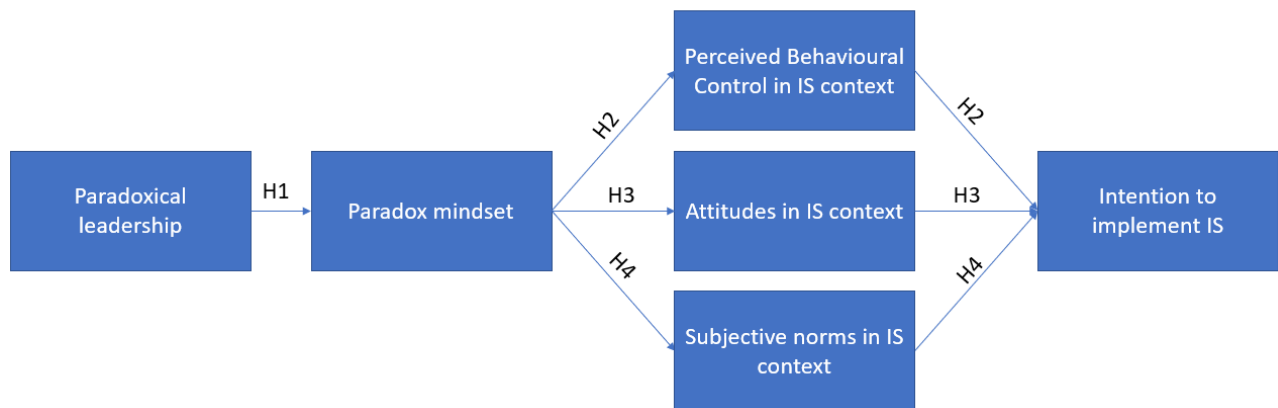
Figure 1 summarizes all the aforementioned hypotheses.

Research Methods

Drawing the coordinates

To test our hypotheses and conceptual model (see Figure 1), we employ a cross-sectional survey design. We survey top and middle level operational managers, due to their relevant decision-making role in the adoption of IS solutions within organizations (Herczeg et al., 2018; Golev et al., 2015). Sectors within the manufacturing industry (i.e., chemical, cement, pulp and paper, steel and iron, and refineries) are involved in the study, based on their high propensity of implementing IS solutions (Neves et al., 2020). The sample is drawn in the European context, specifically from the top four countries in Europe (i.e., Germany, France, Italy, Spain), in terms of market size and population (World Bank, 2023; Eurostat, 2022). Moreover, the fair variety of socio-cultural aspects within each country and between countries (Kaasa et al., 2014) makes these four countries an appropriate context for a representative research at the individual level. The survey was designed based on an extensive review to find the most reliable, acknowledged, validated scales to measure our constructs. Then, a professional service provider launched the survey, and a pre-test was conducted with 50 individuals in September 2023. This pre-test generated some improvements to the reliability of the survey instrument, boosting the clarity and readability. Furthermore, the final questionnaire was translated into the respective languages of the sample countries to ensure greater comprehensibility and a consequently higher quality of the answers. We are in the final data collection phase.

Figure 1: Conceptual model



Measurements. Paradoxical Leadership and Paradox Mindset were measured through the nine-item scales provided respectively by Sparr et al. (2022) and Miron-Spektor et al. (2018). TPB constructs (i.e., attitude, perceived behavioural control, subjective norms, and intentions) were defined from the “change-related” scale by Straatmann et al. (2017). The original items were slightly adapted to better address both the IS context (i.e., Industrial Symbiosis instead of change) and the operational managers as respondents (i.e., term company in brackets). We also added one item about the supervisor's commitment to IS processes, to outline the subjective norms linked both to the IS context and the operational managers as completely as possible. For all the scales described above, we used a Likert's response scale from 1 to 5 (i.e., from strongly disagree to strongly agree). Given the cross-sectional survey design, we adopted several procedural remedies for minimising the risk of common method variance bias and social desirability (i.e., clear sentences, no ambiguous terms or complex concepts, anonymity, and attention check) (Podsakoff et al., 2003; Cerri et al., 2019). Moreover, we decided to assess social desirability bias through the BIRD-16 scale by Hart et al. 2015. This scale allows to assess the two components of socially desirable responding: self-deception (i.e., the respondent has an overly positive impression of himself or herself and believes his or her self-reports) and impression management (i.e., the respondent consciously misreports to deceive others) (Paulhus, 1984). Furthermore, the ATCB scale by Miller and Simmering (2022) was chosen as an attitudinal marker variable to control for common method bias after the data had been gathered (Spector et al., 2019).

Expected results. The final data collection is expected to be finished at the end of March 2024 and the full data analysis will be completed in the full paper.

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Managing the business and biodiversity relationship: a Systematic Review

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VINICIO DI IORIO⁵

Abstract

In recent years, the management literature has shown a growing interest in biodiversity, leading to an increase in studies examining how companies relate to biodiversity. Although valuable, this stream of literature remains fragmented, hindering a systemic understanding of the relationship between business and biodiversity. Through a systematic literature review, we conducted an in-depth analysis of 97 articles to provide a holistic and detailed picture of the elements and dynamics underlying the relationship between business and biodiversity. To this end, the review investigates the drivers and barriers of corporate biodiversity management, types and roles of stakeholders involved, strategic approaches, and main outcomes.

Key words: business, biodiversity, ecosystem, strategies, review, sustainability.

Framing of the research. *The well-being of current and future generations is linked to the ability of the society to effectively address what has been identified as the greatest challenge of the 21st century: safeguarding Earth's life-support systems (Griggs et al., 2013). Addressing this challenge necessarily means putting in place actions to protect natural capital and biodiversity, which is intrinsically associated with the health of the ecosystems that sustain life on the planet (Rahman et al., 2024). Reflecting the relevance and urgency of this challenge, the United Nations has counted biodiversity loss within the concept of the Triple Planetary Crisis, along with climate change and air pollution. Framing these environmental crises within a unified concept emphasizes their interconnectedness, highlighting the complexity of environmental phenomena (Whiteman et al., 2013). Despite the (growing) recognition by international organizations, governments, and scholars of the importance of protecting natural capital, half a million species are expected to decline in the coming decades. Such catastrophic loss of biodiversity will manifest its detrimental effects directly on the health of natural ecosystems, with knock-on effects on climate change and air pollution (Panwar et al., 2023). The implications of biodiversity decline are not limited to the natural environment (or ecological system), but also fully involve the entire society (or socio-economic system), in which companies are central players and whose role deserves to be explored further. Indeed, companies rely on the ecosystem services provided by nature to carry out their activities. At the same time, by making use of the ecosystem services, they generate an impact on biodiversity and ecosystems, potentially undermining their balance. The connection between companies and biodiversity/natural ecosystems is characterized by the dual relationship of impact and dependence (Winn & Pogutz, 2013). The delineation of such relationship allows to grasp the full integration of companies within the whole socio-ecological system, showing how their activity (and anthropogenic activity more generally) presents a symbiotic link with nature.*

Despite the centrality to the Planet's balance of understanding the relationship between business and the natural environment, the dynamics underlying this relationship have often been overlooked or misinterpreted (Hoffman & Jennings, 2015). Scholars have often focused only on how companies can strategically respond to environmental challenges to gain competitive advantages, aligning mitigation actions with short-term economic benefits (Figge & Hahn, 2021). Such an approach, however, emphasizes an anthropocentric view that implies a simplistic and reductionist consideration of the complex mechanisms that link companies to the natural environment. This deficiency can be overcome by broadening the perspective of analysis through a systems approach, in order to take into account the

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intricacy and complexity of the mutual dynamics underlying the relationship between the socioeconomic and the ecological systems, and not compartmentalize the interpretation of them.

Purpose of the paper. Notwithstanding the pivotal role of biodiversity in maintaining the equilibrium of the social-ecological system, only in recent years the management literature has begun to show a more consistent interest and commitment to this issue. As a result, there has been a surge in studies aimed at investigating how companies relate to biodiversity and how they can implement strategic and operational solutions to halt or reverse its threatening trend of decline. These studies focused on diverse elements, actors, sectors, methods, and levels of analysis. However, although valuable, these contributions remain disjointed, and their fragmentation is likely to hinder a comprehensive understanding of the complex dynamics underlying the interplay between companies, biodiversity and natural ecosystems. An articulate and holistic understanding of such relationship - necessary to interpret it consistently with a systems perspective - has yet to be achieved. In order to fill this gap, we carried out a systematic literature review drawing on a multi-database search. Through a systematic literature review, we aim to conduct an in-depth analysis of 97 articles to provide an organic and articulate representation of the relationship between business and biodiversity according to a systemic view that considers the potential stakeholders involved, their roles, the types of biodiversity organizational strategies and practices, and their drivers, barriers, and outcomes.

Methodology. Following the PRISMA approach, this study conducts a systemic review of the empirical and theoretical literature on business and biodiversity.

The first publication on business strategy for biodiversity appears in 1994 and the last included in the review is published in December 2023. So, the research includes all published articles from 1994 until 2023.

This review relies on two scientific databases, Web of Science (WoS) and SCOPUS, as they are among the most commonly used, recurrent, and reliable (see, e.g., Haffar & Searcy, 2017). The search focused on titles, abstracts, and keywords fields in the WoS and SCOPUS. In order to ensure breadth in article search, the keywords included in the query were "company" or synonyms (i.e., "business", "organization" and "firm") and "biodiversity" or related elements (i.e., "ecosystem services" and "natural capital").

Only scientific papers were included in the review. The sample was limited to the subject area of "Business, Management and Accounting".

The sample was extracted in two databases (WoS and SCOPUS) twice (first in April 2023 and then in December 2023). Duplicates were deleted.

The adopted query allowed the extraction of 565 papers on business and biodiversity relationship, 513 emerged from the first round of extraction and 52 from the second.

Three exclusion criteria were applied to identify the sample:

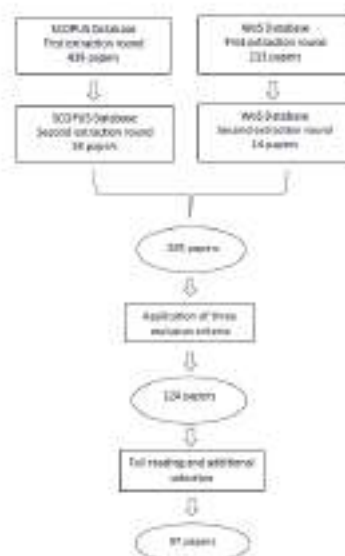
- Papers not focused on the business-biodiversity or business-natural ecosystems/natural capital relationship.
- the relationship is not concerned with one or more organizations as businesses, public organizations, and NGOs, but involving other parties as States, consumers, policy makers etc.
- Papers focused exclusively on biodiversity accounting and measurement practices.

The three exclusion criteria were applied reading title, abstract and keywords of each research. So, from the 565 articles, we select 124. We reviewed the full text of 124 articles. This left us with 97 articles.

An excel matrix included all dynamics to detect in each paper such as barrier for the strategy adoption, drivers, role of stakeholder, outcomes. Finally, we clustered similar research findings.

Figure n. 1 shows the adopted methodology to select the sample.

Figure 1 Adopted method for sample defining.



Results. Results introduce the main preliminary finding from the literature review.

Features of organization with a relationship with biodiversity.

The literature review shows how research mainly investigated organizations with a biodiversity relationship of impact and dependency too. They are companies that directly rely on natural resources and ecosystem services but at the same time generate an impact on them that could put the company itself at risk. This is common in studies on the forestry, food, cosmetic, mining and the many other sectors of the sample.

The review shows the prevalence of certain sectors in business and biodiversity research. Studies have involved companies from multiple sectors that discuss biodiversity in a more general manner. In many other cases, the papers investigated the biodiversity strategies linked to one specific productive sector. The most investigated are food and beverage, forestry, mining and tourism. Of the 97 articles, in fact, fourteen report practices implemented by companies in the food industry, nine in tourism, eight in forestry, and five in mining. Studies refer also to the textiles, agriculture, pharmaceuticals, cosmetic and other manufacturing sectors. Articles on forestry and mining take a whole ecosystem approach, while in articles on food and tourism, references to species numbers and types also prevail.

Stakeholders' roles in BE&ES strategies

According to a systemic perspective, the interpretation of the interplay between companies and biodiversity/natural ecosystems is not limited to the analysis of a "one-to-one" relationship, but requires the consideration of a wide range of stakeholders who may be influenced by or involved in corporate biodiversity strategies and practices. These stakeholders can be both external and internal to the companies.

External stakeholders' roles

Pressure exertors - The rapid decline in global biodiversity has heightened social pressures on companies. These pressures stem from various stakeholders. Public institutions use regulatory mechanisms to prompt corporate biodiversity action (Panwar et al., 2023), while civil society groups (e.g., NGOs and social movements) leverage media influence and activism to grant social legitimacy (Anthony et al., 2023). Supply chain actors can decide to monitor environmental performance of the supply/value chain, pushing corporate customers or suppliers to protect natural capital (Atupola et al., 2023). Consumers' preferences may influence companies towards biodiversity practices and transparency (Boiral & Heras-Saizarbitoria, 2017). Financial institutions can exert pressure by considering in their investment decisions biodiversity risks affecting corporate profitability (Boiral et al., 2018). Finally, local/indigenous people can mobilize to ensure that their rights are respected and that corporate practices that protect the natural ecosystems and biodiversity of their lands are adopted (Puppim de Oliveira et al., 2022).

Facilitators and collaborators - Certain stakeholders may facilitate corporate biodiversity strategies and practices implementation. For instance, technology providers can equip companies with devices for monitoring biodiversity and taking corrective action (White et al., 2023). Public institutions can promote ecosystem protection regulations (Feger & Mermet, 2022). Supply chain actors can share best practices and ease access to evidence (Palakshappa et al., 2023). Certification bodies encourage the adoption of biodiversity standards (Boiral et al., 2018). Industrial associations can offer guidelines for proper biodiversity management to member companies. Finally, the collaboration with experts, consultants, research centers, and local communities can provide operational input and guidance (Smith et al., 2020).

Hinderers, custodians and adversely affected groups - Corporate biodiversity protection strategies can be hindered by the activities of other actors in the socio-economic system. It happens when an integrated and systemic approach with respect to the management of natural ecosystems is lacking. Without coordination with legal frameworks, consistent and harmonious practices along the supply chain, and respectful behaviors by consumers and local populations, corporate biodiversity efforts may be ineffective (Duensing et al., 2023). At the same time, local/indigenous peoples can also take on the role of biodiversity custodians due to their deep knowledge of land peculiarities and the related management practices (Antolin-Lopez et al., 2022). Some myopic Western conservation approaches, tend to conflict with the culture, well-being, and rights of indigenous peoples, negatively affecting them (zu Ermgassen et al., 2022). Balancing corporate strategies with indigenous rights and cultural values remains crucial for effective biodiversity conservation.

Internal stakeholders' roles

Triggers - Biodiversity strategies can originate from different levels within organizations, driven by top managers, middle/operational managers, and employees/workers. Top management's environmental consciousness and understanding of the business-biodiversity relationship are crucial in initiating protection strategies, often following a "top-down" approach (Issa & Zaid, 2023). Middle managers also play a role in diffusing biodiversity practices due to the concomitance of awareness of operational impacts and decision-making authority (Boiral et al., 2019). Finally, workers, especially those "in field", directly witness corporate operations' impact on natural capital and ecosystem functionality. Their firsthand experience can compel them to advocate for biodiversity protection, fostering a "bottom-up" influence on managers and top management (Barrington, 2001).

Levers - Middle/operational managers and workers/employees, due to the more "pragmatic" characteristics of their job roles, represent key players in the conversion of corporate biodiversity strategies into concrete practices. In this

sense, they can be considered the organizational members to be leveraged to internalize, implement and apply biodiversity practices effectively in the company (zu Ermgassen et al., 2022). Therefore, initiatives like outreach and training are necessary to enhance their understanding and awareness of the relationship between business and biodiversity and their environmental/ecological knowledge, in order to stimulate compliance and proactive nature-protection behaviors (Boiral et al., 2019).

Drivers and barriers of B&ES strategies

The analysis identified four overarching categories, which synthesize enablers and barriers to B&ES strategies, discussed below.

Issue salience

Lacking understanding of B&ES poses an internal obstacle: this relates with decision-makers' ability to interpret the company's relationship with B&ES (Quarshie et al., 2021). This understanding is hindered by the intricacies of supply chains, which challenges decision-makers in evaluating impacts and dependencies occurring off-site, and accessing information from distant partners (Panwar et al., 2023). Cooperation with supply-chain partners thus emerge as an enabler of B&ES strategies (Shah et al., 2019). Political forces may serve a twofold role in reducing barriers to biodiversity management: regulations can exert coercive pressures that directly challenge companies' "license to operate", thereby forcing biodiversity management (Krause et al., 2021); political support also manifests through soft and voluntary policies (Boiral et al., 2018).

Economics and market factors

Cost pressures stem from companies' reliance on ecosystem services and natural capital, and may result from increasing costs of raw materials and inputs (D'Amato et al., 2018), and expenses associated with regulatory compliance (Krause et al., 2021). Barriers also arise from the scarcity of financial resources (Adler et al., 2018). Similarly, market opportunities and competitive advantages may drive the integration of B&ES concerns into operations: these include access to new markets or expanding existing market share (Barbosa et al., 2018). Lack of market rewards and financial support represents the flip side of this scenario: market actors may not reward companies that take proactive measures on B&ES (Ferber & Mermet, 2022), while public authorities may neglect incentivizing mechanisms (Krause et al., 2021).

Knowledge and capabilities

Numerous studies highlight how the lack of adequate knowledge and learning mechanisms impedes B&ES strategies (Smith et al., 2020). Key capabilities to measuring, monitoring and reporting B&ES aspects (Reale et al., 2018; Adler et al., 2018), as well as accounting impacts and improvement objectives that reflect a credible commitment rather than impression management (Haffar & Searcy, 2018; Zu Ermgassen et al., 2022). Technical challenges arise from the absence of recognized methods or standardized tools for biodiversity management, leading to operational uncertainties (Krause et al., 2021). This pertains to measuring impacts and dependencies on natural capital, due to limited consensus on appropriate metrics (de Silva et al., 2019).

Culture and value orientation

Studies emphasize -environmental values, ethics and organizational culture as facilitators of B&ES strategies (de Silva et al., 2019). These help mitigate resistance to change, which could otherwise undermine B&ES initiatives (Ferber & Mermet, 2022). Conversely, the lack of commitment and long-term vision, notably from top management threatens the embeddedness of B&ES concerns in corporate strategies (Macellari et al., 2018). Organizational members' awareness, personal involvement and knowledge about local biodiversity is also recognised as an enabler of a positive relation between business and biodiversity (Boiral et al., 2019).

Strategic approaches towards B&ES

The landscape of strategies to mitigate biodiversity and ecosystem services (B&ES) loss is complex and evolving. Utilizing a classification from Panwar et al. (2023), strategies like compensation, reparation, conservation, and restoration are evaluated for their commitment and long-term impact, ranging from exploitative methods to investments in B&ES conservation. Among these, conservation strategies stand out for their dominance and effectiveness.

Compensation, an initial strategy, focuses on off-site preventative measures. Thompson (2019) advocates for Payments for Ecosystem Services (PES) as exemplary corporate environmental stewardship. The goal is achieving no-net biodiversity loss (NNL) or a net-positive impact (NPI). A longitudinal analysis by de Silva et al. (2019), surveying sixty-six global companies from 2001 to 2016, found only a third maintained active NNL and NPI commitments, questioning the long-term benefits and reputation impact of these strategies.

Reparation, a reactive strategy with limited empirical backing, aims to mitigate B&ES loss through compensatory actions, like those observed in initiatives for rubber plantation diversification to address deforestation, noted by Cho et al. (2022). Despite intentions, the effectiveness of reparations is debated due to potential encouragements of monoculture practices, inadvertently reducing biodiversity.

Conservation is the primary, proactive approach, entailing direct measures by companies to protect B&ES. This is evidenced in numerous studies and initiatives worldwide, including biodiversity emphasis in Sri Lankan tea plantations (Atupola et al., 2023), the Sal de Aveiro project in Portugal for sustainable salt production (Martins et al., 2020), and

biodiversity integration in Finnish forest management (Primmer, 2011) as outlined by Reale et al. (2022), Puppim de Oliveira et al. (2022), Feger and Mermet (2022), Atupola and Gunarathne (2023). These examples demonstrate the impactful role of institutional pressures and the broad benefits of conservation in boosting company legitimacy and financial performance.

Restoration, the most forward-thinking strategy, seeks on-site B&ES recovery post-loss. Case studies, such as a New Zealand apiculture firm showcasing biodiversity and carbon negativity improvements (Salmi et al., 2023) investigating the positive effects of board gender diversity on environmental actions, highlight restoration's potential. However, restoration's benefits can be slow and variable, underlining the complexity of ecological recovery. A "non-action" approach, described by Talbot et al. (2023), suggests a wait-and-see strategy, where businesses stay passively engaged in environmental stewardship.

Supporting this comprehensive overview, stakeholder and institutional theories shed light on the intricate dynamics of B&ES strategy formulation. Stakeholder theory, as discussed by Boiral and Heras-Saizarbitoria (2017), explores the roles of various entities, including NGOs and universities, in biodiversity efforts. Institutional theory, highlighted by Nelson (2001), emphasizes the effectiveness of grassroots organizations in Victoria, Australia, in conserving local natural heritage. This blend of theories and real-world examples paints a detailed picture of the multifaceted approaches to preserving biodiversity and ecosystem services, underscoring the importance of diverse, collaborative strategies for long-term environmental sustainability.

Outcomes of B&ES strategies

Some studies generally discuss improvements and advantages for ecosystems, as well as an increase in species. Direct effects on biodiversity, often described broadly in review articles, can be distinguished from indirect effects that arise from environmental improvements or the minimization of impacts, which can indirectly benefit biodiversity. Fontana and Pisalyaput (2022) demonstrate how improving local climate conditions and preventing soil erosion can provide shelter for local wildlife.

Papers emphasize additionally outcomes fall into three main categories: economic, social, and organizational.

Concerning the economic category, profitability and competitiveness are the most detected by research. Puppim de Oliveira et al. (2022) describe the market opportunities emerged from biodiversity strategy by a Brazilian cosmetic company investing in a fair-trade label to protect local heritage. Shah et al. 2019 describe the increasing crop production and farmers' income. Other papers include social outcomes. Winn and Pogutz (2013) demonstrated as Acelor Mittal (steel) initiatives engaging directly with nature can improve the cooperation with public institutions and NGO. Among the organizational outcomes emerge the introduction of environmental risk management, the adoption of biodiversity management approach, mindset change in organizations and improving of corporate internal cooperation. Articles citing improved environmental risk management as one of the benefits of biodiversity management also include biodiversity dependence and the capability of company to face the risks (Small et al. 2022). The adoption of biodiversity management is often linked to the attainment of certifications that provide methodologies and tools adoption to manage the impact and dependence between business and biodiversity (Middendorp et al. 2020). The change in the organisation's mindset relates to an increase in knowledge about biodiversity and consequently a greater awareness of this issue. The review shows how this change starting with entrepreneurs also involves managers and all employees, supporting a better introduction of green practices and increasing their own motivation in sustainability improvement (Krause et al. 2021). Finally, biodiversity fosters internal cooperation between different competencies and areas of the organisation as cited in many papers (such as Barrington 2001).

Research limitations. The main limitation concerns the research progress that is still ongoing. While the results have been obtained and analyzed, they need to be systematized into a coherent framework that will allow to contribute to the management literature on business and biodiversity.

Managerial implications. Harnessing a systemic view on the business-B&ES relationship aims at supporting decision-makers in moving away from the prevailing "business case" perspective of corporate sustainability, which often implies a too simplistic understanding of the issue, neglecting the broader ecological implications of business activities (Figge & Hahn, 2021). By reconstructing the fragmented field of studies, this research provides decision-makers with a more comprehensive framework for interpreting this multifaceted relationship of impact and dependence. The emergent framework helps managers in articulating corporate responses that look beyond impact mitigation, to consider dependencies, institutional and organizational dynamics, to foster a more sustainable relationship between business and natural capital, and address challenges of biodiversity loss and planetary health.

Originality of the paper. The management literature has recently shown a growing interest regarding how companies attempt to manage their relationship with biodiversity and ecosystems. However, these studies have focused on specific aspects of the relationship between business and biodiversity, making relevant but jagged contributions. The originality and contribution of the present research, therefore, lies in providing an integrated analysis of the multiplicity of elements and dynamics involved in the interplay between business and biodiversity by using a systems approach to consider its inherent complexity.

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The role of biodiversity for business and social innovation

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Abstract

Biodiversity loss presents a serious risk for business and society. Companies can use digital technologies to offer innovative services that aim at protecting and promoting biodiversity. Moreover, a key role is also played by stakeholders, from business partners to clients and individuals, that can support the actions of a company in pursuing biodiversity goals. However, biodiversity can be seen also as a lever to improve innovation. Indeed, biodiversity can promote the innovation of business models to reach client needs as well as the social perception of this topic, affecting their role and actions in the society. In this context, culture about biodiversity represents a key factor that should be promoted to support actions. In this sense, policy-makers could play a key role. Through a multiple case studies approach, the study tries to assess the role of biodiversity taking into consideration digital technologies, stakeholders' involvement, business model and social innovation. The results of analysis (desk analysis and interviews) of three case studies considered, emphasize the double role of biodiversity as output of innovative services, and a driver for business and social innovation.

Key words: biodiversity; innovation; business model innovation; stakeholder theory; digital technologies

Framing of the research. In the field of environmental sustainability an important issue is concerning the prevention and promotion of biodiversity (Jones and Solomon 2013), meant as “the variety of life, including variation among species and functional traits” (Cardinale et al., 2012, p. 60). New frameworks and tools are introduced to help businesses better manage, measure, and reduce their impacts on climate change, air, soil, water quality, and more recently biodiversity (Reale et al., 2019). Biodiversity loss poses serious risks to business operations, threatening resource availability, supply chains, and ecosystem services, which is has been defined as the benefits that human populations and organizations derive—directly or indirectly—from proper ecosystem functioning (Costanza et al., 1997; Whiteman et al., 2013). These risks are recognized at a global level, but further research is needed to understand business perceptions and actions regarding biodiversity in local contexts (Reade et al., 2015; Winn & Pogutz, 2013).

Contributing to this topic, a growing number of scholars and practitioners have recently been looking at managing biodiversity issues considering the key role that stakeholders (Bronzetti et al., 2023) can have to foster ecological knowledge transfer that influences perceptions regarding biodiversity. Ecological knowledge is important in motivating operational activities aimed at preventing and/or promoting biodiversity, by innovating businesses and society. Specifically, companies and other organizations can innovate their practices. The social context is vital in influencing biodiversity culture and shaping learning about biodiversity. Stakeholders are integrated into this learning process (Smith et al., 2020).

Diversity has a key role for innovation. In the management literature, it has been found that different forms of innovation, such as gender, culture, education, background and cognitive, have a positive effect on the innovation of business processes (Mitchell, 2008; Østergaard et al., 2011), as well as the diversity of cooperation and relationships among companies and stakeholders (Vence & Trigo, 2009) affects positively the business innovativeness. In this sense, diversity for businesses is considered a driver of innovation (Hewlett et al., 2013). Moreover, diversity is relevant also for social innovation, which refers to the individuals' response to the view that economic activity has expanded with little or no regard for sustainable yields or the fragile balances in nature (Lettice & Parekh, 2010). Despite the relevance of biodiversity for humans and also business, there is a lack of studies that assess the relationship between biodiversity and innovation, in a viewpoint of “one diversity”.

In this context, companies have started to innovate their business models to include environmental, social, and economic considerations (Feger & Mermet, 2022). These sustainable business models are designed to integrate sustainability into companies to create value in not only financial, but also ecological and social domains, to adapt the firm to the changing business environment. In this regard, a key role can be played by relationships with stakeholders and with customers in terms of opportunities for value co-creation (Boiral & Heras-Saizarbitoria, 2017). According to stakeholder theory, companies and organizations must consider the interests and expectations of their various

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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, p. 91). According to this theory, organizations are not only accountable to their shareholders. Some studies have highlighted the importance of stakeholder involvement in managing complex environmental issues and promoting proactive environmental strategies (e.g., Buysse & Verbeke 2003; Cragg and Greenbaum 2002).

In addition to stakeholders, also the use of digital technologies allows to innovate business models aiming at sustainable solutions (Broccardo et al., 2023; Pichlak & Szromek, 2021). In the recent years, there has been a growing attention on how new digital technologies included in the Industry 4.0 paradigm - from big data to Internet of Things (IoT) and artificial intelligence (AI) solutions - are supporting firms and other organizations in the optimization of business processes included environmental sustainability concerns (Piccarozzi et al., 2023). In this sense, several studies aimed to assess the link and impact of Industry 4.0 in defining processes, with firms increasingly oriented towards a sustainable development (Stock et al., 2018). Hence, the literature at the intersection of Industry 4.0 and sustainability is rapidly evolving and growing to cover different areas (Piccarozzi et al., 2022). In this sense, Yadav et al. (2020) found that new technologies contribute positively to improve sustainability.

Digital technologies can serve as solutions also for facing biodiversity issues in different ways. Digital technologies can be used to offer innovative alternatives in agriculture or for regenerative or organic agriculture goals (Cumming et al., 2020), but technologies can also tackle biodiversity loss through playing a complementary role alongside existing technology, or supporting some processes (Ziegler et al., 2022). However, there is limited research exploring how digital technologies relate to biodiversity.

Purpose of the paper. Despite the relevance of biodiversity concerns for sustainability goals, there is a lack of research that investigates if and how biodiversity can support business and social innovation or can be an outcome of business and social innovation. In particular, we aim at exploring the relationship between biodiversity and innovation of business and social, by considering the role that both stakeholders and digital technologies can play. In this regard, through our study we aim at answering to the main following research questions:

RQ1: How does biodiversity affect both business and social innovation?

RQ2: How do firms/organizations involve stakeholders in biodiversity practices?

RQ3: What is the role of digital technologies in biodiversity practices?

The purpose of the study is to identify new theoretical patterns (Sabherwal & King, 1991) about the relationships between biodiversity and both business and social innovation. We attempt to answer the study’s research questions by selecting “information-rich” cases (Patton, 2015), summarizing varied or extensive raw data, establishing relationships between findings and research objectives and developing a theoretical framework based upon “the underlying structure of experiences or processes that are evident in the text data” (Thomas, 2006, p. 238).

Methodology. Because of the exploratory nature of our research, we adopted a bottom-up inductive approach (e.g. Gioia et al., 2013; Thomas, 2006) “wherein theories are formulated by drawing general inferences from particulars or cases of empirical data” (McAbee et al., 2017, p. 278). In doing so, we performed a qualitative multiple case study (Yin, 2014) using multiple material sources from in-depth interviews, to better understand the phenomenon, to secondary data extracted from companies’ websites and companies’ LinkedIn webpages. Three different companies, detailed in Table 1, have been as case studies that could allow us answering to our research questions.

Tab. 1: Case studies

Company	Founded	Size (employees)	Industry/Activity	Interviewed
Company 1	2017	Medium-sized	Technology/Technology provider; Consulting and education services	Marketing manager
Company 2	2019	Medium-sized	Food/Food delivery services; Education services	Co-founder
Company 3	2018	Medium-sized	Consulting/Innovation and technology business consulting services; Training services	Marketing manager and Agronomist

Source: Authors’ elaboration

Company 1 is a medium-sized leading nature-tech company aiming at protecting biodiversity through technology. The company’s goal is to create Europe’s largest ecological corridor, consisting of interconnected biodiversity oases, to restore 40% of global biodiversity. The honeybee is a key bioindicator that company assesses by collecting and interpreting data through innovative proprietary systems to monitor the health of bees, pollinators and their connection to ecosystems.

Company 2 is a medium-sized digital company mainly focused on food-delivery services. It’s main goal bases on the idea that delivering the “right quantity” of ingredients for the different dishes and recipes an individual chooses to eat can totally eliminate food waste and, consequently, having a positive impact on nature. Indeed, the company’s desire is to have a positive sustainable impact on the entire ecosystem to sustain nature and protect biodiversity.

Company 3 is a medium-sized tech-company that offers several consulting services for businesses and other organizations with the aims of transforming territories and industrial districts into sustainable places where safeguarding the environment by saving resources, combating climate change and valuing biodiversity.

In addition to the desk analysis of companies' website and LinkedIn web page, we interviewed managers of the three companies specializing in different activities. The interviews were conducted between December 2023 and March 2024, to explore the firms' activities adopted to prevent or promote biodiversity linked to changes occurring in global market and competitive environment they work.

Results. The evaluation of the three companies started from the desk analysis of their own website and LinkedIn page to assess what they do, in terms of activities, and how the concept of biodiversity is part of the business. A summary of the main results is reported in Table 2. Starting from the analysis of Company 1' emerges that biodiversity is the core of the business. Company born from the idea of two friends, one with a PhD in engineering and the other one a with a PhD in biology, with the ide of developing a technology for beeves monitoring because they perceived a great risk. Therefore, the founders already had the intention of create a business to reach sustainable goals. Then, the activity enlarged involving more services with the aim of bridging nature with technology. In this sense, company developed sensors and analysis tools, as well as started to offer regenerative activities that help preserve and promote biodiversity. The mission is to create a world where technology and nature work in harmony, providing innovative solutions that help protect and restore ecosystems.

Tab. 2: Main results of desk analysis

Company	Products/Services	Digital technologies
Company 1	Monitoring; Regeneration; Education; Adopting a beehive / tree / bee	IoT, Sensors, App
Company 2	Food delivery for individuals and organizations; Personalized nutrition	Digital platform
Company 3	Nature-based solutions; Local and industrial resource efficiency solutions services; Biodiversity monitoring and innovative regeneration services; Open Innovation and Venture Capital	Sensors, Satellite images

Source: Authors' elaboration

For the company, particularly important is the maintaining of a healthy balance between human activity and the natural world. For this reason, a team of experts works tirelessly to develop cutting-edge technology that can monitor, analyze, and promote the health of the environment, believing that by combining our expertise with a deep respect for the natural world, a positive impact on the planet can be achieved. The business of Company 1 bases on 3 main pillars (services): (1) the monitoring through proprietary technologies of the nature habitat health (data on pollinators, bees, flora, etc.); (2) regeneration of low-biodiversity lands, providing nectariferous species of trees and plants, selected according to the specific characteristics of the land; and (3) education programs to raise awareness of biodiversity issues among businesses and communities. Through the use of innovative technologies and the analysis of data technologies allow to collect, Company 1 aims at preventing biodiversity loss by providing different services for beekeepers/farmers/citizens. Through advanced sensors and machine learning algorithms Company 1 is able to collect and analyze large amounts of data on species populations, habitats and ecosystems then used to create the world's first comprehensive biodiversity index, providing an accurate overview of the health and diversity of planet's ecosystems. With this index, businesses, policymakers and the masses can make more informed decisions about how to protect and conserve Earth's biodiversity for future generations. Company 1 provides additional services for citizens and organizations, such as education. In this regard, through LinkedIn, Company 1 continually publishes news and information about biodiversity and a series of webinars on biodiversity topic. On company's website there is a blog and a podcast to spread the culture of biodiversity. Moreover, it offers an educational program composed by 9 modules for secondary school students, to integrate biodiversity into the school program. Finally, Company offers the possibility to "adopt" a beehive, and periodically receive honey produced by bees, a solitary bee house, perfect for garden or balcony, and a tree. In this way, collaborating with beekeepers and other actors (e.g. European Space Agency). Company 1 offers at individuals the opportunity to participate actively in pursuing biodiversity prevention and promotion, involving them and beekeepers and land owners.

Company 2 is a digital company that offers, through a digital platform, a new way of sustainable grocery shopping for the environment, the local economy and health that accompanies clients in making conscious and reasoned choices about their eating habits. The kits are provided in compostable containers of portioned, ready-to-cook ingredients that allow to save time and to have zero food waste at a sustainable cost. It offers a large variety of ingredients to assure the possibility of cocking several different recipes. In doing so, Company 2 creates synergies with host territory, various stakeholders (producers, bistros, restaurants, pick-up points, etc.) with the intention of enhancing and protecting it, as part of the same delicate ecosystem to be protected. The ecosystem consists of: a digital portal; a production/distribution center; a network of companies that cultivate, breed and produce raw materials and semi-finished products in the national territory; the users of the service. The main component of the ecosystem is the innovative technology. Through the website and app, users can do their food shopping quickly and easily, starting with recipes and receiving all ingredients at home ready for preparation, weighed and divided into compostable containers, or dishes already cocked. No food is wasted and no packaging waste is produced. The production chain is as short as possible. The rewarding mechanism is that of

planning, which makes it possible to optimize resources and thus reduce wasted time and energy, while impacting the environment less and less. In this way, Company 2 offers to individuals as well as companies an innovative, anti-waste service that can generate real change to protect “People, Work and the Planet”. In addition, to support clients, Company 2 has partnered with nutrition experts (biologist nutritionists) who will provide to clients a personalized diet plan designed on client needs. A highly personalized service, new to the market, flexible and tailor-made that favors collaborations with different several actors of food industry. Through their services, mainly focused on protect environment (short-chain/zero-kilometer products for less environmental impact; plastic-free, fully compostable containers; weighed and portioned ingredients to reduce food waste), Company 2 is able to reduce food waste, CO₂, water, land use and plastic. These positive results in terms of environmental sustainability translate into positive results in terms of prevention of biodiversity loss. Moreover, Company 2 is also active on promoting the culture of sustainability and biodiversity mainly through the LinkedIn page, by publishing posts on these topics.

Company 3 is a tech-company that provides its clients with the best consulting solutions on the market, including its own technologies and the most advanced ones, to improve environmental sustainability reducing the use of natural resources. Specifically, through the concept of circular economy, Nature Based Solutions and the efficiency of natural ecosystems, company 3 develops skills and technologies to replicate in industry and territories what nature does to optimize its resources. It proposes on the market innovative and comprehensive solutions for industries and territories to responsibly deploy natural resources-energy, water, materials, and soil-to optimize their uses, decreasing the amount of CO₂ emitted, recovering resources from waste, producing energy from innovative renewable resources, and combating climate change to prevent biodiversity loss. This is done to address major critical environmental issues and provide resilience to the Planet of the Future. Company 3 develops and aggregates technologies, solutions, innovations and skills to transform the industrial supply chain and territories into resources for people and the environment, in order to combat the scarcity of natural resources by limiting their extraction and promoting the reuse of those already present, promote the regeneration of biodiversity and counter climate change, creating a true circular symbiosis between people, economy, business and the environment. The main business areas are: (1) Technology, it is active in creating solutions for industries, processing and process chains; (2) Farm, it is active in the creation of land regeneration solutions and technologies for agriculture; (3) Renewables, it is active in the development of Innovative Renewable Sources Innovation center; and (4) it is active in the field of Open Innovation and Venture Capital. Company 3 activity starts with the analysis of an actor’s needs and try to involve all the other actors close to the client business. In this case, it aims at involving different stakeholders to create a superior value for sustainability and biodiversity goals. Company 3, as the other two ones, uses the LinkedIn page to promote the culture of sustainability and biodiversity through the publishing of information and events on the topics.

In addition to the desk analysis of companies’ website and LinkedIn pages, as data source, we analyzed the interviews done with managers and a co-founder of the companies considered in this study. First of all, for all three companies, even if in different ways, biodiversity has a central role in their business. For all companies, biodiversity is the engine of their business:

“We started our business with the aim of monitoring beehives to prevent the death bees, but immediately we perceived the key value of biodiversity and focused this new perspective.” (Company 1)

“Biodiversity protection and promotion is a key aspect for our business because it allows to assure a large variety of ingredients to satisfy all types of diets for different types of ethnicities.” (Company 2)

“When we interact with our clients we highlight the relevance that Nature Based Solutions for resource efficiency have in terms of biodiversity and how it is important for the development of society. In this way, clients become aware to our solutions.” (Company 3)

As far as digital technologies are concerned, the three companies use them for different purposes but it can be noticed that all technologies are essential for their business. All three companies base business on technologies. In particular, Company 1 born as tech-company that uses IoT and sensors for monitoring beehives. Then, these technologies have been used also to monitoring biodiversity of lands. In addition, when started the beehive adoption project, we developed an app for this purpose. Company 2, would not exist without technologies because it is a digital company that offers its own services through a digital platform. In this case, technology is a tool to promote biodiversity by delivering different ingredients for different diets. Finally, for Company 3, technologies support the Nature Based Solutions they offer, thus it has a key role in delivering efficient services.

“To provide our services we need technology and data to precisely meet need of beekeepers as well as of individuals that adopt a beehive...Technology is for us necessary to assure biodiversity.” (Company 1)

“In promoting our Nature Based Solutions, we consider technologies necessary to reach efficient sustainable results. Moreover, technologies allow us to monitor biodiversity and act immediately.”
(Company 3)

In addition to the relevance that technologies have for the business of the three companies considered, an element of analysis regarded the role of the different stakeholders. For all three companies, this topic is extremely important. Without the involvement of stakeholders and partners is difficult to reach sustainable results and protect biodiversity.

“In addition to the beekeepers, land owners and citizens directly involved in the business, we collaborate with different research, universities and other institutions as well as with other partners.” (Company 1)

“In our business we need of the involvement of other organizations and of clients. They should be culturally prepared to the concepts of zero food waste to save resources useful for sustainability and biodiversity goals.” (Company 2)

“Biodiversity needs of stakeholders involvement. This is a cultural innovation first of all. We try to imprint this concept to other companies highlighting the value of nature for businesses and society.” (Company 3)

Finally, though interviews we aimed at assessing the relationship between biodiversity and innovation. For Company 1, biodiversity allowed to innovate the business model. Indeed, from a technology for beekeepers moved on a technology that allows to involve individuals in adopting beehives, initially, and then trees and bees. Company 2 considers biodiversity to innovate products (ingredients and diets) and services (personalized nutrition) that it offers. Company 3 uses biodiversity to innovate the clients’ business models.

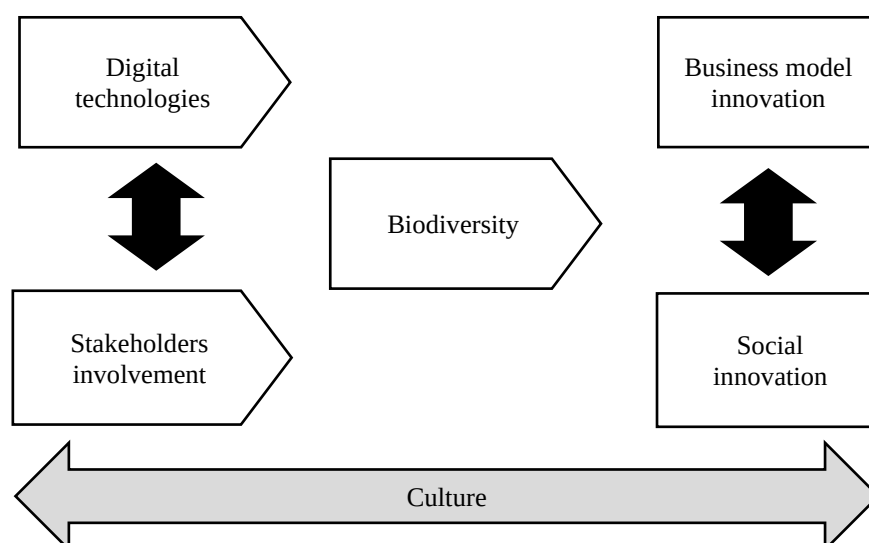
“Initially within 3bee's business model, the idea was to sell this device to beekeepers. Then, we noticed that people were interested protecting bees and prevent biodiversity loss, so we basically modified our business model through an ad-hoc website and app that allow to remotely adopt and monitoring hives. In this case, culture is important. Understanding the relevance of biodiversity affects the social approach to the topic.” (Company 1)

“Biodiversity protection allow us to offer different ingredients for different people needs. In this way we can innovate our business also promoting personalized nutrition.” (Company 2)

“In our solutions, from a circular economy viewpoint, we offer to the clients the opportunity to innovate the business models by considering the re-use of their waste in other business activities.” (Company 3)

The results of content analysis of the interviews done with managers and a co-founder of the three companies considered allowed us to depict a possible theoretical framework (Figure 1) that emphasize the different role all main variables of this study have with regard to the biodiversity, which can be both an output of innovative services and a driver for innovation.

Fig. 1: Theoretical framework proposed



Source: Authors' elaboration

Research limitations. The study has some limitations that could be thought as hints for the future research. Firstly, the study is based only on the analysis of three companies. More case studies belonging to different industries can improve

the understanding of the phenomenon. Moreover, the study bases on a qualitative exploratory analysis. A more comprehensive research considering a quantitative analysis and other variables in addition to those reported in Figure 1, such as culture, is needed to better understand cause-effect relationships among the different variables.

Managerial implications. Although this is only a preliminary step of the study, it has different implications for companies and policy-makers. Firstly, for businesses biodiversity can be both an output and a driver of innovation. On one side, the use of digital technologies as well as the involvement of stakeholders are two main variables that companies should consider to reach positive results in terms of biodiversity protection and promotion. Digital technologies allow to favor the development of an efficient ecosystem of services needed for biodiversity (Pimm et al., 2015). The involvement of stakeholders leads to an integrated strategy that accelerate the process of transition towards sustainable businesses that favor biodiversity (Leclère et al., 2020). On the other side, by reaching biodiversity goals, companies can innovate their own business model to reach individuals' needs. In this way, companies can favor the spread of ecological knowledge, which is very important in influencing business and social perceptions and actions regarding biodiversity.

Moreover, the results of analysis highlighted the relevance of culture for this kind of topics. Culture is a cross-sectional factor that affects all the linkages of the different variables analyzed with biodiversity. In this sense, policy-makers should contribute to improve the social context, not only through rules and regulations, but also through promotion policies for organizations and citizens to favor learning about biodiversity. Social learning describes the process through which new ecological knowledge translates into business (Siebenhüner & Arnold, 2007) and social actions (Siebenhüner et al., 2016) regarding biodiversity.

Originality of the paper. The research is one of the first study that aims at assessing how biodiversity relate to innovation from a business perspective and a connection with the social perspective. Based on a multiple case studies approach, the study highlights the double role of biodiversity as output of innovative services, through the use of various digital technologies and the involvement of stakeholders and as driver for business model and social innovation. Moreover, the study provides further knowledge in describing how policy-makers can support biodiversity acting on the promotion of s culture of biodiversity.

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How do Dynamic capabilities, Ecosystems and Green innovations contribute to the creation of a Net Zero Path? Insights from Italian wine sector.

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Abstract.

Sustainability strategies of firms produce significant advantages for the environment and the economy. There are some knowledge gaps in the literature, as little research addresses how firms develop capabilities to identify development patterns and gain competitive advantage over time by implementing sustainability strategies in terms of products and processes. This study combines an integrated theoretical framework (dynamic capabilities, ecosystem, and green innovations) to explore the path toward net zero of a small Italian winemaking firm that implements sustainable management and the circular economy. Our results clearly show that the adopted integrated theoretical framework allows for the analysis of the firm's strategic behavior toward carbon neutrality, identifying seven different phases and characterizing them according to the dynamic capabilities framework (sensing, seizing, configuring).

Key words: dynamic capabilities; sustainability; ecosystem; green innovations; wine sector.

Framing of the research. Over the past decades, developing environmentally sustainable strategies has become crucial for achieving a sustainable competitive advantage. According to Teece, Pisano, and Shuen (1997), the dynamic capabilities framework aids in understanding how a firm's ability to integrate, build, and reconfigure internal and external competencies can address the rapid changes occurring in the dynamic business environment. In this capacity for successful innovation and value capture over time, the ecosystem plays a pivotal role, defined as "the community of organizations, institutions, and individuals that impact the enterprise and the enterprise's customers and suppliers" (Teece, 2007:1325).

The disruptive nature of sustainability (Kortus & Gutmann, 2023:415), due to the drastically increased environmental requirements from various stakeholders, including governments, investors, customers, and society, necessitates that firms establish new strategies and solutions to design a path towards carbon neutrality. Accordingly, it is important to reconcile the debate between practitioners and academics on the relevance of green innovations (Dangelico et al., 2017) in compliance with the 2030 Agenda for Sustainable Development and the 17 Sustainable Development Goals (SDGs).

Nevertheless, what remains scarcely addressed in the existing literature is how firms develop capabilities to identify development patterns and gain competitive advantage over time by implementing sustainability strategies in terms of products and processes (Khan et al., 2020). To address this gap, we adopt a dynamic capability framework, as previously utilized in strategic management studies (Eisenhardt & Martin, 2000; Winter, 2003; Zahra, Sapienza, & Davidsson, 2006) and in corporate sustainability theory (Kabongo & Boiral, 2017; Wu et al., 2013). Wu et al. (2012) highlighted that "how firms develop and apply dynamic capabilities to address the distinctive challenges involved in corporate change toward sustainability is yet to be fully explored" (p. 233). According to Daddi et al. (2018), we assert that the dynamic capabilities framework (hereafter, DC) is underexplored in the context of sustainability management.

In this regard, the paper adopts the approach proposed by Teece (2007), whereby dynamic capabilities can be divided into three main clusters: (1) sensing, which involves sensing and shaping opportunities and threats, (2) seizing opportunities, and (3) reconfiguring, which involves enhancing, combining, protecting, and, when necessary,

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reconfiguring the firm's intangible and tangible assets to maintain competitiveness (Teece, 2007:1319). In light of this, dynamic capabilities are investigated in terms of sensing, seizing, and reconfiguring capabilities. The author identifies some micro-foundations composed of distinct skills, processes, and organizational activities (Teece, 2007).

Purpose of the paper. The paper aims to shed more light on the dynamic capabilities framework by exploring how these capabilities impact the path toward the net zero goal. Dynamic capabilities are considered the result of both an internal development process and the firm's interaction with its ecosystem. Additionally, it is assumed that the creation of dynamic capabilities supports the development of green innovations. To measure the firm's progress toward the net zero goal, the types of sustainability assessment tools adopted are analyzed to identify any learning processes within the firm and how they are influenced by ecosystem interactions.

The paper's research questions are summarized as follows:

- RQ 1: What kind of dynamic capabilities are developed by firms implementing sustainability strategies?
- RQ 2: What is the role of the ecosystem in developing dynamic capabilities?
- RQ 3: What types of innovation are developed based on dynamic capabilities?
- RQ 4: What types of sustainability assessment tools are adopted by companies to verify the impact of green innovations along the path toward the net zero goal?

Methodology. As previously stated, this paper adopts a comprehensive theoretical framework based on the dynamic capabilities approach (Teece, Pisano, and Shuen, 1997) to investigate the firm's strategy toward the net zero goal. Specifically, it is assumed that a company may develop a set of capabilities through interactions with its ecosystem, leading to the achievement of green innovations. Due to the novelty of the topic, a qualitative research method was chosen (Bryman, 2012), as qualitative case studies can generate a detailed and multifaceted understanding of a complex issue within its real-life context (Schwandt and Gates, 2018).

The authors decided to develop a longitudinal case study, defined as "a time-ordered analysis of events that occur during a period of the entity's history." This longitudinal approach provides a strong rationale for a single case study. Therefore, the investigation of the previously defined research questions was conducted through a longitudinal case study. A purposive sampling approach was adopted, as the authors expected that selecting a case based on predefined criteria would provide the necessary information to answer the research questions and increase the study's reliability (Bryman, 2012; Etikan et al., 2016). Bernhard (2011) noted that purposive sampling is particularly useful for "intensive case studies" (p. 698), which is applicable to this longitudinal case study.

The case selection was based on the following criteria: a) The company should belong to an industry characterized by a high level of engagement in sustainability. Santini et al. (2013) pointed out that sustainability plays a key role in the wine industry, as demonstrated by the increasing interest of academia, policymakers, and practitioners. b) The company should be a micro or small enterprise, as it is generally assumed that such firms possess a lower level of capabilities but may develop them through interactions with external actors in the firm's ecosystem. c) The company should have implemented organic farming criteria according to EU Regulation 2020/464. d) The company should directly manage the entire wine production process, from vine cultivation to winemaking and bottling. e) The company should have implemented a sustainable and circular business model.

Based on these criteria, academic literature and press news regarding Italian winemakers were analyzed to identify potential case study targets. This led to the identification of a small winemaking company located in the north of the Lazio Region (Central Italy). According to Chiriaco et al. (2019), this company achieved carbon neutrality, producing no impact in terms of GHG emissions. Additionally, the company developed several collaborations with universities and research centers and promoted various green innovations (Mura et al., 2023; 2024).

The company was contacted by the authors, and the research aims were presented to the entrepreneur, who agreed to collaborate and made his network of relationships with actors in the firm's ecosystem available. Based on this collaboration, the authors selected the key informants summarized in Table 1.

Table 1. Primary sources for data collection

Primary data collection (Semi- structured interviews)	Entrepreneur Employee in charge of communication activities toward company visitors Sustainability expert at a researcher center collaborating with the selected company University professor acting as Principal investigator in two applied research projects involving the selected firm Firm's business customer (restaurant) involved in a reverse logistics project

Semi-structured interviews with selected key informants were conducted via MS Teams and audio-recorded with permission; each interview lasted no less than 60 minutes. All interviews were transcribed for rigorous qualitative data analysis via manual coding. Additionally, the transcriptions were sent to the interviewees for confirmation of the content. If further information was needed during the data analysis, key informants were contacted again.

Consistent with other studies (Khan et al., 2020), we triangulated the interview data to minimize biases, limitations of memory recall, and other issues generally present in qualitative research. Additionally, secondary data from the firm

were analyzed using archival sources such as firm reports, press releases (including interviews with the entrepreneur), final reports of applied research projects, and the firm's website.

Collected data were separately analyzed by each author to define the different phases of the dynamic capabilities process. For each phase, the following issues were identified:

- a) Phase number;
- b) Brief description;
- c) Involved actors within the firm's ecosystem;
- d) Developed green innovations (if any) and their classification according to the Oslo Manual (OECD/Eurostat, 2018).

After comparing classifications developed by individual authors, no significant differences emerged. Finally, all authors identified the corresponding dynamic capability micro-foundations and the relative clusters for each phase, according to the approach by Teece et al. (1997).

The findings, collected and classified according to the described research methodology, are presented and discussed in the next section.

Results. The results of the study are summarised in 7 phases, in temporal sequence (longitudinal approach) (Table 2).

Table 2. Phases description of the path toward net zero

Phases	Description
1	Orientation towards environmental sustainability, the wine sector and self-entrepreneurship
2	Starting the entrepreneurial activity
3	Occasional collaboration with the University
4	Structured collaboration with universities and other research centers
5	Collaboration with University spin-offs
6	Structured collaboration with universities and other ecosystem partners
7	Independently developed green innovations

Each phase has been analysed according to the methodology above described and main results are summarized in Table 3.

Table 3 – Results of the study

PHASES	PHASE DESCRIPTION	ECOSYSTEM'S INVOLVED ACTORS	GREEN INNOVATION	SUSTAINABILITY ASSESSMENT TOOL	MICROFOUNDATIONS	CLUSTERS OF DYNAMIC CAPABILITIES
1	Orientation towards environmental sustainability, the wine sector and self-entrepreneurship	Future entrepreneur/ Family of origin	-	-	Market monitoring and scanning	SENSING
2	Starting the entrepreneurial activity	Firm/Wine Cellar Designer/Architect	Product level innovation		Idea generation	
3	Occasional collaboration with the University	Firm/University	Marketing (packaging level innovation);	LCA	Experiential learning	
4	Structured collaboration with University	Firm/University/Research centers	Product innovation; Process innovation		Structured collaboration with universities and other research centers	SEIZING
5	Collaboration with spin-off	Firm/University/Spinoff	-	LCA	Collaboration with spin-off	SEIZING/RECONFIGURING
6	Structured collaboration with universities and other ecosystem partners (institutional and business)	Firm/University/Research centers/Engineering business company	-		Collaboration with universities and other ecosystem partners	
7	Independently developed green innovations		Marketing (communication level innovation); Marketing (packaging level innovation)		Experiential learning	RECONFIGURING

The obtained results clearly show that the adopted integrated theoretical framework allowed for an analysis of the firm's strategic behavior toward the net zero goal, identifying seven different phases and characterizing them according to the dynamic capabilities framework. However, it also emerged that a single phase can relate to more than one of the clusters proposed by Teece et al. (2007) (sensing, seizing, reconfiguring). For instance, Phase 5 (Collaboration with spin-offs) and Phase 6 (Structured collaboration with universities and other ecosystem partners - institutional and business) could be embedded in both the Seizing and Reconfiguring clusters. Both phases simultaneously allowed for the

exploitation of requisite knowledge and the implementation of new business practices (specific micro-foundation, named: best practices adaptation) while incorporating a culture of sustainability.

Each phase created specific dynamic capabilities, but they did not necessarily lead to the development of green innovations. This is the case for Phase 6, where interaction between the firm, universities, and other partners in the business ecosystem resulted in the development of a prototype wagon for biogas and organic compost production and systems for producing edible mushrooms. Unfortunately, due to technological constraints and limited business prospects, these projects did not proceed.

Consistent with the small firm size, most of the created innovations are related to marketing and process-level innovations. Among 13 innovations, there were 5 marketing innovations (packaging and communications), 5 process innovations, 2 product innovations, and 1 organizational-level innovation. More specifically, marketing innovations focused on packaging features (primary and secondary packaging), and communication innovations were more related to the firm's ability to conduct experiential wine events. These green innovations particularly resulted from interactions with other ecosystem players. For example, collaboration with a university led to the launch of a new line of wines without added sulfites (product innovation at the primary packaging level) and the environmental microsensorization of the drying cell inside the cellar for energy saving, representing a series of interventions in the vinification process (process innovation).

An important innovation is the implementation of a strategy to transform the traditional linear business into a circular one by reusing organic waste transformed into compost for on-farm fertilization, weed control, and soil erosion prevention. In other cases, green innovations resulted from the firm's independent initiatives. Notably, the initial adoption of a lighter glass bottle for 95% of bottled wines (marketing innovation at the packaging level) aimed to reduce the environmental impact of wine packaging. Due to the impossibility of adopting the same strategy for aged wines, the firm implemented a circular strategy, which involved refurbishing raw materials. Customers, particularly in the Ho.Re.Ca. sector, could return empty glass bottles, fabric labels, and shellac to the wine firm (reverse logistics), resulting in a 10% discount on new wine purchases (organizational innovation). This also strengthened relationships with Ho.Re.Ca. customers. Subsequently, the firm introduced a box made from recycled cardboard (marketing innovation at the secondary packaging level).

Regarding RQ4, it emerged that assessment tools evolved over time and directly supported the implementation of green innovations. For instance, in an early stage (Phase 3), the firm collaborated occasionally with a university through the participation of Master's Degree students in implementing the LCA methodology for carbon footprint assessment. This aimed to analyze the greenhouse gas (GHG) emissions, conventionally measured using the functional unit (FU) of kg of CO₂eq per 0.75 L bottle. In a later stage (Phase 5), through collaboration with a university spin-off, the overall GHG fluxes budget was assessed at the wine farm level (from the vineyard to the final bottle of wine), using an integrated approach that included the eddy covariance technique and the LCA. This comprehensive approach allowed for assessing the carbon footprint using both the traditional product unit (1 bottle of wine of 0.75 L) and the unit of land (1 ha of vineyard). This new functional unit allowed for a more realistic land-based GHG accountability of agricultural processes, whose life cycle involves land use of managed ecosystems, thus estimating the actual contribution to climate change.

Various studies (Renzulli et al., 2015; Chiriaco et al., 2017; Chiriaco et al., 2022) demonstrate that the carbon footprint assessed by product units for agricultural products is not always fair, as it is primarily related to yields. Intensive management with high agricultural inputs per hectare generates higher GHG emissions in absolute terms per unit of land, which can be overshadowed by higher productivity when assessed per units of product. Instead, the carbon footprint per unit of land better reflects the actual agricultural contribution to climate change, driven by land-atmosphere GHG fluxes, independently of the number of bottles produced. This new method of determining the impact per unit of land revealed that the farm was already carbon neutral in the field phase since sustainable practices applied in the vineyard turned the system into a net carbon sink (i.e., -0.27 MgCO₂eq per ha per year), completely offsetting the anthropogenic emissions associated with vineyard management (i.e., 0.24 MgCO₂eq per ha per year).

Research limitations. While providing interesting insights, the research has all the limitations of a single case study. In particular, it does not allow for the generalization of the results due to the analysis focused on one specific industry and one country. At the same time, carrying out a single case study is a leading research method that provides important insights in business studies (Leone et al., 2021). Future research avenues may apply the same analysis on other firms in the sector of agri-food industry (Esposito et al., 2020), investigating how the dynamic capabilities could enhance the circular food economy as at the core of the EU Green Deal. In addition, future research could analyze different sectors or new countries.

Managerial implications. Our findings suggest managerial implications for organizations and managers in relation to the implementation of dynamic capabilities in developing sustainability strategies (Kabongo & Boiral, 2017; Wu et al., 2013) and green innovations. In particular, from the firm's perspective the relationship between the firm and the university is strictly important in order to implement and enhance dynamic capabilities. From the other perspective, the University plays a pivotal role in contributing to implement the innovations at different level.

Originality of the paper. The originality of this contribution lies in developing a longitudinal case study related to the small firm's dynamic capabilities in wine sector since, to the best of our knowledge, most academic contributions refer to quantitative analysis. In addition, in order to analyze the effective contribution of the green innovation to the firm's carbon neutrality path, this study considers the evolution in adopting environmental assessment tools (namely, LCA).

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Funding: This work has been funded by the European Union - NextGenerationEU under the Italian Ministry of University and Research (MUR) National Innovation Ecosystem grant ECS00000041 - VITALITY - CUP E13C22001060006. Project title: "VITALITY - Innovation, digitalisation and sustainability for the diffused economy in Central Italy (Ecosistema di Innovazione, Digitalizzazione e Sostenibilità per l'Economia Diffusa nell'Italia Centrale)"

Linking innovation and sustainability through equity-based crowdfunding campaigns. A focus on cultural and creative industries

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Abstract

This work in progress explores the intersection of open innovation, entrepreneurship, and sustainability within the cultural and creative industries, particularly through the lens of equity based crowdfunding campaigns. Drawing from the growing emphasis on sustainability-oriented innovation, we delve into the dynamics of crowdfunding as a platform for fostering innovative solutions while addressing societal and environmental concerns. By focusing on the renowned Italian context, celebrated for its cultural heritage and creativity, we examine the role of sustainability issues in the design of successful equity crowdfunding campaigns, specifically within the cultural and creative industries.

Conducting an exploratory study, we employed a multiple case study methodology, selecting three equity crowdfunding projects from the Mamacrowd platform, representing different categories within the cultural and creative industries. Our findings underscore the significance of integrating sustainability principles into entrepreneurial ventures. We highlight the emergence of innovative startups led by all-female founding teams, initiatives promoting educational engagement, and efforts towards waste reduction through craftsmanship and production efficiency.

Key words: innovation; entrepreneurship; sustainability; equity-based crowdfunding; cultural and creative industries; craftsmanship

Framing of the research. *The expansion of innovation horizons following the introduction of the open innovation concept (Chesbrough, 2003), has sparked extensive exploration into various facets of innovation advancement (Bigliardi et al., 2021). Embracing external input has not only broadened the spectrum from conceptualizing new products and services but also diversified funding sources, extending beyond traditional avenues such as banks and venture capitalists to engage of a broader community, commonly referred to as the “crowd” (Cappa, 2022). Crowdfunding has emerged as one of new players that entered the global arena (Block et al., 2018) and a digital innovation that provides financial backing for new entrepreneurial ventures (startups) or projects initiated by businesses or individuals (Troise et al., 2020, 2022; Bargoni et al., 2022). Unlike conventional funding channels such as banks or venture capitalists, project initiators now directly engage with a virtual community of potential stakeholders (or shareholders in equity-based crowdfunding) via the Internet, leveraging a myriad of platforms developed for this purpose. Crowdfunding initiatives allow the creation of new community not only for fundraising but also for new connections, generating more value than pure monetary returns, often referred to as “more than money” (Brown et al., 2019): successful crowdfunding campaigns validate market demand, but more importantly, they build a supporting community and facilitate the development of social capital for campaign initiators, also through crowd co-creation (Ryu, 2020).*

Within the realm of crowdfunding, among the various types of online platforms and crowdfunding models, four crowdfunding models have been identified by current literature (Vrontis et al., 2021; Troise et al., 2023a): reward based crowdfunding; equity based crowdfunding, donation based crowdfunding, and lending based crowdfunding. Among these models and the related digital platforms, the most widely known to the public are reward-based platforms, where contributions are rewarded with various incentives, and equity based platforms, which are regulated at the national level (e.g., by CONSOB in Italy, the public authority responsible for regulating the Italian financial markets) and involve participation through the acquisition of (equity) shares in the company’s capital. An example of a most known reward-based crowdfunding platform is Kickstarter (Testa et al., 2024), followed by GoFundMe and Indiegogo, while an example of a leading equity-based crowdfunding platform in Europe is Crowdcube (Vismara, 2016).

On the other hand, the growing emphasis on sustainability related concerns, government initiatives promoting greener policies, and the attention from global bodies like the United Nations through the Sustainable Development Goals (UN SDGs) have forged a robust connection between innovation and sustainability, with a growing attention in innovation management studies (Kimpimäki et al., 2022). This linkage endeavors to foster the creation of innovative products and services while upholding environmental stewardship and addressing the needs of marginalized communities. The

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overarching goal is to tackle the significant societal challenges through conscientious innovation (Voegtlin et al., 2022). For businesses, this entails a commitment to contribute to a better world by developing innovations that mitigate potential negative impacts while simultaneously addressing societal issues, all while maintaining operational continuity, achieving success, and enhancing competitiveness (Borgers et al., 2020).

These expected practical contributions, in the evolving business environment, have positioned open innovation as a valuable strategy for tackling sustainability challenges. Crowdfunding platforms are emerging as integral components of open innovation, gradually gaining traction among companies seeking innovative solutions, leading to the development of concepts of sustainability-oriented innovation when studying crowdfunding initiatives (Calic and Mosakowski, 2016; Troise et al., 2021).

Purpose of the paper. The connection between innovation and sustainability has been analyzed in agri-food industries where environmental issues are prominent (Troise et al., 2021; Abbate et al., 2023). However, over the last twenty years, the adoption of sustainability-oriented innovation has rapidly increased in cultural and creative industries, beginning with the focus on innovation in understanding the creative capacity as a driving force behind the germination of ideas (Lazzeretti, 2012) to the stress on sustainability, with a focus on social aspects, particularly highlighting improvements in health and well-being when participating in or being involved in cultural activities (Rodriguez et al., 2024). In fact, since 2019, the World Health Organization (Fancourt and Finn, 2019) has reported that systematic involvement in arts and culture contributes to enhancing well-being, fostering health, preventing, managing, and treating numerous physical and mental health conditions.

The need to further understand the link between innovation and sustainability has led us to analyze crowdfunding campaigns – as examples of open innovation tools (Di Pietro et al., 2018; Troise et al., 2021, 2023a) – proposed by companies belonging to cultural and creative industries (Cicchiello et al., 2022). This is a context where sustainability issues are growing rapidly and its distinctive characteristics have seen pioneering examples of crowdfunding campaigns – e.g., “fan-funding platform” (Bannerman, 2012) for gathering financial support from fans for music projects. Although cultural and creative industries crowdfunding is becoming increasingly recognized as a funding option, especially through reward based crowdfunding campaigns (Rykkja et al., 2020b; Cavalcanti Junqueira and Soetanto, 2022; Petit and Wirtz, 2022) it has not fully replaced conventional funding sources in the majority of situations and there is still a scarcity of research exploring the influence and significance of crowdfunding on stakeholders (Rykkja et al., 2020a).

Moreover, when considering sustainability in crowdfunding activities, recent call for future research have highlighted the need for more studies on equity based crowdfunding (Mochkabadi and Volkmann, 2020; Wehnert and Beckmann, 2021). Thus, the primary objective of this study is to comprehend the role of sustainability in design a successful campaign of equity based crowdfunding. Specifically, the research question is: which is the role of sustainability issues in equity crowdfunding campaigns?

Methodology. The exploratory nature of our current work in progress prompted the adoption of a qualitative approach (Eisenhardt, 1989). Utilizing case study research (Yin, 2009) offers unique advantages in comprehending the intricate contextual factors that influence sustainability-oriented innovation. Rather than opting for a single case study, we chose to employ a multiple case study approach, as it has been noted to enhance the credibility of evidence and enable a more nuanced assessment of findings (Yin, 2009; Gustafsson, 2017). Through an in-depth analysis of cases, we can uncover detailed narratives, revealing the motivations, challenges, and success factors that quantitative data alone may overlook (Mochkabadi and Volkmann, 2020; Wehnert and Beckmann, 2021). This qualitative lens provides a more comprehensive understanding of the social, cultural, and organizational dynamics shaping sustainability-driven innovation initiatives.

Given the esteemed Italian context, renowned for its celebration of culture and creativity worldwide, our objective of elucidating the role of sustainability in initiating and promoting successful equity crowdfunding campaigns led to the selection of projects within these industries. We drew from one of Italy’s most utilized platforms for equity-based crowdfunding, namely Mamacrowd (by SiamoSoci). This platform is one of the leading in the Italian context (Battisti et al., 2024) as shown in the latest reports (see among others the last report provided by Politecnico of Milan, namely “8° Report italiano sul CrowdInvesting - Osservatori Entrepreneurship Finance & Innovation”). The Italian context is particularly interesting to study the equity crowdfunding phenomenon being the first to introduce and regulate this specific crowdfunding model in Europe (Vismara, 2016; Troise and Tani, 2021).

As this research is a work in progress, we have already checked the platform website in search of successfully funded campaigns related to cultural and creative industries using the following keywords: “arts”, “craftsmanship”, “craft”, “book”, “artisan”. We have decided to select only the closed campaigns concluded more than six months ago but not extending the range to the projects older than two years. These criteria have allowed us to select three projects belonging to three different categories used by the Mamacrowd platform, namely community (Tadaan), marketplace (Bookdealer), and fashion (Mycamicia).

To achieve triangulation (Yin, 2009), in addition to the data collected from the platform, we are gathering further data from two other secondary sources such as online interviews conducted with the founders, i.e., those who launched the campaign, specific online press, official websites of the financed projects, social media channels used by the companies and reputable online reports or sources specifically dedicated to the entrepreneurial ecosystem.

Results. The expected results will underscore the intrinsic connection between innovation, entrepreneurship, and sustainability within the realm of equity based crowdfunding, specifically focusing on initiatives in the cultural and creative industries. Preliminary evidence suggests a growing emphasis on addressing social sustainability concerns, particularly those pertaining to women’s empowerment and gender equality. For instance, the emergence of innovative

startups led by all-female founding teams under the age of 35 serves as a compelling example of this shift towards inclusivity and diversity within entrepreneurial endeavors. This finding may support the valuable importance of entrepreneurial teams in the equity crowdfunding journey (Troise et al., 2024) and, in this specific case, their role in the sustainability oriented sphere of the entrepreneurial initiatives. Additionally, there is a discernible recognition of the importance of promoting educational initiatives and fostering a sense of community engagement, as evidenced by projects centered around communal reading programs and similar activities.

Furthermore, the initial findings shed light on the significance of integrating sustainable practices into production processes, particularly concerning environmental sustainability. Notably, craftsmanship emerges as a key driver in waste reduction efforts, with methodologies such as Just in Time and Made to Last production demonstrating efficacy in minimizing environmental impact. This underscores a broader movement towards environmentally conscious approaches within the creative and cultural sectors, reflecting a growing awareness of the importance of responsible resource management and sustainable business practices.

Research limitations. The research is a work in progress, and we are still collecting data, but it is crucial to acknowledge its current limitations. While the emphasis on cultural and creative industries provides valuable insights into the intersection of innovation, entrepreneurship, and sustainability within this specific domain, it also limits the generalizability of findings and their applicability across diverse contexts. Moreover, the subjective nature of case study selection introduces another layer of complexity. Despite efforts to maintain objectivity and transparency about our selection criteria, the inherent subjectivity in selecting case studies may raise concerns about the validity and reliability of findings. As the research progresses, addressing these limitations will be crucial to ensuring the robustness and credibility of its findings.

Managerial implications. The results will shed new light on the aspects concerning social and environmental sustainability in equity crowdfunding campaigns. Specifically, the research will allow entrepreneurs to understand how to link innovation and sustainability through the communication of positive impacts of their business idea or development project on people. The suggestions range from disseminating messages focused on the development of educational initiatives and the enhancement of the status of women by guaranteeing the gender equality to efforts towards waste reduction and customization. In this vein, previous studies highlighted the crucial role of the formulation of “message framing” in influencing investor or customer behaviours in crowdfunding contexts (Corsini and Frey, 2023; Testa et al., 2024).

From a managerial standpoint, these results carry significant implications for campaign initiators, namely entrepreneurs, and stakeholders involved as the crowd, so called bakers or investors. Firstly, entrepreneurs are urged to recognize the strategic value of embedding sustainability principles into their innovative ventures, as it not only enhances social and environmental impact but also fosters long-term competitiveness and resilience in an evolving market landscape. Furthermore, recent studies provided evidence that equity crowdfunding platforms provide additional benefits (other than financial ones) to entrepreneurs (such as in terms of knowledge and network) (Troise and Tani, 2021; Troise et al., 2023 a, 2023b). Secondly, the research shows how stakeholders in equity based crowdfunding platforms are encouraged to prioritize projects that demonstrate a commitment to sustainability, recognizing the potential for both financial returns and positive societal outcomes.

Originality of the paper. This paper contributes to the ongoing discourse surrounding sustainable-oriented innovation in several significant ways. Firstly, it delves into the relatively overlooked realm of equity crowdfunding campaigns within cultural and creative industries, a sector predominantly characterized by the utilization of reward-based crowdfunding platforms by campaign initiators (Rykkja et al., 2020b; Cavalcanti Junqueira and Soetanto, 2022; Cicchiello et al., 2022).

Secondly, our work in progress represents an original attempt to interconnect the concepts of open innovation, entrepreneurship, and sustainability, with a specific emphasis on social sustainability. The latter is an emerging orientation within cultural and creative industries, where issues like women’s empowerment, inclusion, health, and well-being are gaining traction.

Furthermore, we have adopted a qualitative approach in conducting our research, in contrast to the predominant utilization of quantitative methodologies noted in sustainability-oriented innovation via crowdfunding (Wehnert and Beckmann, 2021) and in equity based crowdfunding (Mochkabadi and Volkmann, 2020). This systematic qualitative approach to data collection and analysis diverges from the prevalent reliance on statistical measures and numerical data to evaluate the impact and effectiveness of sustainability initiatives, particularly evident in crowdfunding campaigns within cultural and creative industries (Petit and Wirtz, 2022). By taking this qualitative stance, our research offers a fresh perspective on the dynamics of crowdfunding within cultural and creative industries.

In essence, this study underscores the symbiotic relationship between innovation, entrepreneurship, and sustainability, emphasizing the necessity for businesses to adopt holistic and responsible practices in driving societal progress and economic growth.

Finally, this paper aims to respond to recent calls for more research in the sphere of the above mentioned domains, especially in the role of crowdfunding in moving towards a sustainable society (Testa et al., 2019; Troise et al., 2021), and in the evolution or development of crowdfunding in the context of cultural and creative industries (Moritz and Block, 2016; Ryu, 2019; Rykkja et al., 2020a, 2020b).

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Product vs sales platform sustainability: who wins the online challenge? An exploratory analysis of Italian consumers

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Abstract

Nowadays, sustainability has emerged as a paramount concern across various industries. Addressing environmental and social sustainability issues has become increasingly urgent in light of escalating global challenges, such as climate change, biodiversity loss, pollution, resource depletion, and waste management. This study delves into the intricate dynamics of sustainability within e-commerce, specifically focusing on Italian consumers' perspectives. While offering unparalleled convenience and accessibility, e-commerce has also been implicated in encouraging compulsive purchasing practices (i.e., leading to unnecessary purchases, often changing products or devices in pursuit of the latest versions or updates), exacerbating greenhouse gas (GHG) emissions (due to the high environmental cost associated with shipping, especially intercontinental ones) and generating significant waste (in terms of over-packaging and plastic films as well as technologically obsolete products). As the digital marketplace continues to burgeon, understanding its environmental footprint and devising strategies to mitigate its adverse effects is imperative. Recognising the pressing need for transformation within the e-commerce sector, through an Exploratory Factor Analysis (EFA) performed on a sample of 382 respondents, this research aims to understand the extent to which Italian consumers prioritise sustainability considerations in their purchasing decisions. Furthermore, it seeks to investigate whether product or platform sustainability enhancements exert a noticeable influence on consumers' propensity towards sustainable-conscious purchasing behaviours. By integrating insights from consumer behaviour studies and sustainability literature, this study contributes to clarify the nuanced interplay between e-commerce, sustainability, and consumer preferences. The results hold implications for businesses, policymakers, and stakeholders invested in fostering more sustainable practices within the digital marketplace. Ultimately, this research seeks to inform strategies aimed at fostering a more sustainable and responsible e-commerce ecosystem.

Key words: sustainability; product; sales platform; e-commerce; consumers behaviours; online purchases.

Framing of the research. The presence of e-commerce in the actual consumers' habits is relevant. Taking into consideration only one of the possible indicators, for example the total worldwide retail e-commerce revenue in 2023, the aggregate value amounts to more than 3,1 billion dollars. Europe is ranked in third position, immediately after America. These numbers are the concrete evidence of the actual dimension of this channel, in terms of selling activity, both for producers and distributors, underlining the weight of developed countries.

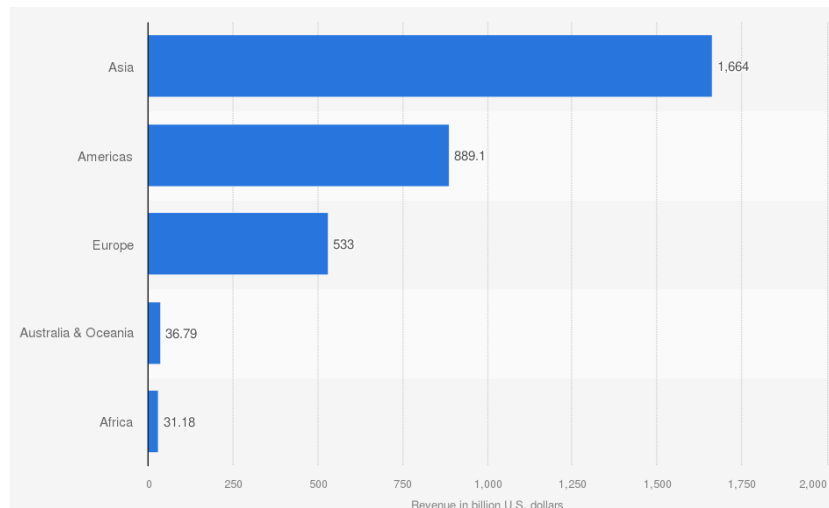
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Graphic 1: Total retail e-commerce revenue worldwide in 2023, by region (in billion U.S. dollars)



Source: Statista (2024).

Surely COVID-19 pushed online shopping, changing the approach of different stores or operators as well as the purchasing behaviour of consumers (Kim, 2020). In the last years e-commerce generated different opportunities for traditional and new companies, where the latter found new way for business development (Singh and Kundu, 2002). Observing this phenomena, more critical success factors were analysed, to understand the right setting for this modern form of sales. Five main categories were identified and precisely: technology acceptance factors, social factors, cognitive factors, ethical factors and environmental factors (Varela et al., 2017). However, the environmental factors are those that need a deeper attention, strictly connected with the other dimensions of sustainability (Pålsson et al., 2017; Oláh et al., 2018). Many researches focused the attention on specific aspect, like logistics (Cano et al., 2022; Ju et al., 2023; Gonzalez et al., 2023), above all for CO2 emissions (Carling et al., 2015), packaging (Lu, et al., 2020; Escursell et al., 2021; Yang et al. 2023) or supply chain (Rao et al., 2021; Prajapati et al., 2022). An enlarged vision in the relationship between e-commerce and sustainability is a recent field of research (Rita and Ramos, 2022; Haryanti and Subriadi, 2022). Actually, there is the necessity to search the determinants that could create a real competitive advantage in this way, generating a greater attractiveness of the value propositions. Hence, evaluating what above mentioned, the present study is an attempt to give a concrete contribution, specifically from the consumer point of view. In particular, the aim is to consider not only the importance attributed to sustainability in online purchases, but to verify whether this attention is paid in the same way to both the platform and the product. Going into reality, it is not necessarily the case that a "sustainable" product is sold within a platform that similarly gives a clear signal of convergence in this area, or vice versa. Therefore, how is important the sustainability of the on-line platform? How is relevant the sustainable commitment of the producer that uses the on-line channel? These are only some of the questions that represent the gap in the literature.

Purpose of the paper. Against this background, our research endeavours to explore the extent to which Italian consumers prioritise sustainability considerations in their e-commerce purchasing decisions, unravelling the complex dynamics within this sector. For this purpose, the following three research questions were defined:

RQ1: What factors drive Italian consumers' behaviour when purchasing from e-commerce platforms?

RQ2: Do sustainability features influence Italian consumers when purchasing from e-commerce platforms?

RQ3: How do sustainability enhancements in product offerings and e-commerce platforms influence Italian consumers' propensity towards sustainable-conscious purchasing behaviours?

The first research question aims to identify the factors that Italian consumers take into consideration when buying products from e-commerce platforms. These factors may include convenience, pricing, product variety, brand reputation, and sustainability, among others. Answering this question will help us understand whether the sample of Italian consumers considers and values sustainability during their purchases in the digital environment. This leads us to the second research question, which deepens the role of sustainability features in influencing Italian consumers' preferences within the e-commerce landscape. Through the lens of EFA methodology, this study aims to discern how sustainability considerations - such as eco-friendly packaging, ethical sourcing, carbon footprint reduction initiatives, to name a few - impact consumers' purchasing decisions. Finally, the third research question investigates the interplay between sustainability enhancements in product offerings and e-commerce platforms and their influence on Italian consumers' propensity towards sustainable-conscious purchasing behaviours. Therefore, the main objective is to identify the consumers' reactions to such sustainable initiatives, providing valuable insights for businesses and policymakers committed to promoting sustainable practices in the digital marketplace. By addressing these research questions, our study aims to contribute to a deeper understanding of consumer behaviour in e-commerce contexts and offer guidance on encouraging sustainability online.

Methodology. Based on the previous background and research objectives, an online questionnaire targeting Italian consumers was developed to highlight what moves their behaviour when purchasing products from e-commerce

platforms. The investigation examined the factors underneath Italians' online purchasing process, deepening the effect of the two sustainability implementations (i.e., product and sales platform) on online purchasing decisions as well as barriers and incentives towards more sustainable-conscious behaviour. The data collection process ran through the Google Form platform from January to March 2024, with an initial pre-test conducted beforehand. The investigation reached a sample size of 382 respondents and included multi-item questions reflecting the topics that emerged from the background analysis. To measure responses, some questions provided a seven-point Likert scale evaluation - with '1' and '7' representing low or high matches, respectively - while other questions employed open or multiple-choice answers. Notably, the study design was informed by similar methodologies that have produced positive outcomes in previous research (Bruner, 2021). The survey aimed to capture insights into the relationship between sustainable behaviour and e-commerce among Italian consumers. It consisted of six sections, each with a specific focus. The first section asked respondents about their general sustainability knowledge, including the environmental, social, and economic dimensions. It also aimed to understand the importance of sustainability in their everyday life decisions and how it influences their behaviour. Moving to Section 2, participants provided insights into their e-commerce usage patterns and the factors that influence their online purchasing processes. Section 3 delved deeper into the sustainability dialogue within e-commerce, exploring respondents' perceptions of product sustainability implementations while Section 4 shed light on consumers' attitudes towards platform-level sustainability initiatives. Section 5 was dedicated to investigating potential barriers and incentives influencing consumers' adoption of more sustainable-conscious behaviours. Finally, essential socio-demographic data useful for assessing the heterogeneity and reliability of the sample was collected. Through these sections, it was possible to capture a comprehensive understanding of Italian consumers' perceptions and behaviours concerning sustainability and e-commerce, contributing to a nuanced analysis of these interconnected domains.

Table 1: Sample composition

Gender	Age	Education	Occupation	Income (€)	Location
Male, 46 Female, 54	18-30, 53 31-45, 27 46-60, 16 >60, 4	High school or below, 45 College or university, 46 Postgraduate, 9	Student, 26 Employed, 46 Self-employed or entrepreneur, 14 Retired or unemployed, 14	< 999, 25 1.000-1.999, 42 2.000-2.999, 18 ≥ 3.000, 15	Northern Italy, 21 Central Italy, 8 Southern Italy and Isles, 71

Source: our elaboration.

The empirical analysis was performed on a sample of 382 participants who provided complete and reliable data. To ensure the reliability of our findings, the questionnaire included specific questions aimed at assessing the respondents' attention. In detail, participants were 54% female and 46% male, mainly from Southern Italy and Isles (71%), with an average age of 35 and a high school (45%) or university (46%) education. As for occupation, almost half of the respondents were employed (46%), followed by students (26%), self-employed or entrepreneurs (14%) and retired or unemployed (14%). This data reflects the average monthly income recorded, which stands at a medium-high level with an average of EUR 2,300,00. Table 1 summarises the respondents' socio-demographic profile.

Results. IBM SPSS Statistics was used to perform the Exploratory Factor Analysis (EFA), which helped us to identify the latent factors underneath the consumer behaviour of Italians when purchasing products from e-commerce platforms (Abdi and Williams, 2010). To avoid correlation and bias problems, 36 variables were selected from the original database, resulting in a final dataset of 382 observations. The correlation analysis confirmed the significance of all variables in explaining the phenomenon, showing positive values of low, medium, and high. To perform a robust analysis and test the sample's adequacy, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO Test) and the Test of Sphericity by Bartlett were carried out. Low index values suggest the potential inadequacy of the sample, as correlations between pairs of variables cannot be explained by the variance shared by the set of variables. Both measures proved significant - the KMO Test value exceeded 0,7 while BTS significance was below 0,05 (Table 2) - allowing us to proceed with the analysis.

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,944
Bartlett's Test of Sphericity	Approx. Chi-Square	12323,92
	df	630
	Sig.	0

Source: our elaboration with IBM SPSS Statistics.

Next, communalities were studied and showed significant values regarding the level of variance explained by common factors. In particular, four factors were extracted - explaining more than half of the total variance (precisely, 70,29%) - as briefly summarised in Table 3.

Table 3: Summary of the latent factors

Latent factor		Item	Value ¹
1	Principal e-commerce sales conditions and characteristics	SHIP_METH	0,857
		SHIP_COST	0,845
		SHIP_TIME	0,826
		B_REPUT	0,821
		SAFETY	0,815
		REVIEW	0,813
		PRICE	0,792
		VARIETY	0,789
		REPUTATION	0,778
		RET_POLICY	0,762
		NAV_EASY	0,751
		NAV_EXP	0,746
		SALES	0,724
		INNOV	0,629
		PICK-UP_POINT	0,556
		SUST	0,526
2	Product and sales platform sustainable features	SUST_CERT	0,821
		PLAT_SUST	0,821
		PROD_WTP	0,804
		SUST_E-COM	0,789
		PLAT_WTP	0,768
		PROD_ENV	0,747
		PLAT_EFFORT	0,692
		PROD_SOC	0,664
		PLAT_TRANSP	0,604
		SUST_KNOW	0,555
		PROD_ECO	0,535
3	Consumers' commitment toward sustainability	SUST_ECO	0,831
		SUST_SOC	0,823
		SUST_INFL_ECO	0,758
		SUST_ENV	0,752
		SUST_INFL_SOC	0,744
		SUST_INFL_ENV	0,682
4	Marginal e-commerce sales conditions and characteristics	OPINION	0,759
		FIDELITY	0,667
		INSTALMENT	0,574

¹ Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 7 iterations.

Source: our elaboration with IBM SPSS Statistics

The first latent factor emerging from the EFA - i.e., 'Principal e-commerce sales conditions and characteristics' - includes a broad set of variables that influence how customers perceive and engage with the fundamental elements of the e-commerce industry. It encompasses a wide range of factors crucial in shaping consumers' experiences and decision-making processes. Firstly, variables such as shipping methods (i.e., SHIP_METH), costs (i.e., SHIP_COST), and time (i.e., SHIP_TIME), along with the possibility to ship packages to a pick-up point (i.e., PICK-UP_POINT) are ground elements that directly influence the logistical aspects of online transactions. These variables reflect consumers' expectations regarding the efficiency, affordability, and flexibility of delivery options, which are pivotal in enhancing overall satisfaction and convenience. Secondly, factors such as e-commerce's brand reputation, transactions' safety, users' reviews, and customer service reputation (i.e., B_REPUT, SAFETY, REVIEW, REPUTATION) showcase the importance of trust and reliability in e-commerce platforms. These variables underscore the importance consumers attach to the credibility and security of online transactions, as well as the significance of peer feedback and customer support in shaping their purchasing decisions. Moreover, in this environment, customers tend to prioritize cost-effectiveness, product variety, and flexibility in their shopping experiences. This is reflected in their preference for competitive pricing (i.e., PRICE), a wide range of products (i.e., VARIETY), favourable return policies (i.e., RET_POLICY), discounts, and sales promotions (i.e., SALES), which foster customer engagement and loyalty in the e-commerce ecosystem. Furthermore, variables related to easy navigation through the e-commerce platform (i.e., NAV_EASY), the experience associated with navigating throughout the platform (i.e., NAV_EXP), and e-commerce

innovativeness (i.e., INNOV) underscore consumers' preferences for user-friendly interfaces, seamless browsing experiences, and innovative features that enhance overall usability and satisfaction. Notably, the inclusion of sustainability (i.e., SUST) as a variable within this latent factor suggests consumers' increasing consciousness towards such concerns as well as their growing expectations for sustainable practices and products within the e-commerce environment. This first latent factor underscores the multifaceted nature of consumers' expectations and preferences within the e-commerce domain. E-commerce platforms must prioritise factors such as efficient logistics, trustworthiness, affordability, variety, user-friendliness, and sustainability to enhance consumer satisfaction, trust, and loyalty. In particular, it is crucial for e-commerce businesses to align their strategies with current trends and preferences, placing emphasis on sustainability and ethical considerations. By doing so, they can gain valuable insights to improve their operations, provide better customer experiences, and stand out in a highly competitive market.

The second latent factor is called 'Product and sales platform sustainable features' as it reflects consumers' attitudes, preferences, and behaviours towards product and sales platform sustainability. Product sustainability preference is noticeable by the tendency to prefer a product labelled as sustainable (i.e., SUST_CERT), the willingness to pay more for such products (i.e., PROD_WTP), and the importance attached to sustainability when purchasing from e-commerce platforms (i.e., SUST_E-COM). These variables denote consumers' willingness to align their purchasing behaviours with their values and beliefs, prioritising sustainability considerations in their decision-making processes. Consumers' perceptions of e-commerce platform involvement in sustainability (i.e., PLAT_EFFORT), the willingness to pay more for product from sustainable e-commerce platforms (i.e., PLAT_WTP), and the likelihood to buy from platforms implementing sustainable practices rather than others (i.e., PLAT_SUST) underscore the importance of sales platforms' sustainability initiatives in influencing consumer perceptions and loyalty. These variables demonstrate consumers' expectations for e-commerce platforms to proactively engage in sustainable practices and transparently communicate their commitment to corporate social responsibility. Furthermore, the importance attached to the environmental, social, and economic impacts of products when purchasing online (i.e., PROD_ENV, PROD_SOC, PROD_ECO) reflects consumers' holistic understanding of sustainability and their desire for products and platforms that demonstrate positive effects across multiple dimensions. The last two variable of this factor (i.e., PLAT_TRANSP and SUST_KNOW) reflect consumers' beliefs in e-commerce platforms' transparency and commitment to sustainability, as well as their general understanding and interest in this topic. Such variables underline the role of trust, transparency, and education in fostering sustainable consumption behaviours. As a result, e-commerce platforms must integrate authentic and credible sustainability initiatives into their business models and prioritise disclosing of their actions to stakeholders. Likewise, this latent factor highlights the importance of transparency, education, and consumer engagement in promoting sustainable consumption behaviours and fostering a more sustainable e-commerce ecosystem.

The third latent factor is entitled 'Consumers' commitment toward sustainability' as it captures consumers' values, attitudes, and behaviours regarding sustainability in daily lives. It includes variables such as the importance of economic, social, and environmental sustainability in daily situations (i.e., SUST_ECO, SUST_SOC, and SUST_ENV), reflecting consumers' commitment to holistic sustainability principles, and prioritising concerns beyond mere economic factors in their everyday lives. These variables underscore consumers' propensity to integrate sustainability considerations into their decision-making processes (i.e., SUST_INFL_ENV, SUST_INFL_SOC, and SUST_INFL_ECO), and to align their actions and behaviours with their values and beliefs, indicating a genuine commitment to promoting positive environmental, social and economic impacts in everyday choices. As sustainability emerges as a guiding principle in consumers' lives, e-commerce platforms and businesses should leverage insights from this latent factor to understand better consumers' values, priorities, and decision-making processes regarding sustainability. By aligning their offerings, practices, and communications with consumers' demands, businesses can improve their brand reputation, foster customer loyalty, and drive positive social and environmental impacts by empowering consumers to make more sustainable choices in their daily lives.

The last latent factor refers to the 'Marginal e-commerce sales conditions and characteristics'. Unlike the first latent factor, which focuses on primary features influencing consumer behaviour and attitudes, the latter captures peripheral features that may have an impact - yet marginal - on consumer decision-making processes within the e-commerce landscape. The inclusion of variables such as influencers' opinions (i.e., OPINION), loyalty programs of e-commerce platforms (i.e., FIDELITY), and the possibility of instalment payments (i.e., INSTALMENT) connotes elements that, although significant, play a secondary role in shaping consumer preferences or behaviours within the e-commerce domain. These variables have lower priority than others because they are typically not considered primary considerations for most consumers when making online purchases and may not be a decisive factor for many online shoppers. However, this latent factor suggests that while loyalty programs and influencers' opinions may not be the primary determinants of consumer behaviour, they can still serve as valuable tools for enhancing customer engagement and loyalty. Additionally, offering instalment payment options may cater to specific segments of consumers who prioritise financial flexibility or budget management. Therefore, businesses should keep considering these aspects to enhance customer satisfaction, retention, and overall sales performance.

Research limitations. This study is not without limitations, which can be mainly attributed to the sample size, its composition, and the fact that respondents are predominantly located in Southern Italy. However, it should be pointed out that this study stands as exploratory, aspiring to explore consumer behaviour regarding the topics under investigation before proceeding with more in-depth analyses.

Managerial implications. This study provides practical guidance for businesses operating in the e-commerce sector to enhance their sustainability practices and engage environmentally-conscious consumers. The findings emphasise the strategic importance of focusing on both product and sales platform sustainability to align with consumer preferences and promote sustainable consumption behaviours. By investing in sustainable product design, transparent communication, and eco-friendly sales channels, companies can differentiate themselves in the marketplace and build stronger relationships with customers. Moreover, the study contributes to the academic literature by empirically examining the influence of sustainability on online purchasing behaviour among Italian consumers and offering managerial implications that bridge theory and practice. Moving forward, this research lays the ground for future studies exploring cross-cultural variations in consumer attitudes towards sustainability, longitudinal analyses of shifting consumer behaviours, and evaluations of the efficacy of different sustainability initiatives in driving business success and environmental stewardship in the e-commerce landscape.

Originality of the paper. This research aimed to provide a comprehensive understanding of the influence of sustainability on Italian consumers' online purchasing behaviour. In particular, the study explored two crucial aspects of sustainability in e-commerce - product and sales platform sustainability - to determine which of the two dimensions has the most significant impact on consumer decisions. It represents a novel contribution to the existing literature - as prior studies have yet to address this specific topic - and its findings are expected to significantly contribute to the existing literature on the subject and pave the way for future research on e-commerce sustainability.

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Driving Corporate Social Responsibility: Examining the Impact of Diversity and Inclusion Across Multiple Levels

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Abstract

Firms throughout the world are increasingly relying on Corporate Social Responsibility (CSR) as a key strategy to promote economic, social, and environmental well-being in the long run. The many ways in which diversity affects ESG (environmental, social, and governance) performance are investigated in this research. Diversity on the board, diversity policy at the company level, and cultural diversity in regions are all factors that we take into account and work to incorporate.

At the micro level of board diversity, we primarily depend on stakeholder theory and resource based theory; these theories give a theoretical foundation for the complex phenomena of diversity and CSR. We depend on social integration theory at the meso level. Lastly, we use institutional theory to address the macro level, for the cultural diversity in regions.

We use panel data of 573 listed companies in Germany, France, Spain, and Italy from 2013 to 2022. Regional cultural diversity, diversity initiatives at the firm level, and a diverse board all contribute to better environmental, social, and governance (ESG) results.

By highlighting the need to promote diversity within corporate governance structures and at all levels, our findings add to the body of knowledge in CSR policymaking. At both the micro and macro levels, ESG performance can be improved if policymakers use this information to create targeted measures that encourage inclusive corporate environments. In order to promote responsible and sustainable business practices that are in line with larger social objectives, this study highlights the need for lawmakers to emphasize programs that increase diversity in corporate leadership and foster inclusive workplace cultures.

Key words: Diversity; ESG performance; Board diversity; Policy diversity; Regional cultural diversity

Framing of the research. A company's commitment to improving long-term economic, social, and environmental well-being through its policies, practices, and resources is known as corporate social responsibility, or CSR (Du and Vieira 2012). Corporate Social Responsibility (CSR) has become a crucial approach for businesses to interact with their stakeholders, improve their brand, and obtain a competitive edge (Elkington 1997; Esen 2013; Ozdora Aksak et al. 2016). Due to the complex relationships among stakeholders and the interconnectedness of numerous social and environmental elements, sophisticated techniques of evaluating CSR are necessary (Diez-Cañamero et al. 2020). Diez-Cañamero et al. (2020) have identified several products of this trend, including social accounting, sustainability reporting, performance measures, environmental and social norms, and ESG ratings from rating agencies.

A number of studies have examined the effects of various factors on a firm's CSR performance, including the quality of governments (Bandeira Pinheiro et al. 2021), the characteristics of the board of directors (i.e., board independence, board size, board activity, and board diversity) (Disli et al. 2022; Menicucci and Paolucci 2022), and the firm itself (i.e., family ownership and control) (Cordeiro et al. 2020). However, it is important to acknowledge that these are only a few distinct aspects of a larger picture. We contend that there are three crucial factors to concurrently take into account in response to a call for studies that would incorporate various levels of analysis (Shin et al. 2023): board diversity (i.e., micro level), firm cultural diversity (i.e., meso level), and regional cultural diversity (i.e., macro level).

Numerous studies have shown that board features positively impact CSR initiatives at the local level (Nandy et al. 2023). It has been noted that the board of directors plays a critical role in giving the business access to resources, information, strategic guidance, and networking opportunities (Pfeffer 1972; Hillman et al. 2000; Huse 2007). It is critical to consider each board member's unique qualities (Van Ees et al. 2009). Members of a diverse board team bring a wide range of experiences, perspectives, and backgrounds to the table (Van Der Walt and Ingley 2003; Ibrahim and Hanefah 2016). Previous studies (Milliken and Martins 1996; Erhardt et al. 2003; Kang et al. 2007) have defined board diversity as variation in the membership of the board of directors (e.g., gender, age, nationality, education, and experience). According to Bear et al. (2010) and Hillman et al. (2000), a board with greater diversity is better equipped

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to understand and address sustainability and environmental efforts, which in turn improves the ESG performance. This is because a more diverse board brings a larger range of viewpoints and experiences to the table.

Diversity in the workplace at the meso level is the coexistence of people with different social origins. By utilizing the distinctive characteristics of a diverse workforce, the equal opportunity philosophy seeks to prevent talent loss and may even increase organizational productivity and efficiency (Hossain et al. 2020). A company's systematic attempts to draw in, hire, pay, and develop a diverse workforce are included in its diversity policy (Grobler et al. 2006). Previous studies have shown that different types of diversity are linked to higher levels of innovation, better strategic decision-making, and better results, especially in situations that call for sophisticated problem-solving and invention (Hossain et al. 2020). Establishing rules that support diversity on boards and provide opportunities for diversity inside organizations is essential to creating a culture that values equity and inclusivity. According to this viewpoint, fostering a diverse policy within the company may support and improve ESG performance.

An egalitarian and inclusive cultural setting is also important at the macro level (Stoermer et al. 2016; Bohren et al. 2019). As per Hofstede (2011), culture arises as a communal artifact in social contexts where people have comparable values, beliefs, and customs, which differ among different countries, sectors, and establishments. According to this viewpoint, national cultures that place a high value on diversity and equality may support and improve ESG performance. Being the first to examine the influence of the external cultural environment at the regional level, our work is noteworthy. We are better able to comprehend how regional cultural aspects affect ESG performance thanks to this regional viewpoint.

Purpose of the paper. As best of our knowledge, no research has looked at the influence of diversity on ESG performance taking into account all three levels: regional culture of diversity (macro level), company culture of diversity (meso level), and board diversity (micro level). Because of this, the goal of our research is to show how increasing diversity, regardless of level, affects a company's ESG performance.

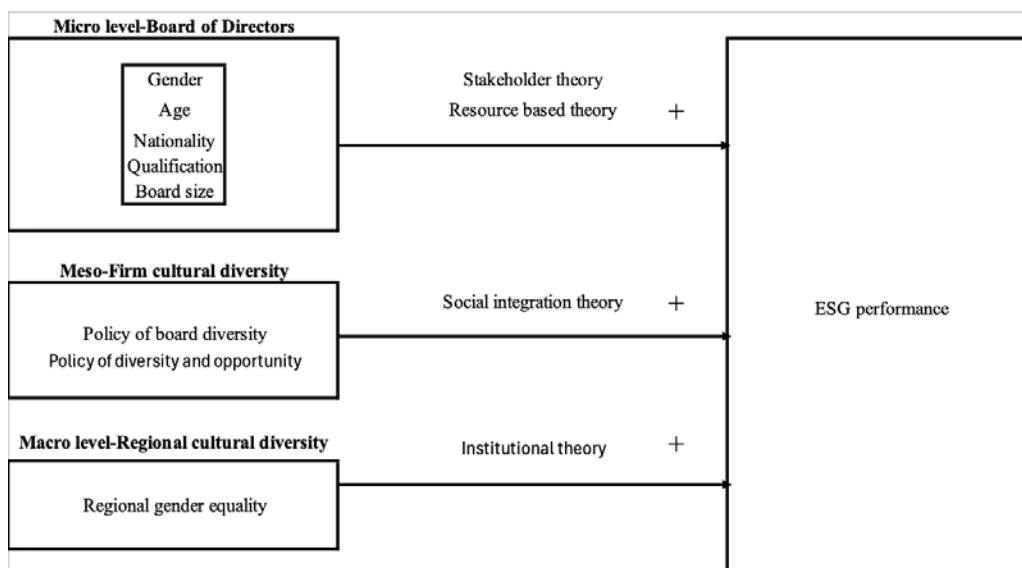
Furthermore, if only one or a small number of diversity factors are considered, the results may be biased due to the complex nature of board diversity (Zattoni and Pugliese 2021). Our study is distinct on a micro level since it considers many board characteristics, such as gender, nationality, qualification, age, and board size.

We argue that, at the meso level, using this paradigm to explore the domain of firm culture diversity helps us understand the complex interactions among variables affecting ESG performance in businesses. Establishing rules that support diversity on boards and provide opportunities for diversity inside organizations is essential to creating a culture that values equity and inclusivity. These rules act as catalysts to foster an inclusive workplace environment that values the diversity of viewpoints and backgrounds.

As the first study to examine the effects of the external cultural diversity environment at the regional level, ours stands out on the macro level. We can gain a better understanding of how local cultural elements affect corporate performance and decision-making, particularly with regard to ESG performance, by adopting a regional viewpoint. Since we think that each region has extremely distinct cultural and socioeconomic traits, we think it is crucial to look at regional diversity performance through this perspective. We hope to offer a full assessment of diversity dynamics and their consequences for business sustainability initiatives by utilizing this extensive metric.

We use a multi-theoretical framework because a single theory will not be sufficient to explain this link (Konadu et al. 2022). We mostly depend on resource-based theory (Hillman et al. 2009) and stakeholder theory (Freeman et al. 2010) at the micro level of board diversity. We use social integration theory to address corporate cultural difference at the meso level (Akintayo et al. 2023). Lastly, we use institutional theory to discuss the macro level of regional cultural variety (Scott 1987). Figure 1 shows the theoretical framework.

Fig. 1: Theoretical framework



Source: our elaboration

So our analysis spans three distinct levels of analysis (Figure 1): board diversity (i.e., micro level), firm cultural diversity (i.e., meso level), and regional cultural diversity (i.e., macro level). Each level is guided by specific theories that enable us to fully understand the interplay between diversity and ESG performance. At the micro level of board diversity, we rely mainly on stakeholder theory and resource based theory. In the meso level of firm cultural diversity, we rely on social integration theory. These theories allow us to explore how cultural diversity within the firm influences performance and innovation through the integration and social inclusion of employees. Finally, with regard to the macro level of regional cultural diversity, we draw on institutional theory. By following this theoretical approach, we gain a comprehensive and in-depth view of the role of diversity and inclusion on corporate ESG performance.

Methodology. Methodologically, we develop a panel model covering the years 2013 to 2022. We studied 573 listed firms in France, Spain, Italy, and Germany. Panel data analysis is the best technique to use when the data contains both cross-sectional and time-series elements. Because the same cross-sectional unit is polled repeatedly, our data is pooled across time and geography (Naciti 2019). For studying the ESG score, we used several linear panel regression models. Researchers examining the relationship between corporate governance and commercial success have suggested using either the initial differences or the fixed effects (inside) estimators (Andres and Vallelado 2008). However, as shown by Weisbach and Hermalin (2000), a board of directors is created endogenously. The fixed effects is inconsistent when the strict exogeneity requirement is not satisfied (inside). Fixed effects estimators are biased in the particular case of board structure because they ignore the influence of company performance on the existing board structure (Wintoki et al. 2012). A firm must wait a while to observe performance improvements following the implementation of a corporate governance system (Haniffa and Cooke 2005). In order to account for a potential endogeneity issue, we choose all independent variables with lags of one year, in accordance with Ashwin et al. (2015) and Liang et al. (2013). Random effects were used because, according to Hilbe (2011), "random-effects estimators are more efficient than fixed-effects estimators when data are from a larger population of observations, as well as when there are more panels in the data." The Hausman test confirms this choice.

We test hypotheses taking into account the effects on the ESG Score of gender, age, nationality, qualification, board size, diversity policy, RGEI and control variables.

Model 1 ESG Score = f(Token + Critical Mass + Blau + Age + Nationality + Qualification + Board Size + Policy board diversity + Policy diversity and opportunity + RGEI + Control variables)

As a robustness check, we considered several indices of ESG Score: ESG combined score, ESG environmental pillar, ESG social pillar and ESG governance pillar.

Results. This is the first research in the literature examining the relationship between diversity and corporate social responsibility (CSR), taking into account the three factors: board diversity, regional cultural diversity, and firm cultural diversity. Because of this, the goal of our research is to show how greater diversity has a positive and substantial effect on a company's CSR performance.

Initially, we looked at a number of board diversity, and each one improved ESG performance. We discover that diversity generally improves ESG performance and that, when taken into separate consideration, nationality, qualification, board size, and gender all have positive effects. Age is the only factor that is insignificant. Specifically, the data confirms that having one female director has a detrimental impact on ESG performance. According to the corpus of extant literature, a director who is a woman is seen as a symbol rather than as competent. Therefore, a single female director cannot have an impact on group dynamics or performance decisions, including ESG performance. Additionally, our statistics suggest that three female directors is sufficient. Prior research indicates that barriers that minorities perceive diminish when the number of female directors increases (Kanter 2000), and that better results result from collaborations across different groups (Wiersema and Mors 2023). Our results lend credence to the hypothesis that three is the magic number.

Secondly, we intentionally concentrate on regions within a state because we recognize the rich fabric of socioeconomic and cultural diversity that makes region unique. By taking this regional approach, we hope to learn more about the complex interactions between regional cultural diversity and economic variables that affect business dynamics, especially when it comes to ESG performance. This method enables us to get a more nuanced picture of how regional settings influence corporate behavior and sustainability strategies rather than a one-size-fits-all perspective. The beneficial impact that has been noticed highlights the crucial role that regional cultural variety plays in creating an atmosphere that is favorable for sustainable business practices. The relation shown between regional cultural diversity and ESG performance emphasizes how crucial it is to take local circumstances into account when developing sustainable business strategies.

Third, the diversity culture of the company, as evidenced by the diversity and opportunity and board diversity policies, has a favorable effect on ESG performance. This is so that varied viewpoints and experiences are encouraged in an open and equitable work environment, which is fostered by such policies. These policies improve creativity, strategic decision-making, and problem-solving abilities by encouraging diversity in board and organizational decision-making processes. Furthermore, a varied staff is better able to comprehend and address the intricate and dynamic sustainability issues that

modern firms face. As a result, firms with strong diversity policies are in a better position to incorporate ESG factors into their daily operations, which leads to improved ESG performance.

Research limitations. There are several restrictions on this study. Our analysis first focuses on listed firms in some States of the European Union; however, it would be intriguing to broaden the study to unlisted companies and investigate other geographical contexts in the future. Due to a dearth of trustworthy data, it has not been possible to date. Second, internal company factors like other director attributes like tenure and whether or not they have an executive position could have an influence on our findings and should be taken into account going forward.

Managerial implications. Our study's findings have significant implications for both managerial and policy domains. We delve into the realm of ESG, shedding light on crucial factors that can inform policymaking and managerial decision-making processes.

Firstly, we emphasize the importance of diversity and inclusion within corporate governance structures. Our findings suggest that policymakers can utilize this information to craft more effective ESG policies that encourage companies to adopt practices promoting diversity and inclusion. Diversity and inclusion have gained increasing recognition as crucial elements of sustainable and responsible business practices, making this particularly significant. We can thus prioritize initiatives aimed at fostering diverse and inclusive corporate cultures, which not only align with societal values but also contribute to improved ESG performance.

Moreover, our research underscores the importance of considering regional cultural factors when designing ESG policies. This insight implies that a one-size-fits-all approach to ESG may not be effective, as cultural nuances play a significant role in shaping attitudes towards ESG practices. We can use this understanding to tailor interventions that resonate with the specific cultural contexts of different regions, thereby ensuring the relevance and effectiveness of ESG initiatives on a local scale.

Furthermore, our study highlights the positive correlation between diversity, and ESG performance. This provides a compelling rationale for policymakers to prioritize initiatives aimed at promoting diversity in corporate leadership and fostering inclusive workplace cultures. By doing so, we can not only enhance ESG performance but also contribute to broader societal goals of equity and social justice.

Our research offers actionable guidance for policymakers seeking to advance sustainable and responsible business practices. By emphasizing the importance of diversity at all levels, and regional cultural factors in shaping ESG policies and practices, we provide valuable insights that can inform strategic decision-making processes at both the firm and regional levels. Ultimately, this can lead to the creation of more inclusive and equitable business environments, thereby fostering sustainable development and societal well-being.

Originality of the paper. In our study, we aim to significantly advance the existing understanding of how diversity at all level contribute to enhancing ESG performance within organizations. To achieve this, we adopt a comprehensive approach by examining multiple dimensions of diversity simultaneously. These dimensions encompass age, nationality, qualifications, gender, and board size, allowing us to paint a detailed picture of the interplay between various diversity factors and ESG outcomes.

Moreover, we delve deeper into the complexities of diversity by considering the influence of both regional cultural diversity and firm culture diversity. By examining how these contextual factors shape organizational dynamics, we gain valuable insights into the ways in which diversity manifest and impact ESG performance.

Our findings highlight the critical importance of considering a broad spectrum of diversity factors when assessing their relationship with ESG performance. Specifically, we emphasize the need to account for the extent of gender diversity on boards, recognizing its significance as a key determinant of organizational success in the realm of ESG.

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From Dominance to Responsibility. The integration of Corporate Social Responsibility in *Chaebol's* Corporate Governance

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Abstract

This study explores the profound influence of Chaebols-large, family-owned conglomerates-on South Korea's economic transformation from an agrarian to an industrial powerhouse since the 1960s. Representing over 84% of the country's GDP while employing a mere 10% of the workforce, Chaebols such as Samsung, Hyundai, LG, and SK Group have been pivotal in South Korea's development. However, their monopolistic dominance and the controversies surrounding their practices have sparked significant public and academic scrutiny, especially regarding their Corporate Social Responsibility (CSR) initiatives. By conducting a comprehensive review of the current literature, this analysis seeks to uncover the strategic integration of CSR within Chaebol corporate governance (CG) and assesses the extent to which the Korean government encourages socially responsible business conduct. This inquiry is essential for appreciating the nuanced role of Chaebols in the socio-economic landscape of South Korea, emphasizing the intricate balance they navigate between profitability and their commitment to ethical, sustainable practices.

Key words: Chaebols, Corporate Governance (CG), Corporate Social Responsibility (CSR), South Korea, Government.

Framing of the research.

Unveiling the Economic Significance of South Korea's Chaebols

This research framework aims to dissect the intricate relationship between large family-owned conglomerates in South Korea, known as Chaebols, and their engagement in Corporate Social Responsibility (CSR) practices. These conglomerates, which emerged as pivotal to South Korea's rapid transition from an agrarian to an industrial economy since the mid-1960s, have garnered significant economic influence and political connections. Chaebols such as Samsung, Hyundai, LG, and SK Group, which collectively contribute a substantial portion of the nation's GDP yet account for a smaller share of employment, are at the center of this investigation (Moskalev & Park, 2010).

Given the concentrated control exerted by founding families over these conglomerates and the preferential treatment they have received from government policies aimed at creating globally competitive businesses, Chaebols have been subject to both national adulation for their role in economic development and criticism for perpetuating economic disparities and engaging in corrupt practices (Campbell II & Keys, 2002; Andolfo, 2018; Lee et al., 2019). This dichotomy presents a fertile ground for examining how Chaebols navigate the realm of CSR as a means of enhancing or protecting their reputation amidst challenges to their credibility and public perception.

CSR is conceptualized in this framework as corporate actions that surpass the legal or regulatory benchmarks in the market or economy, focusing on activities that contribute to the sustainable growth of societies across five dimensions: environmental, social, economic, stakeholder, and voluntariness (Kitzmueller & Shimshack, 2012; Lee et al., 2019). This definition provides a comprehensive lens through which the CSR initiatives of Chaebols can be assessed, understanding them not merely as legal obligations but as voluntary efforts towards societal well-being.

The research seeks to construct a dual-purpose framework. Firstly, it endeavors to elucidate how Chaebols incorporate CSR into their strategic planning and operational practices during the period from 60' to nowadays.

Secondly, the framework aims to explore the role of the Korean government in promoting CSR among Chaebols, investigating the presence of incentives and support mechanisms that encourage these enterprises to adopt and implement socially responsible practices.

Purpose of the paper. *The purpose of this study is to conduct a theoretical analysis of the South Korean literature and context, focusing on the historical evolution of the behaviors of Chaebols and the South Korean government concerning CG and CSR from the 1960s to the present. By tracing these developments over time, this paper aims to illuminate the historical trajectory that has led to the current state of affairs in these areas. By reviewing current literature, this research aspires to provide a nuanced understanding of CSR within the unique context of South Korean Chaebols. It intends to offer insights into how these powerful entities balance economic ambitions with social and environmental responsibilities, and the extent to which government support facilitates this process.*

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The Chaebol Matrix: Exploring the Dynamics of Ownership, Diversification, and Political Ties

In the early 1960s, South Korea was among the poorest nations globally, with a Gross National Product (GNP) per capita. This period marked South Korea's struggle with economic hardship in the aftermath of the Korean War, highlighting the daunting challenges of rebuilding a nation from the ashes of conflict (Kim, 2013). The transformative journey of South Korea from this state of impoverishment to becoming an economic powerhouse is a testament to strategic policy implementation and industrial resilience. The turning point came with the government's initiation of comprehensive economic policy reforms aimed at promoting rapid industrial growth. By encouraging private ownership and providing financial and non-financial incentives to businesses aligned with national development goals, South Korea laid the foundation for its future economic expansion.

The regulatory landscape in South Korea, particularly the limitations on commercial bank ownership, compelled Chaebols to adopt unique financial strategies. These strategies included heavy reliance on internal funding mechanisms and investments in non-bank financial institutions (Almeida et al., 2015; Kim et al., 2004; Kim et al., 2010; Kim, 2017). Additionally, Chaebols have been known to support financially struggling affiliates, prioritizing them over more solvent entities through a process known as propping or negative tunneling (Bae et al., 2008). This financial maneuvering was notably pronounced in the 1970s, as the Korean government directed substantial support to the largest Chaebol groups via state-owned banks, often at the expense of smaller and medium-sized enterprises (Haggard and Moon, 1990). These government-backed initiatives enabled Chaebols to evolve into multinational corporations with considerable global influence, making entities like Samsung and Hyundai synonymous with Korean economic development.

Chaebols are large, family-owned business conglomerates with operations spanning various industries, characterized by their strong ties with the government (Kim, 2013). An overview of prominent Chaebols includes, Samsung Group, Hyundai Group, SK Group, LG Group, Lotte Group, Hanwha Group, GS Group, CJ Group, Doosan Group, conglomerates with great diversification in their industry activities. Chaebols represent the backbone of South Korea's economic ascent to global prominence, embody a unique fusion of CG, diverse business ventures, and deep governmental ties. Central to their governance is the profound influence of founding families, who, through a complex web of cross-shareholdings, maintain control over their vast networks with minimal direct ownership. This family-centric leadership is pivotal in charting the conglomerates' strategic directions and sustaining their dominance across various sectors. Chaebols' strategic diversification into industries ranging from electronics and automotive to finance and construction underpins their resilience and capacity for innovation, enabling them to capitalize on new market opportunities.

The symbiotic relationship between chaebols and the South Korean government has been instrumental to their success, fostering an environment conducive to rapid industrial growth while shielding them from foreign competition. However, this relationship has sparked controversy, with criticisms over the chaebols' preferential treatment prompting calls for regulatory reforms to ensure a fairer business landscape. Despite such debates, the indelible mark of chaebols on South Korea's transformation into a high-tech economy is undeniable. As South Korea evolves, so does the discourse on chaebols' future, particularly regarding their governance structures and government relations. Efforts are underway to align their operations more closely with principles of CSR, addressing concerns over market competition, economic disparity, and CG. These reforms aim to temper family control, enhance transparency, and cultivate a competitive economy, ensuring chaebols continue to drive South Korea's economic narrative forward in a manner that is both ambitious and equitable.

Methodology. This study employs a theoretical methodology, navigating through the landscapes of existing literature and conceptual frameworks to carve out new understandings within Chaebols, CG, and CSR. Our approach is rooted in the critical analysis and synthesis of established knowledge, aiming to identify and bridge current situation. This process is pivotal, as it not only anchors our investigation in the rich soils of existing academic discourse but also illuminates areas ripe for exploration and development. This methodology allows for a dynamic interplay between theory and context, with the aim to contribute to the academic conversation on Chaebols, CG and CSR.

Ethics in Action: The Role of Corporate Governance and Social Responsibility in Contemporary Business Practices

The evolution of CG is a complex and multifaceted journey that has significantly evolved from its early stages to the present day. Initially, CG was narrowly focused, primarily centered on the interests of shareholders, reflecting a limited view of the corporation's purpose and the scope of its responsibilities. Magnan & Michelon (2024) describe this early period as one where the emphasis was squarely on shareholder value, aligning with the foundational principles of agency theory. This theory posits the central role of shareholders in the corporate hierarchy, emphasizing the need for oversight over managerial decisions and actions to mitigate the risks associated with the separation of ownership and control.

As the corporate landscape evolved, particularly with the transition from smaller, entrepreneurial ventures to larger, professionally managed organizations in the late 1920s and early 1930s, the scope of CG began to widen (Magnan & Michelon, 2024). This shift recognized the complexity of modern corporations and the diverse interests that they must serve beyond those of their shareholders. It marks a pivotal transition towards a more inclusive understanding of CG, acknowledging the broader societal role that corporations play.

This expanded view of CG incorporates a stakeholder-oriented model, moving away from a strict focus on shareholder interests to include a wide range of stakeholders, including employees, customers, suppliers, and the broader community (Roberts & Van den Steen, 2000; Solomon, 2020). This approach is based on the premise that corporations have a duty not only to their owners but also to the societies in which they operate, reflecting a comprehensive accountability

framework. It encompasses legal obligations, corporate regulations, and informal practices that ensure the alignment of corporate actions with the broader goal of societal well-being.

The concept of sustainability has become increasingly important in this context, responding to the demands of stakeholders for corporations to address their social and environmental impact. This has led to the inclusion of environmental, social, and governance (ESG) standards as critical components of CG, highlighting the importance of sustainable practices not only for their intrinsic value but also for their role in enhancing firm performance and long-term viability (Iansiti & Levien, 2004).

Moreover, the role of the board of directors has been a subject of significant scrutiny and evolution. Researchers like Brickley and Zimmerman (2010), and Hillman et al. (2000), have highlighted the dual functions of boards: overseeing operations and providing strategic counsel. The blend of agency theory and resource-dependence theory offers a nuanced understanding of the board's role, underscoring its centrality in shaping corporate strategy and ensuring accountability.

Magnan and Michelon (2024) identify four critical historical milestones that have shaped the trajectory of CG: the aftermath of the Great Depression and the introduction of key financial regulations in the United States, the post-World War II era in Europe, the financial scandals of the late 20th century in the UK, and the early 21st-century financial misdeeds leading to the Sarbanes-Oxley Act. As CG continues to evolve, it faces the challenge of balancing the traditional shareholder-centric model with the demands of a broader set of stakeholders, including addressing environmental and social challenges. The rise of ESG standards and the increasing focus on sustainability reflect a significant transformation in how corporations conceptualize their roles and responsibilities.

The Convergence of Corporate Governance and Social Responsibility Through CSR

Fifty years since Milton Friedman (1970) controversially claimed that corporate social responsibility was essentially a misallocation of resources, the discourse around business practices and sustainability has undergone a significant transformation. Friedman's assertion that the costs of implementing socially responsible policies were unjustifiably high and detrimental to shareholder interests has been subject to critical reassessment in recent years. Contrary to Friedman's viewpoint, Brammer and Millington (2008) argue that the narrative is more nuanced, with modern companies demonstrating that sustainable practices can coexist with, and even enhance, economic performance. These enterprises, by prioritizing the quadruple bottom line of people, planet, prosperity, and partnership, showcase the possibility of delivering high-quality performance while also fostering sustainable value creation (Martínez-Perales et al., 2018).

The introduction of the concept of sustainable development in the Brundtland Report (1987) by the World Commission on Environment and Development marked a crucial moment, that emphasized the interconnectedness of economic, environmental, and social well-being as essential components of true sustainable development.

Over time, sustainable development has evolved into the broader, more encompassing concept of sustainability, integrating environmental, economic, and social dimensions (Johnston et al., 2007; Shenhar & Dvir, 2007). The culmination of this evolution is the 2030 Agenda for Sustainable Development, adopted by the United Nations in 2015. The Agenda challenges companies to transform their supply chains, manufacturing technologies, investment approaches, consumer behaviors, and overall business models to align with the SDGs (Martens & Carvalho, 2016). This entails a significant shift in CG strategies, incorporating social and environmental considerations into decision-making processes that have traditionally prioritized economic outcomes (Thamhain, 2014).

Adopting a stakeholder-oriented approach, modern CG practices must balance economic objectives with environmental stewardship and social responsibility, embodying the triple bottom line framework proposed by Elkington and Rowlands (1999) and supported by Freeman & Dmytriiev (2017). This approach necessitates a reevaluation of corporate performance metrics to include social justice, economic prosperity, and environmental quality as key indicators of success. Practically, this shift towards sustainability in CG involves careful management of resources and outputs to minimize environmental impact, alongside implementing organizational practices that promote social well-being (Alsayegh et al., 2020). In this context, businesses are recognized not only as drivers of economic growth but also as leaders in the global transition towards sustainability, with the potential to create long-term value that benefits the environment, society, and future generations beyond mere financial gains (Sánchez, 2015). This comprehensive approach challenges the initial skepticism around the costs of sustainability, suggesting that the investments made today are crucial for securing a sustainable, prosperous future for all.

Results.

How Chaebols Are Embracing Social Accountability in Corporate Governance

The relationship between Chaebols and CSR offers a distinctive lens through which to examine CG and ethical business practices within these powerful conglomerates. Chaebols as key players in South Korea's extend their influence from economic realms into socio-political spheres, impacting societal and environmental well-being (Ryu & Chae, 2022). The scrutiny of Chaebols in relation to CSR delves into their contribution to social obligations, ethical considerations, and the broader implications of corporate dominance (Ben-Shahar et al., 2023; Lee et al., 2019). Chaebols are closely intertwined with South Korea's economic narrative, emerging from government strategies to foster industrialization through substantial financial support and policy advantages. Despite their significant contributions to transforming South Korea into a global economic powerhouse, their expansion has been shadowed by controversies including monopolistic

practices, nepotism, and a lack of transparency (Kim, 2013). The concentration of power within family-owned structures has sparked debates around economic inequality and corporate ethics.

CSR, broadly defined as a self-regulating model enabling companies to be socially accountable, encompasses a commitment to contribute positively to society beyond legal obligations. It includes a range of activities from environmental sustainability efforts to ethical labor practices, with a growing global emphasis on transparency and ethical accountability (Crane et al., 2008; Lockett et al., 2006; Ryu & Chae, 2022). In the South Korean context, Chaebols have traditionally prioritized economic growth, sometimes overlooking social and environmental responsibilities. However, recent shifts towards embracing CSR reflect global trends and a desire to enhance their public image (Lee et al., 2019; Choi & Hong, 2022). Notable conglomerates like Samsung, Hyundai, LG, and SK Group have embarked on various CSR initiatives, reflecting an evolving approach towards integrating social value into their business models. Samsung, for example, has invested in education and environmental sustainability, attempting to create social value despite facing criticism over labor practices and environmental impacts (Chang et al., 2019). Hyundai's community engagement efforts span global health and educational programs, though they face critiques over their promotional nature (Rhee et al., 2017; Ryu & Chae, 2021). LG's CSR initiatives aim to enhance quality of life, with programs addressing healthcare, education, and environmental stewardship (Jun & Kim, 2021; LG, 2023). SK Group's dedication to creating social value encompasses a wide range of sectors, emphasizing a double bottom line philosophy that seeks economic and social value growth (SK, 2023).

Despite these efforts, the authenticity and effectiveness of Chaebols' CSR practices remain contentious. Critiques often center on the superficial nature of some initiatives, perceived more as image management tools than genuine commitments to social responsibility. In fact, the centralization of control within Chaebol families raises concerns about transparency, accountability, and potential conflicts of interest, highlighting ethical dilemmas in balancing profit-making with societal responsibilities (Campbell II & Keys, 2002; Krueger & Yoo, 2002).

Incentives and Innovations: The Role of Government Support in Shaping Chaebol CSR Activities

The interplay between Chaebols and CSR within South Korea presents a dynamic and intricate picture of evolving business ethics and governance. This evolution, influenced by both global trends and domestic pressures, showcases a gradual but significant shift toward embedding social responsibility into the fabric of corporate operations. However, challenges persist, particularly concerning the authenticity and depth of CSR initiatives, which often struggle to transcend their image as mere public relations strategies to genuinely integrate into the core ethos of conglomerates (Ryu & Chae, 2021).

Chaebols' CSR efforts have historically focused on philanthropy and corporate community relations, encompassing charitable donations and volunteerism led by CEOs and employees. However, the timing of these donations, often following legal convictions of owners for various offenses, has raised questions about the motivations behind such philanthropy. These actions have sparked skepticism, with CSR activities seen as attempts to divert attention from misdemeanors and rehabilitate corporate images rather than genuine efforts to contribute positively to society (Choi & Aguilera, 2009).

Despite these criticisms, there has been a notable push from both the government and the corporations themselves towards more integrated and strategic CSR approaches. Following the Asian financial crisis, the Korean government has played a fundamental role in promoting CSR among major corporations through legislation, guidelines, and initiatives aimed at fostering accountability, ethical conduct, and sustainable development. This includes the formation of committees and institutions dedicated to sustainability management, such as the Business Institute for Sustainable Development, and initiatives to bridge the gap between large corporations and small to medium-sized enterprises (SMEs) (Nam, 2011).

Moreover, the government's efforts have led to the establishment of the Korea Institute of Corporate Governance and Sustainability (KCGS), signifying a deepened commitment to integrating sustainability into corporate governance. KCGS plays a central role in guiding companies toward sustainable growth by evaluating their governance, environmental, and social practices (Choi et al., 2024).

Despite these advances, Chaebols face ongoing scrutiny over their CSR practices. The central critique revolves around the perception that CSR remains peripheral to their primary business operations, lacking integration into their foundational beliefs and strategic planning. This situation highlights a broader issue within the Korean corporate sector, where economic and social disparities persist, and stakeholder concerns are often sidelined in favor of economic growth (Nam, 2011).

Research limitations. The trajectory of CSR in South Korea, especially among Chaebols, reflects a complex blend of progress and ongoing challenges. While there has been a commendable increase in the diversity and number of initiatives, questions about the sincerity and impact of these efforts persist. The establishment and evolution of entities like KCGS underscore a growing recognition of the importance of sustainable and ethical business practices. Yet, the journey towards fully integrating CSR into the core of corporate identity and operations remains ongoing. As South Korea continues to navigate this landscape, the collective efforts of the government, corporations, and civil society will be crucial in shaping a more responsible and sustainable corporate sector.

Managerial implications. For managers navigating the intricate dynamics between Chaebols and Corporate Social Responsibility (CSR) within South Korea, several strategic implications arise, emphasizing the need for a nuanced approach to CSR. Firstly, managers are encouraged to recognize CSR as a strategic asset beyond a mere public relations tool, aligning initiatives with the company's core mission and competencies to address pertinent societal and

environmental challenges, thereby enhancing long-term sustainability, stakeholder trust, and corporate reputation. Secondly, given the skepticism surrounding CSR motivations, particularly those coinciding with legal issues, there is a critical need for transparency and accountability in CSR reporting and communication. Articulating clear objectives, activities, and impacts can significantly mitigate cynicism, fostering genuine public trust. Thirdly, proactive engagement with regulatory frameworks and institutions like the Korea Institute of Corporate Governance and Sustainability (KCGS) underscores the importance of aligning business practices with national sustainability goals, adopting and reporting on Environmental, Social, and Governance (ESG) standards to meet corporate success criteria. Lastly, the integration of CSR into strategic planning and operational processes is paramount. This approach not only addresses broader socio-economic disparities and stakeholder concerns but also aligns the company's economic growth objectives with societal well-being, ensuring CSR becomes a central element of business development and innovation.

Originality of the paper. This study offers an original exploration into the dynamic interplay between South Korea's Chaebols and their CSR engagements, highlighting the evolution of business practices. By focusing on the transformational role of Chaebols from the 1960s to the present, this research delves into the complexities of their economic dominance and societal impact within South Korea's rapid industrialization context. The investigation into how Chaebols integrate CSR into their strategic ethos and the government's role in promoting such practices provides fresh insights into the balancing act between economic growth and social responsibility and offers a distinct perspective on the intertwining of corporate ethics, governance, and societal well-being in a uniquely South Korean setting. This endeavor not only enriches the academic discourse on CSR but also contributes to understanding the nuanced relationship between corporate power, governmental influence, and societal expectations in the modern global economy.

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Sustainability Alignment in Cross-Border Collaborations: Dynamics, Challenges and Limits

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Abstract

Today, achieving sustainability alignment between firms across developed and underdeveloped economies is essential for fostering fair and resilient partnerships amidst growing global economic and industrial interconnectedness (Bakkari et al., 2022; Kuznets, 1968). Collaboration between business realities of varying economic statuses is vital across sectors to tackle urgent sustainability issues (Berkhout et al., 2010; Asgary & Zahedi, 2009), and failure to align sustainability goals risks neglecting local needs, leading to social unrest (UNGC, 2020). This ongoing research explores the complexities of achieving sustainability alignment in cross-border collaborations, focusing on supply chains and mergers and acquisitions (M&A). Specifically, it examines how sustainability accounting influences alignment between large enterprises in developed economies and counterparts in underdeveloped regions, using a mixed-methods approach: quantitative analysis of financial and sustainability data is complemented by qualitative insights from interviews and surveys with stakeholders, aiming to capture diverse perspectives. The findings will contribute to theoretical understanding and managerial practice by highlighting the importance of integrating sustainability into supply chain strategies and M&A decision-making to promote sustainable alignment and well-being for individuals and society. However, limitations exist, primarily in generalizing findings beyond the studied regions and acknowledging inherent biases and data limitations in the research approach.

Key words: sustainability alignment; cross-border collaborations; M&A; supply-chain; underdeveloped countries.

Framing of the research. In the contemporary global landscape, the imperative of achieving sustainability alignment among firms operating across developed and underdeveloped economies has emerged as a fundamental prerequisite for fostering equitable and resilient partnerships amidst escalating interconnectivity (Demstus & Landrum, 2024; Burnes & James, 1995). This urgency underscores the critical necessity for collaborative endeavors between entities of divergent economic statuses to address pressing sustainability challenges across various sectors (Bakkari et al., 2022; Wieczorek, 2018). For example, within the textile industry, multinational corporations headquartered in developed nations frequently collaborate with manufacturers in underdeveloped economies for sourcing raw materials or outsourcing production processes (Handfield et al., 2005; Kuznets, 1968). In such collaborations, attaining sustainability alignment is paramount to ensure adherence to fair labor practices, mitigate environmental impact, and foster community development within regions where manufacturing activities are concentrated (Bakkari et al., 2022; Beamon, 1999). The absence of shared sustainability objectives and strategies poses a significant risk of perpetuating exploitative labor practices or exacerbating environmental degradation, thus compromising the resilience of the entire supply chain (Capasso & Pellegrino, 2016; Handfield et al., 2005). Similarly, in the renewable energy sector, partnerships between established energy firms from developed economies and emerging enterprises in underdeveloped nations play a pivotal role in extending access to clean energy sources (Berkhout et al., 2010; Seuring & Müller, 2008). Here, sustainability alignment assumes utmost importance to ensure that investments contribute to local economic development, empower communities, and mitigate climate change impacts (Capasso & Pellegrino, 2016; Seuring & Müller, 2008).

This imperative for sustainability alignment is further underscored by the discourse within the sustainability transition literature, which represents a rapidly growing and influential field of research (Chappin & Ligtvoet, 2014; Markard et al., 2012). This literature builds on the argument that addressing interconnected, complex global challenges, such as climate change and social inequalities, necessitates a radical transformation in the fundamental systems that provide for societal needs (Schot & Kanger, 2016). This transformation is conceptualized as a “transition”, and the systems

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undergoing change are understood as socio-technical in nature, encompassing technology, institutions, economy, and socio-cultural aspects (Grin et al., 2010; Elzen et al., 2010; Wieczorek & Berkhout, 2009).

Given its potential to address sustainability challenges, the concept of socio-technical transition has gained traction in policy circles, where policymakers are increasingly interested in fostering transitions rather than relying solely on incremental, technical changes or end-of-pipe solutions (Hunter & De Giacomo, 2023; Wieczorek & Elzen, 2005). Various models developed within this field aim to elucidate the dynamics of transition and offer guidance on effective governance strategies. One such foundational model is the Multilevel Perspective on system innovation (MLP) (Markard et al., 2012; Geels, 2002). The MLP posits that system transformation occurs within the interplay of three levels:

- niches;
- regimes;
- landscapes.

The central level comprises socio-technical regimes, which are sets of rules and routines defining the dominant “way of doing things” (Geels, 2002). These regimes are characterized by path-dependence, stability, and often being locked-in, which impedes radical change. The stability of regimes is upheld by the socio-technical landscape, an exogenous environment beyond direct actor influence, encompassing processes like urbanization, demographic changes, wars, or crises, which can pressure regimes and render them vulnerable to radical changes (Geels & Schot, 2007; Geels, 2002).

In both the concept of transition and the imperative for sustainability alignment, there is a fundamental recognition of the need for transformative change to address pressing societal challenges (Wilkinson & Coles, 2024). This parallel underscores the interconnectedness of global issues and the necessity for coordinated action across diverse contexts. The concept of transition, as elucidated in the reference literature, emphasizes the need for systemic transformation to achieve sustainability goals (Chappin & Ligtoet, 2014; Markard et al., 2012). Similarly, sustainability alignment in partnerships between firms from developed and underdeveloped economies entails a concerted effort to ensure that investments and practices contribute positively to local development, community empowerment, and environmental stewardship (Schilling & Seuring, 2024; Capasso & Pellegrino, 2016; Seuring & Müller, 2008).

Moreover, just as the transition literature highlights the role of socio-technical regimes and niches in driving systemic change (Grin et al., 2010), sustainability alignment recognizes the importance of establishing common goals and strategies within partnerships to overcome entrenched practices and foster innovation (Bakkari et al., 2022; Wieczorek, 2018). Some studies have further emphasized the significance of proactive governance and strategic management in both transitions and sustainability alignment efforts (Vargas-Hernandez, 2018; Fischer & Newig, 2016). For instance, Strategic Niche Management (SNM) has been identified as a key approach for guiding the process of niche formation and facilitating the emergence of sustainable innovations within transitions (Schot and Geels, 2008; Raven, 2005; Kemp et al., 1998). Similarly, effective governance mechanisms and collaborative decision-making processes are essential for ensuring sustainability alignment in partnerships, as they enable stakeholders to navigate complexities, mitigate risks, and capitalize on opportunities for positive change (Berkhout et al., 2010; Handfield et al., 2005). In the context of supply chain management (SCM) and mergers and acquisitions (M&A) literature, the parallels with sustainability transitions and alignment are particularly noteworthy. These, in fact, often involve complex interactions across socio-economic and environmental dimensions, echoing the systemic changes advocated in the transition literature (Bottazzi, 2019).

Within the SCM literature, there is increasing recognition of the importance of sustainability considerations in shaping supply chain strategies (Handfield et al., 2005). Similarly, sustainability transition literature emphasizes the need for systemic changes to address global challenges, such as climate change and social inequalities (Markard et al., 2012). This convergence underscores the shared imperative of aligning supply chain practices with sustainability goals to mitigate environmental impact, ensure fair labor practices, and promote community development (Bakkari et al., 2022; Bozeman & Griffith, 2004). On the other hand, in the realm of M&A activities between firms from different economic contexts, sustainability considerations are becoming increasingly prominent. Studies in the M&A literature highlight the potential of mergers and acquisitions to drive sustainability outcomes, such as improved environmental performance and stakeholder engagement (Capasso & Pellegrino, 2016). This aligns with the sustainability alignment discourse, which emphasizes the importance of shared green objectives and strategies in fostering equitable and resilient partnerships (Wieczorek, 2018).

Moreover, sustainable disclosure and reporting practices play a crucial role in both SCM and M&A contexts (Feng et al., 2023). In fact, firms engaging in cross-border collaborations often face pressures to disclose their environmental, social, and governance (ESG) performance to stakeholders (Global Reporting Initiative, 2020; Davis & Boulet, 2016). Similarly, sustainability transition literature emphasizes the importance of transparent reporting mechanisms to track progress and hold stakeholders accountable for sustainability commitments (Chappin & Ligtoet, 2014). Recent studies have highlighted the strategic significance of sustainable disclosure and reporting practices in enhancing the credibility and trustworthiness of firms operating in diverse economic contexts (Berkhout et al., 2010). By providing transparent and standardized information about their sustainability performance, firms can demonstrate their commitment to responsible business practices and build trust with stakeholders. Furthermore, sustainable disclosure practices serve as a crucial mechanism for facilitating sustainability alignment among firms engaged in collaborations spanning developed and underdeveloped economies, consequently fostering improved performance at both the organizational and macroeconomic levels. In fact, these practices have the potential to catalyze positive outcomes for economies in underdeveloped countries (Berkhout et al., 2010), and also contribute to the establishment of robust governance mechanisms and the promotion of responsible business conduct within these economies (Bakkari et al., 2022). As firms operating in underdeveloped countries align their practices with sustainability objectives, they can mitigate

environmental risks, promote social inclusion, and stimulate economic growth in local communities (Handfield et al., 2005). This alignment not only enhances the resilience and competitiveness of individual firms but also contributes to the broader development agenda of these economies, fostering sustainable and inclusive economic progress (Io Conte & Sancetta, 2024; Dutta et al., 2012).

However, unlike their counterparts in developed economies, these firms may encounter barriers such as limited resources, capacity, and institutional frameworks for reporting sustainable activities (Bakkari et al., 2022). Moreover, the lack of established reporting mechanisms may result in inconsistencies and discrepancies in the disclosure of sustainable activities, limiting transparency and comparability across firms and industries (Capasso & Pellegrino, 2016). Without clear guidelines and reporting structures, firms in underdeveloped economies may struggle to communicate their sustainability efforts to stakeholders, hindering their ability to build trust and credibility in global markets (Mc Loughlin et al., 2023). In light of these challenges, there is a pressing need for concerted efforts to address the gaps in sustainable disclosure frameworks and support capacity-building initiatives (Norton et al., 2015). In fact, as stated by Parisi, 2013, by providing technical assistance, training programs, and resources tailored to the specific needs of firm, stakeholders can empower these entities to adopt sustainable disclosure practices effectively (Parisi, 2013).

Purpose of the paper. Our ongoing research aims to delve into the challenges associated with attaining sustainability alignment within the context of cross-border business collaborations. Specifically, we concentrate our focus on the interplay of supply chain interactions and merger and acquisition (M&A) activities. Moreover, we endeavor to analyze the impact of sustainability accounting practices on the process of aligning sustainability objectives and strategies between major corporations situated in developed nations, such as the United Kingdom, and their counterparts in underdeveloped economies, represented by countries like Pakistan, Bangladesh, and Sri Lanka. These partnerships, in fact, offer opportunities for knowledge transfer, capacity building, and access to resources and expertise that can enable firms to strengthen their sustainability initiatives and reporting capabilities (Schilling & Seuring, 2024). Also, participation in supply chains managed by firms from developed economies provides firms in underdeveloped ones with exposure to international markets and compliance requirements related to sustainability (Seuring & Muller, 2008). This exposure prompts firms to align their operations with global sustainability standards and expectations, driving improvements in environmental stewardship, social responsibility, and corporate governance practices. Besides, firms in underdeveloped economies can enhance their competitiveness, attract investment, and build trust with consumers, investors, and other stakeholders.

Our research also aims to investigate how green reporting practices contribute not only to the alignment of sustainability goals but also to broader positive effects on resilience, society, economy, and governance mechanisms. In fact, sustainable reporting alignment encompasses more than just the convergence of sustainability objectives; it extends to fostering resilience in the face of environmental and social challenges, enhancing societal well-being through responsible business conduct, stimulating economic development through sustainable practices, and improving governance mechanisms (Schilling & Seuring, 2024). The positive effects of sustainability alignment facilitated by sustainability accounting practices could extend to enhancing better work conditions, representation, and rights for workers. This alignment often entails commitments to uphold international labor standards set forth by organizations like the International Labour Organization (ILO), along with the implementation of policies and practices aimed at empowering workers and facilitating their participation in decision-making processes (Shamim et al., 2017). Moreover, sustainability alignment may prompt increased investment in training and skills development programs, providing workers with opportunities for career advancement and personal growth. Through these efforts, firms prioritize the well-being and rights of their workforce, fostering a positive work environment conducive to heightened productivity, innovation, and employee satisfaction.

In light of this, we can express our first Research Question as follows:

- RQ1: How do cross-border collaborations influence sustainability alignment between large firms in developed economies and their counterparts in underdeveloped ones, and what are the mechanisms through which this alignment contributes to the achievement of sustainable development goals?

For this research question, we propose a quantitative analysis methodology. On the other side, the second Research Question of our study can be express as follows:

- RQ2: How do sustainability accounting practices facilitate sustainability alignment, and to what extent do these practices contribute to enhanced environmental, social, and economic outcomes, including impacts on society?

To address this question comprehensively, a mixed-methods approach will be employed. In developed economies, large enterprises often prioritize sustainability reporting due to regulatory requirements, stakeholder expectations, and reputational concerns. However, in underdeveloped regions, factors such as limited resources, lack of awareness, and institutional barriers may hinder the adoption of these practices. Nonetheless, there are several elements that can incentivize these firms to follow the reporting practices of their counterparts. These could include access to international markets, attracting foreign investment, enhancing credibility and trust among stakeholders, and improving competitiveness in a globalized economy.

Methodology. Our research adopts a dual-methodological approach to comprehensively investigate the dynamics of sustainability alignment within cross-border business collaborations.

- Firstly, a quantitative analysis methodology is proposed to delve into the influence of cross-border collaborations on sustainability alignment between large firms and their counterparts in underdeveloped regions. This part will involve the collection and analysis of numerical data, also using a structured questionnaire based on relevant literature and theoretical frameworks. The questionnaire will encompass key variables such as the nature and extent of cross-border collaborations, sustainability objectives and strategies, and perceived outcomes in terms of sustainable development goals. Sampling techniques will be employed to select a representative sample of large firms from developed nations, such as the United Kingdom, and underdeveloped regions, including Pakistan, Bangladesh, and Sri Lanka. The sample will be drawn from diverse industry sectors to ensure a comprehensive understanding of cross-border collaborations and sustainability practices across different contexts. To perform data analysis, statistical software packages such as SPSS or STATA will be utilized. Also, descriptive statistics will be used to summarize the characteristics of cross-border collaborations, while inferential statistics, including regression analysis, will be employed to examine the relationships between variables and test hypotheses;
- in addition to quantitative analysis, a mixed-methods approach will be adopted to explore the role of sustainability accounting practices in facilitating sustainability alignment and its broader impacts on environmental, social, and economic outcomes. Qualitative data will be collected through semi-structured interviews with key stakeholders, including corporate executives, sustainability practitioners, and industry experts. Furthermore, thematic analysis could be employed to analyze qualitative data, allowing for the identification of recurring patterns, themes, and relationships. The integration of different kinds of findings (qualitative and quantitative) will enable a comprehensive understanding of the dynamics underlying sustainability alignment and its implications for sustainable development.

At present, the research is in the data collection stage, wherein efforts are focused on gathering quantitative and qualitative data from relevant stakeholders and sources. In contemplating the future evolution of this methodology, it's essential to consider the increasing role of artificial intelligence (AI) and autolearning algorithms in data analysis and interpretation. In fact, these advanced computational tools offer exciting opportunities for refining both the quantitative analysis and mixed-methods components of our research approach. Incorporating machine learning algorithms like Random Forest and Gradient Boosting Machines into quantitative analysis can enhance traditional statistical methods, revealing intricate patterns and relationships within extensive datasets. For instance, employing Support Vector Machines could elucidate predictive factors influencing sustainability outcomes, while Recurrent Neural Networks might reveal temporal trends in collaborations effectiveness. Furthermore, these advanced algorithms enable more precise forecasting of future sustainability trends, empowering decision-makers to strategize effectively for long-term sustainability objectives.

However, it's crucial to acknowledge the limitations of AI and autolearning algorithms in the context of our research. These technologies rely heavily on the quality and representativeness of the underlying data, which may vary significantly between countries due to differences in regulatory frameworks, cultural norms, and reporting standards (Io Conte et al., 2023). As a result, AI-driven analyses may encounter challenges in accurately capturing and comparing sustainability alignment efforts across diverse contexts, potentially leading to biased or misleading conclusions. Additionally, the interpretability of AI-generated insights poses a challenge, as complex algorithms may produce results that are difficult to explain or validate within the context of sustainability reporting. Sustainable reporting practices, in fact, may be influenced by cultural attitudes towards environmental stewardship, social responsibility, and corporate governance, making it challenging to generalize findings across different countries or regions.

Results. As stated before, our ongoing research endeavors to explore dynamics, challenges and limits inherent in achieving sustainability alignment within cross-border business collaborations. Specifically, our focus lies in examining the interplay between supply chain interactions and merger and acquisition (M&A) activities in fostering the already mentioned alignment. Based on existing literature on the theme, and considering the ongoing nature of our work, we can here outline possible and expected results. In particular, the combination of quantitative analysis and qualitative exploration could uncover several key findings:

- our research could unveil a robust correlation between cross-border collaborations and sustainability alignment among large firms, spanning developed and underdeveloped regions. Through quantitative analysis, we could identify concrete mechanisms by which these collaborations foster sustainability initiatives. For instance, we could find that cross-border partnerships facilitate knowledge transfer, enabling firms in underdeveloped regions to adopt best practices from their counterparts in developed nations. Additionally, we could observe capacity-building initiatives and increased access to resources and expertise, empowering firms to enhance their sustainability practices. These potential findings would underscore the critical role of international partnerships in advancing sustainability goals and improving corporate governance practices on a global scale. Regarding supply-chain dynamics, our research may reveal distinct patterns in these interactions between developed and underdeveloped countries. Quantitative analysis could also identify key drivers and determinants of supply chain integration, such as resource availability, technological capabilities, and market demand. Additionally, qualitative insights may provide a deeper understanding of the challenges and opportunities associated with cross-border collaborations. Regarding M&A operations, quantitative analysis could quantify the frequency and magnitude of M&A transactions within and between regions, while qualitative insights may shed light on the motivations and strategies driving these transactions;
- our research also aims to uncover the significant impact of sustainability accounting practices on sustainability alignment. Through a mixed-methods approach, we could quantitatively demonstrate the contributions of these

practices to enhanced environmental, social, and economic outcomes. For instance, we could find that firms implementing robust sustainability reporting frameworks experience reduced environmental footprints, improved social welfare for employees and communities, and enhanced economic resilience. Qualitative insights could also provide understandings of the challenges and opportunities associated with the adoption of sustainability reporting practices across different regions, shedding light on strategies for overcoming barriers and maximizing benefits;

- we anticipate identifying notable variations in sustainability reporting practices across different countries, shaped by regulatory frameworks, cultural norms, and reporting standards. For example, while large enterprises in developed economies could prioritize sustainability reporting to meet stringent regulatory requirements and stakeholder expectations, firms in underdeveloped regions could face challenges such as limited resources and institutional barriers. Nonetheless, we could find that various incentives, such as access to international markets and foreign investment, motivate firms in underdeveloped countries to align their reporting practices with global standards. These potential findings would highlight the dynamic interplay between regulatory contexts, market dynamics, and corporate behavior in shaping sustainability reporting practices on a global scale;
- at last, we aim to develop a comprehensive model to understand the relationships between supply chains, M&A activities, and sustainability alignment across different country contexts. This model could incorporate quantitative variables such as supply chain integration indices, M&A deal volumes, and sustainability performance metrics, as well as qualitative factors such as regulatory environments, cultural norms, and institutional frameworks. By elucidating the interplay between these variables, our model could provide valuable insights for policymakers and practitioners, seeking to promote sustainable development through different kind of firms and economies collaboration.

Research limitations. Our research, embedded within a partnership between universities in Italy and the UK, holds promise in offering valuable insights to the academic discourse. Nevertheless, it's crucial to acknowledge several limitations inherent in our study. Firstly, our reliance on self-reported data from surveys and interviews may introduce biases, such as social desirability effects, potentially leading to inflated estimates of sustainability adherence. Additionally, the sample size and composition of our study may not fully capture the diversity of firms and stakeholders engaged in cross-border collaborations, thus limiting the generalizability of our findings. Secondly, the intricate nature of such collaborations and sustainability initiatives poses challenges in isolating causal relationships and identifying contextual factors such as cultural disparities and regulatory environments. Moreover, the evolving landscape of sustainability standards and regulations may impact the relevance of our findings over time (Taylor et al., 2018). To address these limitations, it is imperative to conduct a comprehensive study to delineate the characteristics and classifications of developed and underdeveloped countries. This will involve leveraging not only existing literature but also reports from international organizations. Additionally, obtaining open-access information about supply chains and M&A activities in specific sectors is essential. At last, it is essential to refine the definition of specific types of firms or characteristics and to enhance our methodologies. This includes ongoing efforts to gather data and refine our analytical approaches to ensure robustness and accuracy in our findings; it's worth noting that our methodologies are continuously evolving and will soon undergo enhancements to ensure greater precision and reliability. It is also important to highlight our intention to provide a clearer definition of the term "collaboration". While this term has been utilized in existing literature about sustainable transition and alignment, we aim to refine its boundaries and parameters for better clarity and precision.

Managerial implications. This ongoing research carries significant implications for managers and decision-makers involved in cross-border business collaborations and sustainability initiatives. Firstly, expected results could underscore the importance of fostering strategic partnerships and knowledge-sharing networks across geographical boundaries. Managers, in fact, can leverage cross-border collaborations to enhance sustainability alignment by facilitating knowledge transfer, capacity building, and resource sharing among partner firms. For example, establishing mentorship programs or collaborative workshops can facilitate the exchange of best practices and innovative solutions for addressing sustainability challenges. Secondly, our research highlights the pivotal role of sustainability accounting practices in driving positive outcomes for both firms and society at large. Managers in underdeveloped countries are then encouraged to prioritize the adoption of robust sustainability reporting frameworks and transparent accounting practices to enhance their credibility, accountability, and stakeholder trust. Identifying incentives and leveraging international partnerships, they can overcome challenges and align their reporting practices with global standards.

Originality of the paper. Our work contributes to the existing literature on sustainability alignment within cross-border collaborations by offering novel insights into the interplay between supply chain interactions, merger and acquisition (M&A) activities, and sustainability accounting practices. While previous studies have examined these topics individually, our paper integrates these diverse strands of research to provide a comprehensive understanding of the mechanisms driving sustainability initiatives in a global context. Our study extends beyond traditional quantitative analyses by incorporating qualitative insights and mixed-methods approaches to uncover the different dynamics of sustainability alignment. Additionally, our study addresses the gap in the literature regarding variations in sustainability reporting practices across different countries and regions, offering valuable insights into the contextual factors shaping corporate sustainability practices in different economies. Overall, the originality of our paper lies in its interdisciplinary approach, novel conceptual framework, and comprehensive analysis of the interrelationships in cross-border partnerships.

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Sustainable and innovative practices in foodstuffs domain: the impact on consumer's perceptions and dispositions

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Abstract

The goal of this study is to examine how the implementation of sustainable practices (such as organic production) and innovative technologies (like blockchain) in agri-food products can influence consumers' perceptions of product authenticity. This may elevate their willingness to pay a premium for products embodying these characteristics, owing to the perceived utility of blockchain technology. Results from 606 Italian participants suggested that a greater perceived product authenticity positively impacts consumer willingness to pay a premium price for an organic product through a utility's perception of blockchain technology-based mechanism. More importantly, the results suggest that this effect is stronger in the case of utilitarian (vs. hedonistic) foodstuffs.

Keywords: Product authenticity; Willingness to pay; Blockchain technology; Organic production; Olive oil; Wine.

Framing of the research. The rise in eco-consciousness among consumers, spurred by growing pollution concerns (Konuk, 2019; Teoh and Gaur, 2019), has compelled businesses to pivot towards sustainable practices and products, such as organic food. This shift isn't just a response to environmental pressures but also a strategic orientation to stay competitive globally and cater to evolving consumer preferences. Today's consumers aren't just mindful of the environment but also socially aware, understanding the broader impacts of their choices (Joshi and Rahman, 2016). This awareness drives them towards sustainable purchasing, as they recognize the drawbacks of non-eco-friendly options (Dagher and Itani, 2014). Consequently, there has been a surge in demand for organic food (Eyinade et al., 2021), valued for its perceived health benefits, environmental friendliness, and ethical treatment of animals (Dangi et al., 2020; Janssen, 2018). Moreover, consumers are drawn to its sustainable, authentic, and natural attributes (Mazzacano D'Amato and Falzon, 2015), often seeking not just health benefits but also pleasure and satisfaction (Brantsæter et al., 2017).

From this perspective, the agri-food sector has undergone significant changes in recent years, driven by a growing awareness of the environmental and social impacts of food production (Sala et al., 2017). As a result, many companies are moving towards more sustainable practices, such as organic production, in order to meet the increasingly eco-friendly consumer needs. In parallel, the integration of blockchain technology in the agri-food industry is emerging as a powerful solution to ensure product traceability and authenticity throughout the entire supply chain (Marozzo et al., 2022). This technology offers the possibility to safely and transparently record all stages of production and distribution, thus ensuring the genuineness and origin of the products (Menon and Jain, 2021).

In the Italian context, olive oil and wine are among the main products embracing these changes. For example, organic olive growing ranks as the third largest crop in Italy, covering 242,708 hectares in 2019, which accounts for 12% of all Italian organic SAU¹ - equal to 1,993,263 hectares. From 2010 to 2019, the organic cultivation areas dedicated to olive oil have doubled. According to a recent report of the Central Inspectorate for Quality Protection and Fraud Prevention of Agri-Food Products (ICQRF, 2024), the stocks of organic oil compared to 2023 show a slight increase of +7.6%. The extra virgin olive oil from organic farming counts (as of 29 February 2024) 41,775 tons in stock. The regions storing the largest quantities are Puglia (41.8%), Tuscany (13.1%), Sicily (13.1%), and Calabria (11.2%). Regarding wine, Del Bello (2021) noted that the organic wine vineyard in Italy exceeds 125 thousand hectares, with 81% having completed the conversion period and 19% certified as in conversion. In 2021, the consumer market value for organic wine products

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¹ The "Superficie Agricola Utilizzata" (SAU) represents the area of agricultural holdings occupied by arable land, kitchen gardens, arboretums and permanent crops, meadows and pastures.

increased by 6.5% compared to 2020, reaching 45.2 million euros at the end of 2021. This confirms the increasing trend observed in the last quinquennium, with a cumulative growth of +254.2% (Del Bello, 2021).

Innovative practices have also been adopted. For example, in 2023, FederItaly² launched the “FederItaly 100% Made in Italy” collective brand, which, through an innovative validation system, promotes and supports 100% Italian products³. This mark of origin is distinguished from the simple “Made in Italy” by requiring extensive documentary and on-site checks, including, a company audit to check that the entire production process complies with the relevant rules and the product specification. The innovation lies in the verification process and brand authenticity, using a blockchain technology platform to store all the information related to the product and the company, as well as the main stages of the certification process. This makes the counterfeiting of the product impossible, as blockchain technology enables the verification of the mark’s validity by scanning a QRcode linked to this innovative platform, ensuring the purchaser of the product’s authenticity. This innovation has also reached the olive growing sector, where several companies and consortia have adopted blockchain technology to certify extra virgin olive oil. For the first time, blockchain technology has been used to certify the extra virgin olive oil’s 100% Made in Italy origin, genuineness, and authenticity. In the same direction, the wine sector has recently introduced blockchain technology to ensure transparency and traceability, promote sustainability, and enhance the Made in Italy brand and culture (e.g., Wine Blockchain EY). Therefore, both the olive and wine sectors seem to be ideal contexts for exploring and investigating consumer behavior towards these growing trends.

Purpose of the paper. This research aims to demonstrate how new sustainable (e.g., organic production) and innovative (e.g., blockchain technology) practices applied to agri-food products can influence the consumers’ perception of product authenticity and, consequently, increase their willingness to pay a premium price for the purchase of products with these features, thanks to the perceived level of utility towards blockchain technology.

According to Wertenbroch and Skiera (2002), the willingness to pay a premium price relates to the maximum price a consumer will spontaneously pay for a product or service. Homburg et al. (2005) describe it as an indication of the value that an individual assigns to the consumption experience in monetary units. A product justifies a premium price when consumers are willing to pay more for it than for a similar competitive product (Shimp et al., 1993). Several studies suggest that consumers’ willingness to pay a premium price to purchase food products may be linked to perceived product attributes and values, such as food safety (e.g., Angulo et al., 2005), tastiness (e.g., Krystallis and Chryssohoidis, 2005), healthfulness (e.g., Hartmann et al., 2018), and authenticity (Marozzo et al., 2022). According to Gutman (1982), consumers buy products that can lead to desired consequences, such as product value perceptions. Thus, the willingness to pay a premium price generally reflects perceived product values and attributes and is likely driven by perceived product authenticity. Building on the signaling theory (Spence, 1974), which addresses market information asymmetry (Connelly et al., 2011), this study argues that information asymmetry leads to customer uncertainty about the quality of a product. Previous research suggests the use of proper signals, that is “an action that the seller can take to convey information credibly about unobservable product quality to the buyer” (Rao et al., 1999, p. 259), to reduce customer’s uncertainty. Therefore, grounded in signaling theory, this study identifies appropriate signals (i.e., organic production and the application of blockchain technology) that enhance the perceived product authenticity. More importantly, as the signaling theory emphasizes the credibility of signals, suggesting that effective signals work only to the extent that customers perceive them as credible (Boulding and Kirmani, 1993), we build on the trust-transfer theory (Doney and Cannon, 1997) and maintain that the credibility of authenticity signals is linked to the consumer utility’s perception of blockchain technology. Thus, it is postulated that:

H₁: The perceived utility of blockchain technology mediates the effect of perceived product authenticity on consumers’ willingness to pay a premium price for organic products.

Furthermore, we proposed that the type of product moderates the relationship between the perceived product authenticity and consumers’ willingness to pay a premium price for organic products, via the perceived utility of blockchain technology mechanism, by distinguishing between utilitarian vs. hedonistic food. According to previous studies (e.g., Maehle et al., 2015; Nardi et al., 2020), foodstuffs with a utilitarian character prioritize nutrition as their primary characteristic (e.g., milk, rice, and olive oil); while hedonic foodstuffs emphasize emotional aspects (like flavor satisfaction) as their main attribute (e.g., sweets and salty processed food, and wine). As shown by previous research (e.g., Madzharov, et al., 2016) when choosing hedonic foodstuffs, consumers decrease their self-control over nutritional aspects. Therefore, building upon the risk perception theory (Slovic, 1987) which refers to a person’s view of the inherent risk in a situation, and the perceptions of food safety risk (Tonsor et al., 2009) reflecting an individual’s belief about the level of health risk, we assert that, in the context of utilitarian products (like olive oil - where nutritional aspects are relevant) product authenticity can be perceived as a key indicator of quality and safety. This is because, for utilitarian products that are often used as part of a daily routine or that have health implications, the guarantee of authenticity and quality can mitigate the risk perceived by the consumer. As a result, we expect that the consumers’ willingness to pay a premium price for a utilitarian foodstuff (i.e., olive oil) is greater than for a hedonic (i.e., wine) foodstuff. Formally:

H₂: The product type moderates the effect of product authenticity on consumers’ willingness to pay a premium price, via the perceived utility of blockchain technology mechanism. Specifically, the positive effect of product authenticity on consumers’ willingness to pay a premium price is greater in the case of utilitarian (i.e., olive oil) rather than in the case of hedonistic (i.e., wine) products.

² Federation Employer created to protect and promote the Made in Italy.

³ In compliance with Law 166/09, article 16.

Methodology. To test the above-mentioned hypotheses, we performed a quantitative analysis, by collecting data from a sample of 606 Italian participants (57,3% female, with ages ranging from 18 to over 65, with the most represented age group being 25-34 years). The online survey was built on the Qualtrics software platform. It was advertised through a convenience sample (Taherdoost, 2016), a kind of nonrandom sampling, where participants are chosen based on certain practical criteria, such as geographical proximity, availability at a certain time, easy accessibility, or the willingness to volunteer (Dörnyei, 2007). We constructed a structured questionnaire using the measurement scales adapted from prior studies, which have been validated for reliability. All items were rated using a 7-point Likert scale. In particular, the concept of product authenticity was measured using an 8-item scale (e.g., Marozzo et al., 2021), while the concept of willingness to pay a premium price was measured using a 3-item scale adapted from Ghali (2020). Finally, the concept of consumer utility's perception of blockchain technology was captured using a 5-item scale (see Appendix – Table A.1). To account for the proposed moderator variable (i.e., product type: utilitarian vs. hedonistic), we created two versions of the questionnaire, one for the utilitarian product (i.e., organic olive oil), and the other for the hedonistic product (i.e., organic wine), with participants randomly assigned to one of the two conditions of the *between-subjects design*⁴.

Harman's single-factor test, reliability of each scale through Cronbach's α coefficient, descriptive analysis, Pearson's correlation analysis, and Hayes' PROCESS Macro Model 4 and Model 5 were used to analyze the gathered data. All completed questionnaires were analyzed using IBM SPSS Statistics (version 25, SPSS Inc., Chicago, IL, USA) and the PROCESS macro3.5 (Hayes, 2017). The demographic profiling of the participants was reported by descriptive statistics. Harman's single-factor test was used to examine the common method bias derived from self-reported data (Podsakoff et al., 2003). The Cronbach's α coefficient was used to evaluate the scale's reliability (Nunnally, 1978). Pearson correlation analysis was used to investigate the association between consumers' perceived product authenticity, utility's perception of blockchain technology, and willingness to pay a premium price for an organic product. The mediating role of the utility's perception of blockchain technology was examined using PROCESS Model 4. The moderating effect of the product category (utilitarian vs. hedonistic) was analyzed using PROCESS Model 5 (Hayes, 2017). In addition, we used the 5000 resample bootstrapping method with a 95% CI to test the effect of the independent variables on the dependent variable through the mediating variable. All p values were two-sided, with $p < 0.05$ indicating a statistically significant result. The report of this study strictly adheres to the STROBE Statement (von Elm et al., 2007).

Results. As the first step, Harman's single-factor test extracted 16 factors with eigenvalues greater than 1. The first factor explained 42.02% of the total variance, which falls below the recommended threshold of 50% (Kock, 2020), suggesting that common method bias is unlikely to significantly impact the results of our analysis. Then, all the used scales were evaluated for reliability. Specifically, the concept of product authenticity showed a Cronbach alpha (α) of .91 and all corrected Item-Total Correlations were $>.65$; willingness to pay a premium price showed an $\alpha = .90$ and all corrected Item-Total Correlation $>.79$; finally, the concept of utility's perception of blockchain technology showed an $\alpha = .94$ and all corrected Item-Total Correlations $>.76$. Consistent with common practices in the literature (e.g., Diamantopoulos et al., 2012), for each of the above-mentioned constructs (i.e., product authenticity, willingness to pay a premium price, and utility's perception of blockchain technology) we sought to derive a unidimensional value for each scale, thus, an average score was computed. Descriptive statistics and Pearson correlation analysis on the average score of the constructs were performed to test the relationships among measured variables. As shown in Table 1, Pearson correlation analysis demonstrated that product authenticity was positively correlated with utility's perception of blockchain technology ($r = .418, p < .01$) and willingness to pay a premium price ($r = .521, p < .01$). Likewise, willingness to pay a premium price was found to have significant positive relationships with utility's perception of blockchain technology ($r = .315, p < .01$).

Table 1. Means, standard deviations, and Pearson correlations of each variable (N=606)

Variable	M	SD	Product authenticity	Utility's perception of blockchain technology	Willingness to pay a premium price
Product authenticity	5.12	1.27	-		
Utility's perception of blockchain technology	5.19	1.39	.418*	-	
Willingness to pay a premium price	5.07	1.52	.521*	.315*	-

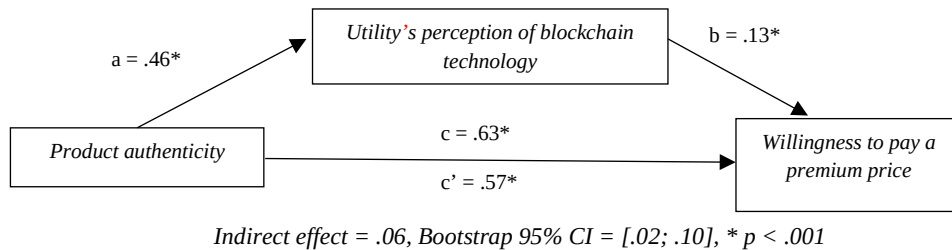
* $p < .01$

Then, a mediation analysis (PROCESS macro - model 4, Hayes, 2017) was conducted to test the underlying mechanism outlined in H_1 (product authenticity $\rightarrow$ utility's perception of blockchain technology $\rightarrow$ willingness to pay a premium price). The analysis yielded a significant total effect of product authenticity on willingness to pay a premium price ($c = .63; p < .001$); a significant effect of product authenticity on utility's perception of blockchain technology ($a = .46, p < .001$); a significant effect of utility's perception of blockchain technology on willingness to pay a premium

⁴ Considering the aim of this research, that is whether new sustainable (e.g., organic production) and innovative (e.g., blockchain technology) practices applied to agri-food products can impact the perception of product authenticity e, in turn, increase the willingness to pay a premium price for the purchase of products with these features, in the introductory part of the questionnaire was shown a picture of the product (containing both the reference to organic production - i.e., organic EU certification, both the reference to blockchain technology - i.e., QRcode) accompanied by a brief description of both organic production and blockchain technology.

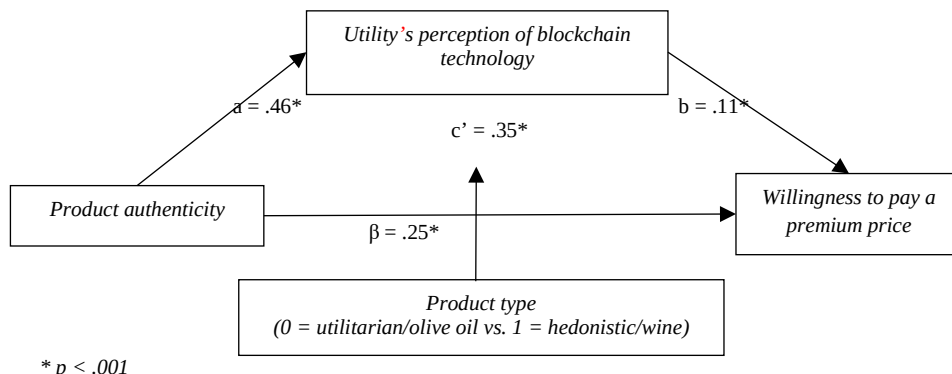
price ($b = .13, p < .001$); and a significant direct effect of product authenticity on willingness to pay a premium price ($c' = .57, p < .001$) when controlling for utility's perception of blockchain technology. The indirect effect was quantified as .06, with a 95% bias-corrected bootstrap confidence interval based on 5,000 resamples of [.02; .10], thus supporting the prediction that the utility's perception of blockchain technology mediates the effect of product authenticity on willingness to pay a premium price. Figure 1 illustrates the results of the mediation analysis. Overall, the results provide support for the effect of product authenticity perception on consumers' willingness to pay a premium price for an organic product through a utility's blockchain technology-based mechanism.

Figure 1. The mediating effect of utility's perception of blockchain technology on the relationship between product authenticity and willingness to pay a premium price.



To further explore and test our H_2 , which posits that the relationship between perceived product authenticity and consumer's willingness to pay a premium price via utility's perception of blockchain technology is moderated by product type (utilitarian vs. hedonistic), we conducted a moderated mediation analysis (PROCESS macro - model 5, Hayes, 2017). Specifically, product authenticity was treated as the independent variable, the type of product (0 = utilitarian – olive oil vs. 1 = hedonistic – wine) as the moderator, whereas consumers' willingness to pay a premium price and the utility's perception of blockchain technology as the dependent and the proposed mediator variable, respectively. Results of the conditional mediation showed that the direct effects model predicting consumers' willingness to pay a premium price accounted for 34% of the variance ($R^2 = .34$; $F(4, 601) = 76.88$; $p < .001$). In particular, the results showed that product authenticity positively influenced the utility's perception of blockchain technology ($a = .46, p < .001$), which in turn was positively related to consumers' willingness to pay a premium price ($b = .11, p < .001$). Even when considering the utility's perception of blockchain technology, product authenticity still significantly influenced consumers' willingness to pay a premium price ($c' = .35, p < .001$). More importantly, the results also revealed a significant interaction (i.e., product authenticity X product type; $\beta = .25, p < .001$) in the direct "c" path between product authenticity and consumers' willingness to pay a premium price. Specifically, the relationship between perceived product authenticity and consumers' willingness to pay a premium price was stronger in the case of the utilitarian (i.e., organic olive oil) product versus the hedonistic (i.e., organic wine) product ($b_{\text{utilitarian}} = .60, t = 10.35, p < .001$ vs. $b_{\text{hedonistic}} = .34, t = 5.31, p < .001$). These results supported our H_2 . The indirect effect of perceived product authenticity on consumers' willingness to pay a premium price via utility's perception of blockchain technology turned out to be statistically significant ($\beta = .05$; boot standard error [SE] = .02; 95% [CI] = [.01; .09]). The model results are detailed in Figure 2.

Figure 2. The moderating effect analysis



Conditional direct relationship

Product authenticity $\rightarrow$ Willingness to pay a premium price

In case of utilitarian product (olive oil): $\beta = .60, t = 10.35, p < .001$

In case of hedonistic product (wine): $\beta = .34, t = 5.31, p < .001$

Indirect relationship

Product authenticity $\rightarrow$ Utility's perception of blockchain technology $\rightarrow$ Willingness to pay a premium price

$\beta = .05, SE = .02, \text{Bootstrap } 95\% \text{ CI} = [.01; .09], p < .001$

Overall, our results provide support for the effect of perceived product authenticity on consumer willingness to pay a premium price for an organic product through a utility's perception of blockchain technology-based mechanism. More importantly, the results suggest that the effect is greater in the case of utilitarian (vs. hedonistic) foodstuffs.

Research limitations. Future research endeavors have the potential to address the limitations identified in this study. Firstly, given the current study's exclusive focus on Italian participants, broadening the participant pool to encompass individuals from diverse cultural backgrounds could significantly enhance the generalizability of findings. Future research might, therefore, extend the sample by including participants from different countries with diverse characteristics and behaviors towards new sustainable (e.g., organic production) and innovative (e.g., blockchain technology) practices. Secondly, to establish causality, future investigations could benefit from longitudinal, and cross-cultural studies that move beyond the confines of the present research. Third, future studies could investigate other sectors and expand on how blockchain could potentially transform consumer trust dynamics across different industries. Finally, as the research solely relied on self-reported data, there is a potential for the findings to be influenced by participants' subjective perceptions. Thus, addressing this limitation might involve incorporating more data sources to validate self-reported information.

Managerial implications. This research offers several managerial implications for companies operating in the organic food industry that are considering the implementation of blockchain technology. As utility's perception of blockchain technology is increasingly recognized as a mechanism to ensure the authenticity of products, companies should closely monitor market trends and quickly adapt their branding and marketing strategies to capitalize on consumers' orientation in the transparency and authenticity principles. It is recommended that companies prioritize the implementation of blockchain-based systems to track and validate the production path of their organic products. This can increase consumers' perceptions of authenticity among consumers and, thus, their propensity to pay a premium price. Finally, since the effect of the perception of authenticity is greater in utilitarian food than in hedonistic food, companies should adapt their marketing strategy according to the type of food products. For example, for utilitarian foodstuffs, firms should highlight the benefits to the health, provenance, safety, and sustainability of the product, while for hedonistic products they could focus more on sensory experience and luxury.

Originality of the paper. This study develops a model that integrates different concepts from different domains (i.e., organic food products, blockchain, and consumer disposition). By adopting a multidisciplinary approach, this research can lead to a deeper understanding of consumer behavior and attitudes toward utilitarian and hedonistic products. Moreover, to the best of our knowledge, there are no studies that analyze the perception of the utility of blockchain technology in the relationship between product authenticity and consumers' willingness to pay a premium price for an organic product. Understanding how consumers perceive blockchain technology's utility applied to organic food and how this can impact their decisions may be relevant to continue advancing the application of this technology to ensure transparency and authenticity within the agri-food industry.

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Appendix

Table A.1. Measurements items, sources, and reliability of study instrument

Variables	Measurement Items	Source (adapted from)	Cronbach Alpha
Willingness to pay a premium price	I am willing to spend extra in order to buy the organic olive oil/wine	Ghali (2020)	$\alpha = .90$
	It is acceptable to pay a premium price to purchase the organic olive oil/wine		
	With respect to conventional olive oil/wine, I am willing to pay more for organic olive oil/wine		
Product authenticity (The organic olive oil/wine):	Is a genuine product	Marozzo <i>et al.</i> (2021)	$\alpha = .91$
	Is an original product		
	Is a true product (not altered)		
	Is a typical product		
	Is made with the traditional method		
	Is unique in its kind		
	Reflects its place of origin		
Utility's perception of blockchain technology	Is a typical Italian product	Authors' proposal	$\alpha = .94$
	Blockchain technology is reassuring with regard to product traceability		
	Blockchain technology reduces the risk of food fraud		
	Blockchain technology increases my confidence in the product		
	Blockchain technology, allowing product traceability, reassures me about the authenticity of the product		
	Blockchain technology, enabling product traceability, reassures me about product sustainability		

Note: All items were measured on a 7-point Likert scale (ranging from 1=Strongly disagree, 7=Strongly agree).

Evolution of Sustainable Reporting: Analysis of Impacts and Prospects of CSRD Regulation

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Abstract

This ongoing study aims to analyze the impact of the Corporate Sustainability Reporting Directive (CSRD) and, consequently, ESRS (European Sustainability Reporting Standard) on the evolution of corporate non-financial reporting in Europe. Following a detailed introduction to the regulatory and corporate context in which the CSRD operates, the research method adopted is multidisciplinary and critical, combining a systematic literature review, an analysis of corporate implementation processes, and an exploration of the impact on the financial market. Preliminary results indicate that the CSRD is significantly influencing the reporting practices of European companies, fostering greater transparency and corporate accountability. However, challenges related to the complexity of the new regulatory provisions and the quality of reporting data also emerge. Research limitations arise due to the recent implementation of the CSRD, necessitating further studies to comprehensively evaluate its long-term impact. The implications of this study pertain to the promotion of corporate sustainability and corporate governance, while innovations and prospects focus on the importance of a dynamic and evolving approach to research on corporate sustainability reporting.

Key words: Corporate Sustainability Reporting Directive; sustainable reporting; sustainability; regulatory framework; environmental impact.

Framing of the research. Sustainability represents a topic of crucial importance that delineates the future of our planet and the destiny of future generations (Goyder, 1961; Heald, 1970; Clark, 2005). It constitutes a broad and interconnected concept embracing responsible management of natural resources, environmental conservation, social equity, and economic prosperity (Carroll, 1999; Cristofori et al., 2007; Barile et al., 2023). Today, the challenge of sustainability demands a redefinition of our lifestyles, production, and consumption models to ensure the planet's capacity to sustain the escalating needs of industrialized societies (Dylick & Hockerts, 2002; Djsi, 2009; Li & Gao, 2022). Over the decades, changes in economic development models have often resulted in devastating environmental impacts, including accelerated climate change, biodiversity loss, pollution, resource scarcity, and social inequalities (Gray, 2006; D'Amore et al., 2015). Consequently, the concept of sustainability emerges as the key to effectively addressing such challenges, necessitating the adoption of sustainable practices in all aspects of life, from food to energy, transportation to construction, and even to investments and public policies (Hopwood et al., 2005). This is not merely an ethical imperative but also an economic one, as sustainable practices can enhance efficiency, reduce costs, and stimulate innovation (Nidumolu et al., 2009; Garvey et al., 2020; Calabrese et al., 2021; lo Conte et al., 2023).

However, transitioning towards a sustainable future requires a long-term vision and the involvement of all sectors of society, including businesses, governmental institutions, and citizens (Bowen, 1953; Clark, 2005; Colbert & Kurucz, 2007; lo Conte & Sancetta, 2024). In this context, technological progress and innovation play a fundamental role in mitigating environmental impacts and improving quality of life, offering significant opportunities for economic growth derived from sustainable solutions (Nidumolu et al., 2009; Csrquest, 2010; Calabrese et al., 2021). Nevertheless, time is essential as the window of opportunity to address sustainability challenges is rapidly narrowing (Desa, 1992; lo Conte et al., 2023). New sustainability regulations, such as the Corporate Sustainability Reporting Directive (CSRD) of the

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European Union, represent a milestone in the journey towards a greener and more responsible future⁶ (Tepic et al., 2023)⁷. These regulations, along with other initiatives such as the Task Force on Climate-related Financial Disclosures (TCFD) in the United Kingdom, compel businesses to consider sustainability issues as integral to corporate decisions, promoting a transition towards a green economy (Tepic et al., 2023). Figure 1 provides a synthesized overview of the key steps involved in this path.

Figure 1: Key Steps in Sustainability Reporting Process and Impacts

Year	Development	Impact
2000	Introduction of the Global Reporting Initiative (GRI) in Europe, providing guidelines for sustainability reporting.	The GRI framework became widely adopted by European companies, setting a standard for sustainability reporting globally. It encouraged transparency and accountability in corporate practices.
2014	European Parliament approves the Non-Financial Reporting Directive (NFRD), requiring large companies to disclose non-financial information.	The NFRD marked a significant step in mandating non-financial disclosure, enhancing transparency, and enabling stakeholders to evaluate companies' environmental and social performance.
2017	European Commission publishes guidelines on non-financial reporting, providing further clarity on NFRD requirements.	The guidelines helped companies understand and implement the NFRD's provisions effectively, promoting consistency and comparability in non-financial reporting across the European Union.
2018	Task Force on Climate-related Financial Disclosures (TCFD) releases recommendations for climate-related financial disclosures, influencing European reporting practices.	The TCFD recommendations prompted European companies to assess and disclose climate-related risks and opportunities more comprehensively, aligning their reporting with emerging global standards.
2020	European Union publishes the Taxonomy Regulation, establishing criteria for environmentally sustainable economic activities.	The Taxonomy Regulation provided a framework for defining sustainable investments, guiding capital flows towards environmentally beneficial activities and fostering green finance initiatives across Europe.
2023	Corporate Sustainability Reporting Directive (CSRD) is adopted, expanding NFRD requirements to cover more companies and enhancing reporting quality.	The CSRD represented a significant advancement in sustainability reporting by broadening its scope to include more companies, strengthening reporting standards, and promoting consistency and comparability in disclosure practices across the EU.

Source: our processing

This article aims to analyze the new sustainability regulations, examining the historical-cultural context and evolution of ESG criteria and reporting over time. Significant attention is placed on key European and global frameworks, from the Non-Financial Reporting Directive (NFRD) to the recent Corporate Sustainability Reporting Directive (CSRD), which came into effect on January, 2023. Through a comparative analysis with previous regulations, and in an exploratory manner, the article seeks to highlight how the CSRD represents a significant step towards measuring corporate performance related to sustainability. Indeed, the historical evolution of ESG (Environmental, Social, and Governance) criteria signifies a significant transformation in how companies and investors perceive sustainability. These criteria, which now play a crucial role in corporate and investment decisions, have a history dating back several decades. The origins of a responsible approach to investment predate the new millennium, with ethical investment prohibitions found as far back as biblical times and social movements such as the Quakers' opposition to war and slavery in the 1600s (Renz et al., 2023). Even the political history of South Africa demonstrated the effectiveness of disinvestment as a tool for social change during apartheid (Rodrigues et al., 2020). The Kyoto Protocol in 1997 marked a turning point in global attention to environmental risks, while the 2000s saw the emergence of the ESG approach for responsible investments (Fasan & Mio, 2017; Schaltegger & Burrit, 2020).

The 2030 Agenda further solidified this commitment, establishing 17 global goals called Sustainable Development Goals (SDGs) to create a more sustainable future, involving states, businesses, and investors in a program of binding rules for the current and future common good (Li & Gao, 2022). For the years to come, a series of priority sectors have also been outlined, aiming to reduce carbon footprint through the EU plan for greenhouse gas emissions reduction by 2030 compared to 1990 levels (Davis et al., 2006). Additionally, initiatives are underway to make transportation more environmentally friendly, enhancing cycling infrastructure and investing in sustainable public transportation. The European Green Deal, supported by funding such as NextGenerationEU, thus aims to achieve the goal of reducing climate impact (Khan et al., 2016; Velte & Stockl, 2020). Research conducted by SAP Insight (2021) highlights the growing recognition among companies of the importance of sustainability not only as an external strategy but also as a means to generate long-term competitiveness and value. According to the study, 75% of the 6,600 managers surveyed in 40 countries and 29 sectors believe there is a strong or moderate positive relationship between sustainability and long-term profitability, with a 17% increase compared to 2021⁸. Furthermore, 71% of respondents see a similar relationship between sustainability and long-term competitiveness, with a 28% increase from the previous year. Companies are then

⁶ The Corporate Sustainability Reporting Directive (CSRD) is a significant regulatory framework introduced by the European Union (EU) in 2023, to enhance sustainability reporting practices among companies operating within its jurisdiction.

⁷ Directive (EU) 2022/2464.

⁸ The research carried out by SAP Insight (2021) underscores the mounting acknowledgment within companies of sustainability's crucial role, not just as an external strategic endeavor but also as a fundamental catalyst for long-term competitiveness and value creation. According to the study, there is a widespread perception of a positive relationship between sustainability efforts and long-term profitability.

increasingly using data to support decision-making processes, especially to achieve zero-emission goals, thanks to the development of new measurement systems (Gond et al., 2020). However, managers believe that more certain and transparent data, with increased frequency, are still needed to ensure the validity of calculations and hypotheses.

Purpose of the paper. The overarching objective of this research is to undertake a comprehensive analysis of regulatory developments within the European sphere pertaining to sustainability and ESG reporting, with a focal point on the Corporate Sustainability Reporting Directive (CSRD) and its ramifications for businesses and stakeholders. Central to this endeavor is the investigation of both the immediate and long-term effects of the CSRD on corporate operations and the financial market, coupled with the identification of emerging challenges and opportunities. The research question guiding this inquiry is articulated as follows:

- “What is the impact of the Corporate Sustainability Reporting Directive (CSRD) on the evolution of corporate non-financial reporting in Europe, and what are the future implications for businesses and stakeholders?”.

To address this inquiry, the chosen methodological approach relies on a meticulous scrutiny of literature, regulatory frameworks and pertinent corporate disclosures. This entails evaluating the core objectives and foundational tenets of the CSRD, alongside conducting a granular examination of the reporting mandates and projected timelines for its implementation. Moreover, the study endeavors to scrutinize the strategies employed by European firms in response to the CSRD stipulations, encompassing compliance measures, risk mitigation strategies, and reporting methodologies. This endeavor involves a comprehensive analysis of the hurdles and prospects inherent in the process of aligning with the new regulatory paradigms and integrating sustainability into organizational frameworks. Additionally, an imperative facet of this research is to appraise the prospective future impacts of the CSRD on investor decisions and asset management strategies, as well as on the dynamics of corporate value chains. This entails probing the CSRD's role in fostering heightened corporate transparency and accountability, as well as in guiding sustainable capital allocation and facilitating long-term value generation (Dowd, 2009). Lastly, through a judicious analysis and synthesis of research outcomes, the objective is to derive insightful conclusions pertaining to the CSRD's role in advancing corporate sustainability objectives, both within Europe and on a global scale (Sassen & Rasche, 2021).

It is crucial to underscore that this research represents an ongoing endeavor, continually adapting to new findings and emerging challenges in the field of sustainability reporting. The methodology employed herein serves as a foundation for future research, providing a robust framework for further exploration and inquiry into the evolving landscape of corporate sustainability. As such, this study not only contributes to the current understanding of the implications of the CSRD but also lays the groundwork for future investigations aimed at elucidating the evolving dynamics of sustainability reporting and its impact on businesses and stakeholders.

Methodology. The critical nature of the methodology is underscored by its focus on conducting in-depth analyses of relevant regulatory documents, literature, and corporate reports to identify criticalities, innovations, and emerging trends. A pivotal aspect of this methodology is the systematic and critical review of existing literature, which involves ongoing research and analysis of academic articles, government reports, regulatory documents, and relevant corporate reports. The overarching goal is to comprehensively understand the regulatory, corporate, and academic landscape within which the CSRD operates, pinpointing challenges, opportunities, and criticalities associated with its implementation and its impact on corporate reporting practices. Moreover, the methodology encompasses the analysis of the CSRD's implementation processes by European companies, necessitating the examination of compliance strategies, risk management approaches, and corporate reporting practices. Additionally, the research methodology includes a thorough examination of the CSRD's impact on the financial market and corporate dynamics, requiring the collection and analysis of quantitative data from reliable sources to evaluate its influence on investor decisions, corporate strategies, and the dynamics of corporate value chains.

This comprehensive approach enables a thorough exploration of the multifaceted influence of the CSRD on corporate behavior and its implications for investor perceptions concerning sustainability. Moreover, the methodology entails a holistic examination of the criticalities and challenges inherent in this regulation, encompassing an analysis of potential compliance hurdles, such as the intricacies of newly introduced regulatory provisions, and the requisite allocation of additional resources for organizational adaptation.

Results. Despite the persistent uncertainty stemming from the covid-19 pandemic, other factors such as lack of adequate financing and misaligned strategies hinder investments towards sustainability (Io Conte & Sancetta, 2024). However, over the past year, a significant change has been observed in the attitudes of corporate executives towards sustainability (Chauvey et al., 2015; Barile et al., 2023). Measures of environmental impact, integration of sustainability into business processes, and alignment with business strategies have gradually diminished in importance as obstacles, indicating an improvement in understanding sustainability issues (Edgley et al., 2015; Bosco et al., 2023). Sustainability has become increasingly strategic on the global agenda and among Italian companies, but it is essential for leadership to embrace change and adequately prepare corporate resources to address this transformation, with technology playing a crucial role as a tool for measuring and implementing concrete actions.

In today's global business landscape, key sustainability frameworks, such as the Global Reporting Initiative (GRI), play a fundamental role in shaping corporate strategies and reporting, contributing to guiding the world towards a more sustainable future (GRI, 2008; 2009; Tepic et al., 2023). These tools provide guidelines and standards for measuring, managing, and communicating the environmental, social, and governance impact of companies (Khan et al., 2016).

The GRI, in particular, represents one of the most well-known and widely used frameworks globally. It has established guidelines for sustainable reporting covering a wide range of ESG (Environmental, Social, Governance) issues, offering companies a comprehensive framework to measure and communicate their sustainable impact. Another emerging framework is the International Sustainability Standards Board (ISSB), dedicated to developing global standards for corporate sustainability reporting. This tool aims to improve the consistency, comparability, and reliability of sustainability information, focusing mainly on the financial aspects related to sustainability and providing investors with a clearer view of sustainability-related risks and opportunities in corporate investment decisions (Sassen & Rasche, 2021). A significant aspect is represented by the European Union Taxonomy, a regulatory framework developed to identify sustainable economic activities and guide investments towards common environmental goals. This taxonomy, published in the Official Journal of the European Union in 2020, establishes clear criteria for qualifying an activity as eco-sustainable, promoting investments in sectors contributing to environmental and climate objectives⁹ (Grewal et al., 2020). Non-financial reporting (NFR) standards constitute another important initiative, requiring European Union companies to disclose sustainability information that goes beyond traditional financial aspects. This framework aims to improve transparency and consistency in corporate reporting practices within the EU. By exploring each of these sustainability frameworks in detail, it is possible to better understand their impact and the evolution of corporate regulations towards greater sustainability responsibility and transparency.

That said, one of the outputs of the research consists of comparing the European Sustainability Reporting Standards (ESRS), delineated by CSRD, and the Global Reporting Initiative (GRI). This analysis aims to provide a detailed understanding of the differences, similarities, and practical implications between these two sustainability reporting frameworks. Sustainability information, in fact, has a dual nature, combining quantitative and qualitative aspects to offer a comprehensive and descriptive view of corporate sustainability performance (Khan et al., 2016; Guenster et al., 2023). This type of information is not limited to mere past descriptions but also projects into the future. For example, environmental goals declared by companies must be contextualized in a medium- to long-term perspective, aligned with international agreements such as the Paris Agreement and the European Green Deal. It is imperative to include “science-based” goals as well. Prospective information must be an integral part of transition plans, which are detailed in sustainability reports and include implementation, financing, and investment actions consistent with the goals established by the Paris Agreement and the Green Deal, with particular attention to energy sectors derived from coal, oil, and gas.

As said before, a significant aspect concerns the correlation between ESRS (European Sustainability Reporting Standards) and key international sustainability reporting standards, such as the GRI (Global Reporting Initiative) and the SASB (Sustainability Accounting Standards Board). In particular, the guidelines establish that the GRI standard corresponds to the requirements of the ESRS regarding impact relevance, while the SASB standard corresponds to those for financial materiality (Guenster et al., 2023). This clarity simplifies the transition to ESRS adoption for companies already using these standards. Although both standards cover a wide range of sustainability issues, including environmental, social, and governance aspects, there are some fundamental differences between ESRS and GRI. ESRS follows the principle of “double materiality,” which requires companies to assess both the impact of their activities on the environment and society and the impact of these issues on their financial performance (Grewal et al., 2020). In contrast, the GRI primarily focuses on the materiality of impact, i.e., the effects of corporate activities on the environment and society (Li & Gao, 2022). It should be noted that while ESRS will become mandatory for large companies and listed companies in the EU starting in 2024, GRI standards will remain voluntary. Consequently, companies subject to ESRS will have to comply with stricter legal requirements than those using only GRI standards. However, despite these differences, companies currently adopting GRI standards for their sustainability reporting will be well prepared to adopt ESRS, as many disclosure requirements are similar or complementary (Renz et al., 2023). Additionally, GRI has committed to collaborating with EFRAG to provide technical guidance on how current reporters can use their GRI-based reporting practices and processes to comply with ESRS (Figure 2).

Figure 2: Correlation and Transition Between ESRS, GRI, and SASB Standards

Aspect	Description
Correlation between ESRS, GRI, and SASB	The ESRS (European Sustainability Reporting Standards) align with key international standards like GRI (Global Reporting Initiative) and SASB (Sustainability Accounting Standards Board). The GRI standard corresponds to ESRS requirements on impact relevance, while SASB aligns with financial materiality.
Differences Between ESRS and GRI	ESRS follows the principle of “double materiality,” assessing the impact on both the environment/society and financial performance. GRI focuses primarily on the materiality of impact, namely the effects on the environment/society.
Mandatory vs. Voluntary Adoption	ESRS will be mandatory for large and listed companies in the EU starting in 2024, while GRI standards remain voluntary. Companies under ESRS face stricter legal requirements compared to those using GRI standards.
Preparedness of GRI Users for ESRS Adoption	Companies currently adopting GRI standards are well prepared to transition to ESRS, as many disclosure requirements are similar or complementary. GRI collaborates with EFRAG to provide guidance on aligning GRI-based reporting with ESRS.

Source: our processing

⁹ The taxonomy discussed here, published in the Official Journal of the European Union in 2020, sets forth precise guidelines for identifying eco-sustainable activities. Its aim is to stimulate investments in sectors that support environmental objectives.

Despite the current trend observed in large companies, it is inevitable that the adoption of ESRS will require considerable effort from all companies, especially SMEs (Grewal et al., 2020). Smaller companies will be called upon to expand their organizational structure, involving additional skills both in the boardrooms and in daily operations, to address the new sustainability-related challenges. It will be essential to equip themselves with adequate tools for collecting, analyzing, reporting, and monitoring data required by the rigorous requirements of ESRS (Sassen & Rasche, 2021). This will require a proactive approach to compliance with new regulatory standards, involving the integration, or even the construction, of the organizational infrastructure and data management systems necessary well before the Directive comes into effect. In summary, the future requires companies to prepare in advance and adopt a strategic approach to sustainability to remain competitive and compliant with emerging regulatory requirements.

Research limitations. The limitations of this research encompass the continuously evolving nature of both the regulatory framework and corporate practices concerning sustainability reporting. Given the rapid pace of change in regulations and directives, particularly in response to emerging environmental and social challenges, there is a risk that new developments could occur after the completion of this study, potentially affecting the relevance and applicability of the findings. Another significant limitation is the potential variability in the availability and quality of data from companies, particularly regarding their adherence to sustainability reporting standards like ESRS and GRI (Tepic et al., 2023). Factors such as corporate transparency, reporting practices, and the willingness of companies to disclose relevant information could influence the depth and accuracy of the analyses conducted in this research. Moreover, conducting a comprehensive analysis of sustainability reporting standards and practices requires significant financial and human resources, and resource constraints may limit the scope and depth of the research, potentially leading to gaps in the analysis or the inability to explore certain aspects thoroughly. Despite efforts to maintain objectivity, the researchers' opinions and interpretations may unavoidably influence the presentation of results and conclusions, introducing limitations in the form of potential biases or assumptions. Addressing these limitations is crucial for ensuring the robustness and reliability of the research findings, with strategies such as ongoing monitoring of regulatory developments, careful selection and verification of data sources, securing adequate resources for research endeavors, and employing rigorous methodologies to mitigate bias being essential. Furthermore, transparency regarding the research methodology, data sources, and potential biases is essential for promoting the credibility and trustworthiness of the research findings.

Managerial implications. The managerial implications of this research are significant and pertain to both large enterprises and SMEs. Firstly, companies need to prepare in advance to comply with the new European sustainability reporting standards, considering the commitment and resources required to meet the more rigorous legal requirements introduced by the ESRS. This entails the need to review and potentially restructure current reporting practices and data management systems to ensure compliance and accuracy of the information provided. Moreover, companies must consider the strategic role of sustainability in their business model and corporate reputation. Adoption of ESRS not only ensures regulatory compliance but can also offer market differentiation opportunities, enhance investor and consumer trust, and improve corporate reputation. Consequently, managers need to integrate sustainability into the corporate strategy by incorporating sustainable goals and actions into operational and investment plans. SMEs, in particular, face additional challenges in adapting to ESRS standards, considering their limited resources and the potential complexity of sustainability reporting. However, it is essential for SMEs to commit to implementing sustainable practices and adopting a corporate culture oriented towards social and environmental responsibility. To achieve this, investments in staff training, technology, and data management systems may be necessary to ensure accurate reporting and compliance with required standards. Lastly, managers need to be aware of the financial and reputational implications associated with sustainability. In fact, effective management of sustainability information can influence investor assessment, access to capital, and the perception of the corporate brand (Io Conte & Sancetta, 2024).

Originality of the paper. The originality of this study lies in its focus on the comparative analysis between the European Sustainability Reporting Standards (ESRS) and other international sustainability reporting standards, such as the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB). Specifically, this study distinguishes itself by delving into the relationship between ESRS and GRI standards, highlighting the similarities, differences, and practical implications for companies subject to these regulatory requirements. Additionally, this study contributes to existing literature through an in-depth analysis of managerial implications and practical challenges associated with the adoption of ESRS standards, providing valuable insights for managers and stakeholders involved in sustainability reporting. In the future, longitudinal studies could be conducted to track the evolution of companies' sustainability reporting practices over time in response to changes in regulatory frameworks and market dynamics. This would provide valuable insights into the effectiveness and impact of sustainability reporting standards on corporate behavior and performance. Moreover, broadening the scope of comparative studies beyond established frameworks such as ESRS, GRI, and SASB to encompass emerging standards like the Task Force on Climate-related Financial Disclosures (TCFD) recommendations or the International Integrated Reporting Framework would afford a comprehensive perspective on the evolving landscape of sustainability reporting.

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Greening the culinary scene: environmental management initiatives in restaurant sustainability

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Abstract

This research examines the ways in which environmental issues can foster the development of sustainability patterns in restaurants. The study examines a sample consisting of restaurant employees in the United States and derives valuable insights. The results underscore the substantial contribution of environmental consciousness and cleaner production practices in promoting innovative sustainability processes. In addition, the study points out a noteworthy relationship between sustainability process innovation, product innovation, and environmental sustainability progress in the restaurant industry. These findings outline the central role of environmental sustainability in the restaurant industry by highlighting the intricate links between water and energy use in operational workflows, which have a significant impact on environmental conservation efforts. Consequently, prioritizing energy efficiency emerges as a key strategy for reducing the carbon footprint associated with foodservice operations.

Key words: sustainability; restaurants; cleaner production; innovation.

Framing of the research. In contemporary times, organizations face a multitude of environmental changes and claims. Scholars and practitioners emphasize the central role of sustainable product and process innovation in promoting sustainable development, recognized for its potential in conferring competitive advantage (Kuo et al., 2022). Many companies have adopted sustainable innovation strategies to gain an advantage (Asadi et al., 2020; Veronica et al., 2020; Tu & Wu, 2021). As a result, the integration of cleaner production techniques and environmental management schemes has become indispensable in operations, facilitating sustainable product innovation through resource efficiency and waste reduction (De Medeiros et al., 2022). This trend has stimulated the emergence of new sustainable management practices in various sectors aimed at promoting innovative solutions and continuous improvements in sustainability. More in detail, the restaurant sector has a particular incentive to align its management practices with sustainability principles (Kim & Hall, 2020; Sakshi et al., 2020), given its strategic positioning and wide network of stakeholders, including food suppliers, employees, policy makers, and consumers, thus exerting influence on the whole supply chain. Within the restaurant industry, awareness of its significant environmental and social impacts is growing (Kim & Hall, 2020), particularly regarding food waste during preparation and service (Dhir et al., 2020; Filimonau et al., 2020; Okumus, 2020). Restaurants, a key component of the hospitality sector, are the third largest contributor to global food waste, behind only households and the agricultural sector, including associated food processing industries (Filimonau et al., 2019). What distinguishes restaurant activities from other tourism activities is the amalgamation of production, consumption, and service, which makes it difficult to effectively respond to customer needs or resolve dissatisfaction. In addition, the perishable nature of most foods compounds this complexity. Nonetheless, efficient production and service remain critical for hospitality businesses. Because restaurant offerings are experiential in nature, customers tend to perceive environmentally conscious restaurants as more reliable than their non-sustainable counterparts (Kim & Hall, 2020; Han, 2021). Investments in environmental sustainability can prove critical in mitigating several challenges, including high operational costs, environmental uncertainties, and impacts on internal and external stakeholders (Hu et al., 2023). Moreover, the adoption of sustainability in food service operations not only addresses these challenges, but also improves reputation and customer loyalty. Consumers increasingly prioritize environmentally conscious firms, making sustainability initiatives a valuable asset for competitive differentiation (Kim & Hall, 2020). In this wake, restaurants can build trust with stakeholders and create a positive brand perception, which ultimately leads to customer satisfaction and loyalty. However, the path to sustainability in the restaurant industry is multifaceted and requires

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comprehensive approaches that include not only environmental concerns, but also social and economic dimensions. Therefore, while environmental management practices play a key role in promoting sustainable restaurant development, their integration with broader sustainability strategies is essential for long-term success in a rapidly changing business environment.

Purpose of the paper. Previous research highlights the potential of sustainable initiatives to differentiate restaurants from competitors. Despite the expanding literature on environmental management and sustainable development in the restaurant industry (Cantele & Cassia, 2020; Madanaguli et al., 2021), empirical evidence remains limited. Thus, there is a pressing need for further empirical studies to fill these research gaps and clarify the role of environmental concerns in promoting sustainable development in the restaurant sector. Accordingly, the primary objective of this study is to examine the impact of environmental management practices on achieving environmentally sustainable development in the restaurant industry. Furthermore, extant literature (Llach et al., 2013; Iraldo et al., 2017; Baah et al., 2021) has primarily focused on exploring the connections between cleaner production strategies, environmental sustainability, and organizational performance, as well as examining the relationship between sustainable product innovation, cleaner production, environmental management, and financial performance. Building upon these foundations, our study expands these models by introducing the constructs of sustainable process innovation, water reduction, and energy reduction. This expansion is crucial in the context of environmentally sustainable development within the restaurant sector, where the adoption of advanced technological equipment aimed at mitigating ecological impacts is pivotal (Elkhwesky, 2022). Additionally, acknowledging the interdependence of water and energy consumption in restaurant operational processes is essential (Da Rosa et al., 2021). Efforts to reduce water usage significantly contribute to environmental conservation, with practices such as employing water-saving appliances and minimizing water waste in kitchen processes helping conserve resources and reduce the ecological impact of water extraction and treatment. Similarly, prioritizing energy reduction is paramount for minimizing the carbon footprint of restaurant operations, involving measures such as adopting energy-efficient appliances, optimizing heating, ventilation, and air conditioning systems, and integrating renewable energy sources. By synergizing water and energy reduction strategies, a more comprehensive and holistic approach to environmental sustainability literature is achieved, particularly concerning the restaurant sector. Moreover, this study underscores that environmentally conscious management practices, including waste reduction, energy efficiency, and sustainable sourcing, enhance resource efficiency, consequently contributing to the overall environmental sustainability of restaurants. These theoretical insights advance academic discourse on the relationship between environmental management and environmentally sustainable development within the restaurant industry, offering a nuanced and comprehensive understanding of underlying mechanisms and influencing factors.

Methodology. The study focuses on examining the restaurant industry's engagement with environmental sustainability. Utilizing a self-selection sampling technique (Keiding & Louis, 2018), data were gathered from Amazon MTurk, targeting restaurant employees in the United States. The constructs concerning environmental management, cleaner production, sustainable product innovation, and sustainable process innovation were adapted from previous studies (Severo et al., 2017). Additionally, items pertaining to water and energy reduction were drawn from Teng et al. (2012), while those related to sustainable environmental development were adapted from Severo et al. (2015). Responses were measured on a scale ranging from 1 (strongly disagree) to 7 (strongly agree). A pilot test involving 50 respondents was conducted to ensure the clarity and validity of the scales (Holden, 2010). Minor adjustments were made based on feedback received during the pilot study, with respondents from this phase not included in the subsequent analysis. To analyze data, partial least squares structural equation modeling (PLS-SEM) was employed, following established guidelines (Ali et al., 2018; Usakli & Kucukergin, 2018). Two systematic procedures were undertaken: the measurement model and the structural model. Smart-PLS 4.0 software was utilized to assess both models. In the measurement model stage, construct validity and discriminant validity were evaluated. Additionally, the Fornell-Larcker criteria (Fornell & Larcker, 1981) and the heterotrait-monotrait (HTMT) method were employed to examine discriminant validity (Henseler et al., 2015). The results indicate a lack of discriminant validity.

Results. The expected results should highlight that restaurants prioritizing environmental concerns and implementing cleaner production practices exhibit notable advancements in sustainability process and product innovation. This should be in line with previous findings (Martin-Rios et al., 2018; Cantele & Cassia, 2020; Principato et al., 2021), indicating that such initiatives foster optimization of resource utilization, waste reduction, energy efficiency, and sustainable development of processes and products. Consequently, these practices contribute significantly to enhancing the long-term viability and reputation of restaurants as environmentally friendly establishments (Kasim & Ismail, 2012; Kim & Hall, 2020). Furthermore, the study should point out that restaurants emphasizing sustainable product innovation and engaging in responsible, pro-environmental product design play a crucial role in reducing resource consumption and promoting environmental sustainability within the restaurant sector (Madanaguli et al., 2021; Han, 2021). Notably, these results pertain to the supply side, focusing on the practices adopted by the examined restaurants rather than consumer demand. This underscores the growing awareness, perception, and inclination towards implementing sustainable policies in restaurant management. While it remains uncertain whether these initiatives are driven solely by firms or influenced by consumer demand, our findings should underscore the importance of such policies and practices for restaurants in the sample.

Research limitations. This study contributes to the existing body of literature on environmental management within the restaurant industry through several avenues. However, it has several limitations that deserve consideration. One notable limitation is the exclusive reliance on participant data collection, which limits the ability to compare the results with other datasets. To avoid this limitation, future research should explore the replication of the survey in other domains.

This approach would facilitate the establishment of additional decision-making parameters for selecting sustainability practices that are potentially beneficial for financial success. In addition, there is an opportunity to explore a new research avenue focused on eco-design and eco-innovation to assess their impact on sustainable product innovation. By delving into these factors, researchers can understand their influence on promoting environmentally sustainable practices. In addition, our results suggest the potential application of the Resource-Based View (RBV) to examine the resources and strategic capabilities that enable restaurants to effectively implement environmental management practices. Understanding the role of these resources in contributing to sustainable development could enrich the theoretical foundation of this study. Moreover, further exploration of institutional theory could offer valuable insights into how external pressures, rules, and regulations shape the adoption and effectiveness of environmental management practices in the restaurant industry. This theoretical lens may provide a deeper understanding of the institutional context that influences sustainable development efforts. Finally, it is important to note that this research primarily adopts a supply-side perspective. Therefore, our future efforts aim to conduct a demand analysis in the later stages of the research. This will look at whether consumers expect and perceive such sustainability policies as crucial factors in their decision making. This consumer-centered analysis will shed light on the broader impact and implications of environmental sustainability practices in the restaurant industry.

Managerial implications. Increasing environmental awareness among consumers and the implementation of global regulations in favor of environmental conservation have forced both businesses and government bodies to invest in sustainable practices. In line with this paradigm shift, our findings offer several implications for managerial strategies to promote and implement environmentally sustainable development. First, it is critical that managers actively engage employees in initiatives to develop innovative practices that improve productivity while promoting environmental ethics. This involves implementing environmentally friendly processes and products within organizational structures. To this end, organizations should encourage employee involvement in creative processes, enabling them to explore and propose environmentally sustainable solutions. Fostering a culture of innovation and sustainability requires a holistic approach that encompasses various dimensions of organizational functioning. This includes enhancing cross-functional collaboration, promoting knowledge sharing, and investing in employee training and development programs focused on sustainability. By nurturing a culture that values innovation and sustainability, organizations can harness the collective intelligence and creativity of their workforce to drive meaningful change. Building on the concept of creativity as a driver of inventive solutions (Begum et al., 2022), active engagement in creative processes enables employees to identify applicable procedures, gather relevant information, and use this data to devise innovative applications and techniques that foster sustainable process and product innovation. In addition, policymakers and government agencies are increasingly focusing on initiatives revolving around green leadership and the promotion of process and product innovations to promote environmental sustainability. It is imperative that governments and organizations collectively pursue the Sustainable Development Goals (SDGs) by supporting the use of environmentally friendly products and processes. In addition, our work offers valuable insights and suggestions to policymakers regarding the facilitation of sustainable innovation processes within companies, emphasizing the importance of an integrated approach encompassing several strategic actions. This integrated perspective is essential for steering sustainable innovation efforts in the right direction, aligning with broader environmental sustainability goals.

Originality of the paper. This paper stands out for its originality in several key aspects, setting it apart from existing literature and contributing novel insights to the field of environmental sustainability within the restaurant industry. Firstly, the focus of the research on the integration of environmental management practices, cleaner production techniques, and sustainable innovation processes within the context of restaurants is original. While prior research has explored various facets of sustainability in the hospitality sector, including food waste reduction and energy efficiency, this study takes a holistic approach by examining the synergistic effects of multiple sustainability strategies on overall environmental performance. By including constructs, such as sustainable process innovation, water reduction, and energy reduction, the paper expands the theoretical framework and offers a comprehensive understanding of how restaurants can achieve environmental sustainability through multifaceted approaches. Moreover, the methodology employed in this study contributes to its originality. By utilizing a self-selection sampling technique and gathering data from restaurant employees in the United States, the paper captures insights from a diverse range of perspectives within the industry. This approach allows for a nuanced analysis of the factors influencing environmental sustainability in restaurants, including organizational culture, employee engagement, and managerial practices. Additionally, the use of robust statistical analyses, such as partial least squares structural equation modeling (PLS-SEM), enhances the reliability and validity of the findings, further distinguishing this paper from previous research efforts. Finally, by providing actionable insights for restaurant managers and policymakers, the study bridges the gap between theory and practice, offering practical guidance for implementing environmentally sustainable development strategies. This emphasis on real-world applications enhances the relevance and impact of the research, further distinguishing it from existing theoretical studies.

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Perceived authenticity of green influencers: An experiment on components and determinants

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Abstract

This research examines how the authenticity components affect consumer perceptions of green influencers' sponsored and non-sponsored communications and their influence on sustainable behavioral intentions. In an experimental study involving 486 participants, we assess the impact of the six authenticity components—accuracy, connectedness, integrity, legitimacy, originality, and proficiency, as identified by Nunes, Ordanini, and Giambastiani (2021)—on consumers' intentions within the realm of green influencers. In addition, an exploratory cluster analysis identifies distinct consumer segments based on their evaluation of these components in judging the effectiveness of green influencers' communication. Our results illuminate the diverse ways consumers perceive authenticity, showing that authenticity judgments not only differ based on the consumption context but also vary individually, as consumers attribute different levels of importance to these components.

Key words: Green influencers; Authenticity; Green Marketing; Influencer Marketing

Framing of the research. Firms are increasingly relying on green influencers – social media figures who advocate for minimizing or eliminating the negative environmental impacts of human behavior (Jacobson and Harrison 2022), to promote a greener brand image when communicating in the digital landscape (De Fano, Schena, and Russo, 2022). Similar to traditional influencers, these individuals act as independent third-party endorsers, shaping audience attitudes through blogs, tweets, and other social media platforms (Freberg et al., 2011, p. 90).

Green influencers, while recognized as highly effective communicators in the digital realm, particularly with younger audiences, face a significant challenge when aligning with corporate interests (Zollo et al., 2020). Their promotional partnerships with companies, particularly in the form of sponsored content, often lead to a perceived reduction in their communicative effectiveness. This is largely due to the risk such sponsorships pose to green influencers' perceived authenticity (Audrezet, De Kerviler and Moulard, 2020). Followers may perceive these influencers as compromising their values for financial gain, leading to negative reactions to sponsored posts and skepticism about the underlying marketing intentions (Xie and Feng, 2023). As a result, an influencer's authenticity can be compromised by the intrusion of brands into their content.

Purpose of the paper. Recent literature has attempted to explain why some collaborations between green influencers and firms succeed while others do not, focusing on communication strategies to preserve authenticity in sponsored content (Audrezet, De Kerviler and Moulard, 2020). However, this research is based on a conceptualization of authenticity viewed as a monolithic construct, overlooking how perceptions of authenticity can significantly vary depending on different consumption contexts (Morhart et al., 2015)

With the aim to provide a finer grained understanding of the determinants of green influencers' authenticity, we first build on the most recent contributions on authenticity, which consider it as the result of a holistic assessment of six component judgments: accuracy, connectedness, integrity, legitimacy, originality, and proficiency (Nunes, Ordanini, and Giambastiani, 2021). According to recent literature, we consider authenticity a higher-order construct comprising various components each one contributing to the perceived authenticity of an experience. Building on the findings of Nunes et al. (2021), our research aims to identify which components of authenticity are most significant for consumers in evaluating green influencers and in predicting sustainable behavioral intentions in both sponsored and non-sponsored content. Specifically, our study aims at responding to two interviewed research questions: RQ1: Which are the most important authenticity components in the context of green influencers communications? RQ2: How the relevance attributed to each authenticity component shapes judgments about sponsored communications?

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Methodology. To answer our research questions, we run an experiment with a sample of 496 active social-media users recruited on Prolific Academic (Mage = 28.39, 49% female). The study employs a 2 groups (sponsored vs. non-sponsored) between subjects' design. At the beginning of the study, we provided participants with a definition of green influencers, which are "social media influencers whose main goal is to promote sustainable, ecological, and environmentally friendly habits (e.g., choosing biological foods, buying organic clothing, recycling, and waste reduction). In general, green influencers promote actions aimed at minimizing or eliminating negative effects of human behavior on the environment." We then asked participants to indicate how many of these influencers they follow on social media. Only participants who follow at least one green influencer were considered eligible to complete the study.

Participants indicated the name of one green influencer they follow and on which social media they follow this green influencer. After this, we provided all participants with a description of two types of content that green influencers can create: (1) sponsored content, where the green influencer develops content in collaboration with a brand or another entity that is financially supporting the creation of that content (paid advertisement) and clarified that when the content is sponsored, influencers have to signal that to their audience; and (2) non-sponsored content, where the content created by the green influencer is not developed in collaboration with a brand or another entity, so the green influencer is not receiving extra monetary compensation for the creation of that content (no advertisement). We then randomly assigned participants to the two conditions and asked them to describe the typical post that their chosen green influencer creates when publishing sponsored (vs. non-sponsored) content. We also asked participants to specify which kind of green behavior the influencer was communicating. We collected our main dependent variable, behavioral change intentions, by asking respondents to indicate how likely they would change their behavior following the advice of this green influencer's sponsored (vs. non sponsored) content on a scale going from 1 = Not at all to 5 = Very much.

After collecting our main dependent variable, we provided participants with a list of 20-items developed using the authenticity component's definitions by Nunes et al. (2021). For each of the six components, participants rated the importance of to three to four items describing a specific characteristic aligned with the components' definitions. Among those items we also included an attention check question. In Table 1, we report the full list of items together with the corresponding Cronbach's alpha calculated for each authenticity component.

Table 1. List of items for each authenticity component and Cronbach's alphas

Component	Item	Alpha
Accuracy	The extent to which you consider the green influencer as sincere in their communications	.86
	The extent to which you consider the green influencer as transparent in how they communicate	
	The extent to which you consider the green influencer to be reliable in terms of what they communicate	
Connectedness	The extent to which you feel connected and engaged by the green influencer's communication	.79
	The extent to which you feel inspired to change your behavior by the green influencer's communication	
	The extent to which you see the green influencer as someone like you	
Integrity	The extent to which the green influencer really believes in what they are doing	.75
	The extent to which the green influencer is not acting out of its own financial interests	
	The extent to which you consider the green influencer's communication as consistent over time	
	The extent to which you see the green influencer behaving coherently with what s/he is advising	
Legitimacy	The extent to which you see the green influencer following the common rules and norms in the social media platform	.80
	The extent to which the green influencer has a high number of followers	
	The extent to which the green influencer has a verified profile	
	The extent to which the green influencer is recognized as highly influential by other influencers	
Originality	The extent to which the green influencer's communication is unique	.72
	The extent to which the green influencer stands out from the mainstream	
	The extent to which the green influencer is able to communicate without unnecessary frills	
Proficiency	The extent to which the green influencer is properly knowledgeable about sustainable topics	.75
	The extent to which the green influencer shows skills and abilities	
	The extent to which the green influencer has expertise in their sustainable domain	

Ratings given on the scale: Not at all important (1) Slightly important (2) Moderately important (3) Very important (4) Extremely important (5)

Results. Overall, 11 participants failed the attention check question and were therefore removed from the analysis, leaving a final sample size of 486 respondents (247 in the sponsored condition and 239 in the non-sponsored condition, keeping the removed participants does not change the results). Considering the satisfactory levels of the Cronbach's alphas, for each of the six components, we created one unique measure averaging the items scores. We report in Table 2 the summary statistics of the main variables included in our analyses

Table 2. Summary statistics

Variable	N	Mean	SD	Min	Max
Intention to change behavior	486	3.54	1.09	1	5
Accuracy	486	4.22	0.76	1	5
Connectedness	486	3.65	0.86	1	5
Integrity	486	4.17	0.67	1	5
Legitimacy	486	2.82	1.00	1	5
Originality	486	3.49	0.82	1	5
Proficiency	486	4.03	0.72	1	5
N of influencers followed	486	3.20	2.41	1	10
Age	486	28.05	7.43	19	59

Mean score values for each authenticity component are above the scale mid-point, indicating that these are overall relevant for consumers in the decision-making process. In addition, some components seem to be more relevant than others, we see accuracy ($M = 4.22$, $SD = 0.76$) and integrity ($M = 4.17$, $SD = 0.67$) appear as the most important components, followed by proficiency ($M = 4.03$, $SD = 0.72$), then by connectedness ($M = 3.65$, $SD = 0.86$), originality ($M = 3.49$, $SD = 0.82$) and lastly by legitimacy ($M = 2.82$, $SD = 1.00$). In Table 3 we include the pairwise correlations among the key variables of interest.

Table 3. Pairwise correlations among variables

	Cond.	B. change	Acc.	Conn.	Int.	Leg.	Orig.	Prof.	N of inf foll
Condition	1.000								
Behavior change	-.171**	1.000							
Accuracy	-.054	.292**	1.000						
Connectedness	-.005	.386**	.534**	1.000					
Integrity	-.023	.261**	.634**	.479**	1.000				
Legitimacy	.018	.189**	.119**	.309**	.093*	1.000			
Originality	.028	.309**	.391**	.509**	.378**	.373**	1.000		
Proficiency	-.028	.324**	.585**	.472**	.547**	.214**	.475**	1.000	
N of inf followed	-.054	.280**	.035	.166**	.048	.103*	.142**	.040	1.000

* Indicates significant at $p < .05$, ** Indicates significant at $p < .01$

Looking at the values, we see a negative significant correlation between the variable condition (sponsored content vs. non-sponsored content) and behavioral change intentions. We also see significant positive correlations among each of the six components and with behavioral change intentions. We also note that the numbers of green influencers followed is significantly correlated with behavioral change intentions, indicating an overall positive relationship between interest in green influencers and intentions to behave more sustainably. Importantly we find no significant correlations between the six authenticity components and our manipulation, indicating that the importance of each component does not vary according to the condition. In Table 4 below we include the results of the pairwise comparisons of score values' importance between the two conditions. In line with the results of Table 4, we confirm the absence of significant differences in the importance of each component for participants in the sponsored vs. non-sponsored content conditions when deciding whether to follow the advice of a green influencer or not.

Table 4. Pairwise comparisons of components across conditions

Component	Sponsored Mean (SE)	Non-sponsored Mean (SE)	t(484)	p-value
Accuracy	4.18 (.05)	4.26 (.05)	1.19	.236
Integrity	4.15 (.04)	4.18 (.04)	0.51	.610
Proficiency	4.05 (.04)	4.01 (.05)	0.62	.535
Connectedness	3.65 (.06)	3.66 (.05)	0.10	.921
Originality	3.52 (.05)	3.47 (.05)	-0.61	.541
Legitimacy	2.81 (.06)	2.81 (.07)	-0.41	.685

We then assessed whether there are differences in participants intention to change their behavior following the recommendations of the green influencer when the content is sponsored (v. non sponsored). We expect non-sponsored content to be considered as more impactful due to the lack of a clear commercial nature (i.e., without financial supporting for the creation of the content). Indeed participants reported a higher likelihood to follow the advice of the green influencer when the content they described was non-sponsored compared to the sponsored one ($M_{\text{non-sponsored}} = 3.72$, $SD = 1.92$ vs. $M_{\text{sponsored}} = 3.35$, $SD = 1.13$, $F(1, 484) = 14.50$, $p < .001$, Cohen's $d = 0.34$). This indicates a general tendency of consumers to penalize sponsored content, resulting in a lower likelihood to engage in sustainable behaviors whenever there is a declared commercial partnership between the green influencer and another organization.

To test the role of each authenticity component in shaping the negative effect of sponsored (vs. non-sponsored) content on behavioral change intentions we conducted a regression analysis with behavioral change intentions as dependent variable, and condition (sponsored vs. non-sponsored) together with the six authenticity components and the interactions between condition and the six as main independent variables. Since the numbers of influencers followed appears to be significantly correlated with several of our variables of interest, we include it as a control in the model. Table 5 below reports the results of the two regression analyses.

Table 5. Linear regressions results

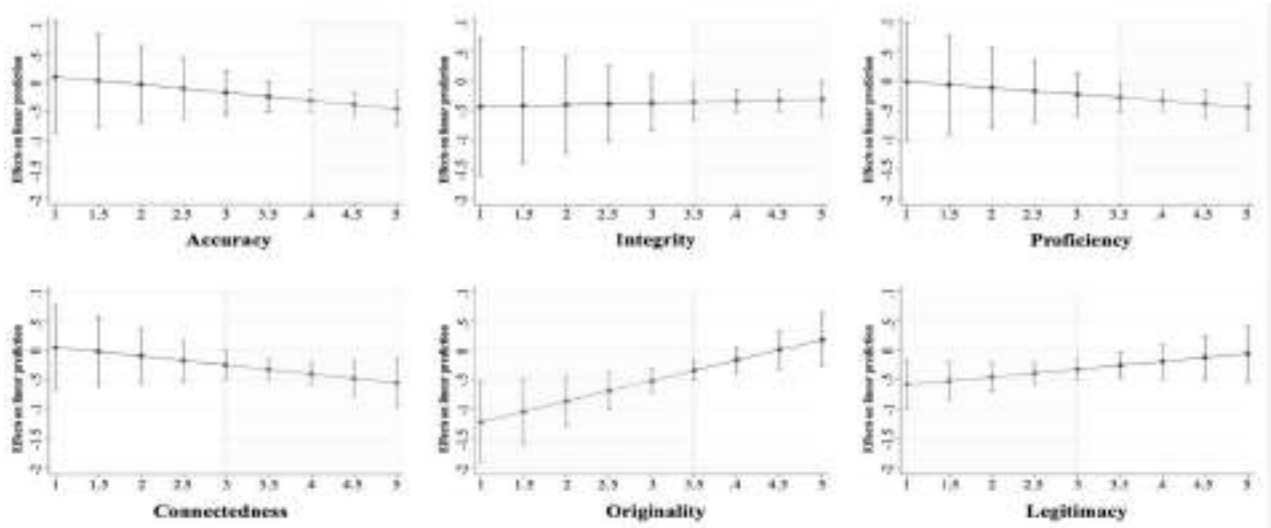
	Model 1 – Behavioral Change Intentions		Model 2 – Behavioral Change Intentions	
	Coeff.	p-value	Coeff.	p-value
Sponsored	#CAMPO! (.09)	.000	-0.50 (.53)	.352
Accuracy	0.06 (.08)	.407	0.14 (.11)	.210
Accuracy x Sponsored			-0.14 (.15)	.368
Connectedness	0.25 (.07)	.000	0.34 (.09)	.000
Connectedness x Sponsored			-0.15 (.13)	.269
Integrity	0.03 (.09)	.728	0.00 (.13)	.997
Integrity x Sponsored			0.03 (.18)	.868
Legitimacy	0.05 (.05)	.363	-0.00 (.07)	.951
Legitimacy x Sponsored			0.13 (.10)	.210
Originality	0.10 (.07)	.146	-0.06 (.08)	.504
Originality x Sponsored			0.35 (.14)	.012
Proficiency	0.21 (.08)	.016	0.23 (.12)	.064
Proficiency x Sponsored			-0.11 (.17)	.534
N of inf followed	0.10 (.02)	.000	0.09 (.02)	.000
Constant	1.10 (.30)	.005	0.82 (.35)	.019
R-squared	.26		.28	
N	486		486	

Note: VCE Robust standard errors appear in parenthesis

Looking at the regression's coefficients, we see connectedness appears as a strong significant predictor regardless of content type. While it appears that the importance of originality shapes the effect differently whether the content is sponsored or non-sponsored.

We further run conditional marginal analyses to look at the effect of sponsored vs. non-sponsored content on behavioral change intentions at every degree of importance for each of the six authenticity components. This analysis increases the informativeness of our results, as values in the regression table are taken at means, while the six components are measured on continuous scales going from 1 to 5. Furthermore, mean importance scores range from 4.22 (the average importance of accuracy) to 2.82 (the average importance legitimacy). We used the floodlight approach (i.e., Johnson-Neyman technique), which allows to calculate the conditional value of condition – comparing sponsored to non-sponsored content – across all range of values for each one of the six components. We report the results of these moderating analyses below and summarize in Figure 1 the marginal linear predictions effects with 95% Confidence Intervals (CIs) displayed.

Figure 1 Conditional Marginal effects of sponsored content with 95% CIs



Taken together, our results indicate a main negative effect of sponsored (vs. non sponsored) communication from green influencers on participants' behavioral change intentions. In addition, the conditional marginal analyses calculated for each of the six authenticity components reveal this effect is more nuanced than expected. Different levels of importance attributed by participants at each of the different authenticity components lead to different reactions.

On the one side, three components seem particularly relevant for companies that want to make use of green influencers to sponsor a product or service, these are accuracy, proficiency, and connectedness. In fact, consumers who attribute more value to these aspects ($JN > 4$ and 3.5 respectively) significantly punish sustainable sponsored content by lowering their behavioral change intentions. At the same time, our results indicate that targeting consumers who do not attribute high value to accuracy, proficiency, and connectedness might be a successful strategy as they do not react differently depending on content type.

On the other side, two other components seem particularly strategic for companies that want to make use of green influencers to sponsor a product or service, these are originality and legitimacy. Consumers who attribute more value to originality and legitimacy ($JN > 3.5$ and 3 respectively) consider sustainable sponsored content as highly as non-sponsored content. So, our results indicate that targeting consumers who do attribute high value to originality and legitimacy might be a successful strategy as they do not react differently depending on content type.

When it comes to integrity, our results suggested a somehow unexpected effect, such that consumers who attribute more value to this component ($JN > 3.5$) have a reduction in the negative effect of sponsored vs. non-sponsored content on behavioral intentions. This result seems to indicate that targeting consumers who attribute high value to integrity might be optimal.

In addition to that, we run an exploratory cluster analysis (Everitt, 1992) aimed at identifying different groups of consumers who assign distinct importance to the authenticity components when making a judgment about green influencers' communication effectiveness. We used a k-means clustering method, which selects a pre-determined number of observations to be used as group means. Afterwards each observation is assigned to the group whose mean is closest, and then, based on that categorization, new group means are determined. This allows to break observations into a distinct number of nonoverlapping groups.

By experimental design, we randomly assigned participants to either evaluate sponsored or non-sponsored content, therefore we run two separate cluster analyses, one for each experimental condition. As additional investigation, we run an exploratory cluster analysis on all the observations, regardless of condition. Results are reported in Table 6.

Table 6: Cluster Analysis Condition

A. SPONSORED CONTENT									
	Cluster			T-test					
Variable	A1	A2	A3	1vs2	Signif	1vs3	Signif	2vs3	Signif
Accuracy	4,49	4,54	3,4	-0,05	N.S.	1,09	0	N.S.	0
Integrity	4,43	4,39	3,55	0,04	N.S.	0,88	0	N.S.	0
Proficiency	4,48	4,12	3,36	0,36	0	1,12	0	N.S.	0
Connectedness	4,2	3,78	2,88	0,42	0,0001	1,32	0	N.S.	0
Originality	4,02	3,61	2,85	0,41	0,0001	1,17	0	N.S.	0
Legitimacy	3,77	2,08	2,74	1,69	0	1,03	0	N.S.	0
Behavior Change	3,87	3,29	2,86	0,58	0,0006	1,01	0	N.S.	0,012
Age	29,04	27,27	27,45						
Female	0,48	0,56	0,39						
N	82	90	75						
B. NON SPONSORED CONTENT									
	Cluster			T-test					
Variable	B1	B2	B3	1vs2	Signif	1vs3	Signif	2vs3	Signif
Accuracy	4,47	4,58	3,48	-0,11	N.S.	0,99	0	N.S.	0
Integrity	4,37	4,44	3,52	-0,07	N.S.	0,85	0	N.S.	0
Proficiency	4,29	4,22	3,46	0,07	N.S.	0,83	0	N.S.	0
Connectedness	4,15	3,8	2,76	0,35	0,003	1,39	0	N.S.	0
Originality	4,03	3,37	2,86	0,66	0	1,17	0	N.S.	0
Legitimacy	3,92	2,12	2,36	1,8	0	1,56	0	N.S.	0,0295
Behavior Change	4	3,84	3,16	0,16	N.S.	0,84	0	N.S.	0
Age	30,11	26,24	30,84						
Female	46%	60%	41%						
N	83	95	61						

Taken together, results of the cluster analyses indicate a pattern of stability in authenticity evaluations, regardless of whether content is sponsored. Our data, in fact, reveal uniformity in how authenticity components are evaluated by corresponding clusters (A1-B1, A2-B2, A3-B3) in both sponsored and non-sponsored scenarios. Revealing that the assessment of the importance of the six components is relatively stable for consumers when judging green influencers

sponsored and non-sponsored communication. This suggests a consistent framework used by consumers in judging the authenticity of green influencers' communication.

Importantly, our findings reveal that the intention to change behavior varies significantly among the clusters, particularly influenced by the nature of the content—sponsored or non-sponsored. For individuals valuing tangible authenticity and expertise over perceived social authority or trendiness (those in clusters A2 and B2) exposure to sponsored content correlates with a lower intention to change behavior. Conversely, for the other participants the propensity to change behavior seem to remain stable, unaffected by whether the content is sponsored. For those valuing authenticity not just for its informational content but also for its relational depth (clusters A1 and B1) the persuasive capacity of green influencers remains robust, while for those that are skeptical in their engagement with influencer content (cluster A3 and B3) the intention to change behavior is generally lower, regardless of the content's sponsorship status.

The two cluster analyses indicate that despite being the least valued component, legitimacy varies considerably in its importance among the different clusters. This suggest that it is key for marketers to assess the extent to which their customers attribute value to legitimacy to select the appropriate green influencers.

Research limitations. While the study provides valuable insights, it acknowledges limitations such as the reliance on self-reported measures, which can be subject to biases. The experiment's design, focusing on a specific sample from Prolific Academic, may limit the generalizability of the findings. Future research could explore these dimensions in more diverse contexts and through longitudinal designs to capture the dynamic nature of authenticity perceptions. In addition, research might sought deeper into the relationship among sponsored content and green influencers by analyzing how the structure of the content proposed might hinder/foster behavioral change intentions.

Managerial implications. Overall, our results suggest that the role of each component can change not only according to the consumption context (Nunes et al. 2021), but also at the individual level, by manifesting differently according to consumers' distinct attribution of importance. As such our research underscores the importance of tailoring sponsoring strategies based on the specific authenticity components that resonate most with an influencer target audience. The process of identification and partnering might require an in-depth assessment of its audience to enhance the effectiveness of sponsored content.

Originality of the paper. This paper stands out by providing a granular analysis of authenticity in the context of green influencer marketing, a relatively underexplored area. It expands on existing literature by breaking down authenticity into its constituent components and examining their distinct roles in influencing consumer behavior towards sustainable practices. The study's methodological approach, combining experimental design with advanced statistical analyses, adds depth to the investigation, offering fresh insights into the interplay between authenticity, influencer content, and consumer intentions in the realm of sustainability.

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Problematizing on the three main pillars of sustainability from a paradox theory perspective

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Abstract

This article investigates the nuanced relationship between economic, environmental, and social sustainability, scrutinizing it through the Paradox Theory and contrasting the notions of "weak sustainability" and "strong sustainability." It delves into the academic discourse, contrasting the substitutability of natural and human-made capital posited by weak sustainability with the non-substitutable, interdependent approach of strong sustainability. This exploration is crucial for understanding the feasibility and implications of sustainability practices within organizations and societies, highlighting the complex interplay and challenges faced in striving for a sustainable future.

Key words: sustainability, weak sustainability, strong sustainability, paradox theory, economic sustainability, environmental sustainability, social sustainability.

Framing of the research. *This research critically examines the relationship between economic, environmental, and social sustainability, applying the Paradox Theory to explore the distinctions between "weak sustainability" and "strong sustainability." The core of sustainability lies in the interconnectedness of its three pillars: economic prosperity, environmental stewardship, and social equity. These elements are entwined in a complex relationship, influencing and impacting each other in various ways.*

Weak sustainability, drawing upon neoclassical economic theories (Solow, 1974; Hartwick, 1977), argues for the substitutability of natural and human-made capitals, suggesting that technological innovation can compensate for environmental degradation. This perspective, rooted in the belief of an optimal path for resource extraction and economic growth, posits that economic and technological advancements can ultimately offset the impacts of natural resource depletion. In contrast, strong sustainability underscores the irreplaceable value of natural capital, arguing that certain ecological functions and resources cannot be substituted by human-made capital (Daly, 1995). This view emphasizes the essential role of the environmental pillar as a foundation for sustaining economic growth and social well-being, highlighting the limitations of technological solutions in addressing ecological challenges.

Paradox Theory offers a framework for understanding the interplay and tensions between these sustainability models (Smith & Lewis, 2011). It suggests that achieving sustainability requires balancing conflicting yet interconnected objectives, recognizing the complexities and challenges inherent in this endeavor. This approach calls for strategic decision-making that navigates the paradoxes of sustainability, aiming for an equilibrium among the economic, environmental, and social pillars.

The debate between weak and strong sustainability reflects broader discussions within the sustainability discourse about the feasibility and implications of different approaches to balancing human development with ecological preservation. Critics of weak sustainability point to its overreliance on technological fixes and economic measures, arguing for a more integrated approach that acknowledges the fundamental importance of the environment in supporting all aspects of human life (Daly, 1995; Elkington, 1997).

This research contributes to the ongoing dialogue on sustainability by critically evaluating the assumptions underlying weak and strong sustainability paradigms. Through the lens of Paradox Theory, it highlights the necessity of embracing complexity and contradiction as central to navigating the path toward a sustainable future, where economic, environmental, and social objectives are pursued in harmony rather than in conflict.

Purpose of the paper. *By drawing on the nuanced relationship among economic, environmental, and social sustainability, the purpose of this research critically assess the underlying definition of the p the Paradox Theory to explore the contrasting paradigms of weak and strong sustainability. The study's central aim is to understand how organizations can navigate the complex interplay of sustainability's three pillars and the implications of different sustainability approaches on corporate practices and policy-making.*

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Weak sustainability, influenced by neoclassical economic theories (Solow, 1974; Hartwick, 1977), suggests that natural and human-made capital are largely substitutable, proposing that technological advancements can mitigate the environmental costs associated with economic growth. This perspective envisions a path where economic development does not compromise the overall stock of global capital, leaning on the assumption that sufficient technological progress can counteract environmental degradation (Dietz and Neumayer, 2007). However, the research critically evaluates the feasibility of this approach, questioning the long-term viability of substituting ecological integrity with human ingenuity.

In contrast, strong sustainability emphasizes the irreplaceable value of natural resources, arguing against their substitutability with human-made capital (Daly, 1995). It posits that environmental sustainability should form the foundation upon which economic and social sustainability can be built, advocating for a paradigm shift that places ecological well-being at the core of sustainable development efforts. This perspective challenges the assumptions of weak sustainability, highlighting the limitations of economic growth and technological solutions in addressing ecological constraints.

Employing Paradox Theory (Smith and Lewis, 2011), the research examines the tensions between these sustainability paradigms, suggesting that sustainability efforts are fraught with conflicting objectives that require strategic balancing. This theoretical lens allows for a deeper understanding of how organizations might integrate economic, environmental, and social goals, despite the inherent contradictions between these objectives.

The study further investigates the practical implications of these sustainability paradigms, analyzing their manifestation in corporate strategies, urban development initiatives, and human resource practices. It seeks to bridge the theoretical discourse with practical applications, providing insights into achieving a sustainable equilibrium that reconciles economic development with environmental stewardship and social equity. By critically evaluating the principles of weak and strong sustainability and applying Paradox Theory, this research contributes to the sustainability dialogue, offering a nuanced perspective on the challenges and opportunities of navigating sustainability's complex landscape. It underscores the necessity of a comprehensive approach that directly links organizational practices to environmental and social outcomes, advocating for a shift towards a sustainability model that respects the interdependencies among its core pillars. Through this exploration, the study aims to foster a deeper understanding of how to promote a more sustainable future, emphasizing the importance of ecological integrity within the sustainability triad.

Methodology. Our main goal is problematizing on the prolific domain of paradox perspective on corporate sustainability. To do so, the methodological procedure we followed is termed "theory synthesis" (Jaakkola 2020)," and aligns closely with the academic exploration into the intricate interplay among the three pillars of sustainability—economic, environmental, and social—within the framework of paradox theory on corporate sustainability. Such a methodological approach, involves the integration and synthesis of various theoretical perspectives to construct a novel, cohesive understanding of a complex phenomenon. The process of theory synthesis is instrumental in navigating the multifaceted and often conflicting dimensions of sustainability, addressing the need for a holistic view that encapsulates the interdependencies and tensions between these pillars.

In embarking on this methodology, the discussion deliberately engages with the dichotomy between weak and strong sustainability paradigms, reflecting a critical examination of their underpinning assumptions and implications for sustainable development. Weak sustainability, with its roots in neoclassical economic theory, posits the substitutability of natural and human-made capitals, suggesting that technological innovation and economic mechanisms can offset environmental degradation. Conversely, strong sustainability emphasizes the intrinsic value of natural capital and its irreplaceability, advocating for a precautionary approach to resource management and environmental conservation. By problematizing these perspectives through the lens of paradox theory, this methodology fosters a deeper understanding of the inherent contradictions and complementary nature of these sustainability paradigms.

The choice of theory synthesis as the guiding methodology is justified by its capacity to bridge disparate theoretical landscapes and foster a nuanced exploration of sustainability. It allows for a re-conceptualization of sustainability that recognizes the essential, yet often paradoxical, relationships among its pillars. This approach mirrors Jaakkola's (2020) delineation of theory synthesis, which seeks to achieve conceptual integration across multiple theories or literature streams, offering a new or enhanced view of a concept or phenomenon. Through this lens, the research not only summarizes and integrates extant knowledge but also propels forward by synthesizing a comprehensive perspective that transcends the limitations of individual sustainability models.

This integrative endeavor is particularly pertinent in the context of corporate sustainability, where organizations grapple with the practical challenges of balancing economic, environmental, and social imperatives. By adopting a theory synthesis approach, the discourse elucidates the dynamic tensions and synergies between weak and strong sustainability, shedding light on the broader implications for strategic decision-making and sustainable business practices. In doing so, it aligns with the aspirations of paradox theory, as outlined by Smith and Lewis (2011), to accommodate interrelated yet conflicting concerns within corporate sustainability, fostering strategies that embrace and navigate these tensions.

In sum, the methodology of theory synthesis, as applied in this chat, serves as a foundational framework for deconstructing and reassembling the complex puzzle of sustainability. It underscores the value of integrating diverse theoretical insights to forge a more holistic, nuanced understanding of sustainability challenges and opportunities, thereby contributing to the ongoing discourse on sustainable development and corporate responsibility.

Results (Main argumentation). Drawing on the paradox theory (Smith and Lewis, 2011) applied to sustainability, it explores the challenges organizations face in maintaining a balance among these pillars (Hahn et al., 2015). Weak sustainability, as advocated by the paradox theory, empowers organizations to maintain equilibrium among the three

pillars through strategic decision-making (Hahn et al., 2018). However, existing research suggests that the implementation of such balancing strategies proves challenging for organizations, leading to ephemeral success (Ferraris et al., 2018; Matzembacher et al., 2020; Henry et al., 2020).

Weak sustainability, as understood from existing research, implies that natural and human-made capitals are interchangeable to some extent, allowing for technological solutions and human ingenuity to compensate for environmental degradation. This perspective is reflected in the emphasis on smart city projects and HR practices aimed at innovation and efficiency, suggesting an underlying belief in the ability to manage environmental challenges through technological advancement and organizational adaptability (Ferraris et al., 2018; Matzembacher et al., 2020; Henry et al., 2020).

The criticism that these studies are vague in defining the interconnections between social, environment, and business in the context of sustainability seems valid. While they explore innovative approaches to managing human resources and partnerships for sustainable urban development, they do not extensively delve into how these practices affect environmental sustainability or societal well-being directly. This gap leaves room for ambiguity regarding how business practices align with the broader goals of sustainability, particularly in balancing economic development with environmental protection and social equity.

For instance, Ferraris et al. (2018) focus on the role of human resource management in fostering both explorative and exploitative alliances in smart city projects. They argue that multinational enterprises utilize various partnerships and a "temporal separation" strategy to maximize the benefits of exploration and exploitation, tailored to the project's aim. This approach indirectly supports a form of weak sustainability by highlighting the balance and trade-offs between innovation (exploration) and operational efficiency (exploitation) in urban development. However, the paper could be critiqued for not clearly delineating the specific impacts on the societal, environmental, and business dimensions of sustainability, thus leaving the relationship among these aspects somewhat vague.

In supporting the statements regarding weak sustainability and the vagueness in the relationship among society, environment, and business, it's clear that while these studies contribute valuable insights into managing innovation and efficiency for sustainability, they also highlight a need for a more explicit articulation of how these practices integrate and impact the broader dimensions of sustainability. More comprehensive research could address these criticisms by directly linking HR practices and business strategies to specific environmental and social outcomes, thus clarifying the role of businesses in promoting not just technological solutions but also in fostering a sustainable balance among economic, environmental, and societal goals.

Organizations grapple with significant difficulties in contributing to the environmental pillar, despite the growing discourse on regenerative businesses (Hahn and Tempe, 2021). This is a result of our inherent dependence on the environment, emphasizing the illusory nature of temporary profits at the expense of ecological well-being. Balancing the three pillars theoretically is an ideal pursuit, yet practical implementation remains elusive. The environmental pillar, in particular, poses a challenge due to its unpredictable and uncontrollable nature (Hollings, 2001). The delicate interplay between economic, environmental, and social sustainability necessitates a nuanced understanding. While theoretical frameworks like weak sustainability offer organizational empowerment, the practical challenges of balancing these pillars underscore the complexity of achieving true sustainability.

Paradox refers to "contradictory, yet integrated elements that exist simultaneously and persist over time" (Smith & Lewis, 2011, p. 382). Although "contradictory" appears easy to grasp when it comes to sustainability objectives, our inquiry revolves around the word "integrated". How does it align with the sustainability domains? Here, it is worth recalling Hahn et al. (2018), who provided a definition of the paradox theory suited for the corporate sustainability: "A paradox perspective on corporate sustainability accommodates interrelated yet conflicting economic, environmental, and social concerns with the objective of achieving superior business contributions to sustainable development. Rather than seeking to align environmental and social aspects with financial performance to eliminate tensions (as the business case does), paradox perspective fosters strategies that accept tensions and attend to different sustainability objectives simultaneously, even if they are conflicting (Gao and Bansal 2013; Hahn et al. 2015)".

The paradox theory offers a lens through which to theoretically find a balance between interrelated yet seemingly contradictory objectives, revealing its limitation when objectives are not considered on the same level, as highlighted by weak sustainability. This perspective assumes that natural and human capital can be interchangeable, presupposing an equivalence that doesn't always reflect reality, especially when considering the environment relative to economic and social aspects.

Therefore, starting from the Cambridge definition of interrelated "connected in such a way that each thing has an effect on or depends on the other", the interrelation between the three sustainability pillars is not equitable in the case of environmental-economic relationship.

In the case of economy and environment, we have economy that has (negative) effect and economy that depends on, both aspects are not reciprocal, invertible.

For social-economic it is different because man is central and one supports the other in some way (dependence) and effect (negative) of economy on society when exploitation for profit.

The interdependence between social and economic pillars, given their common centrality of the human being and the fact that the social is partly fueled by the economic, could suggest a possible harmonization between these pillars.

However, the relationship with the environment remains distinct, underlining how the economic system, in its current configuration, often fails to adequately serve human needs in harmony with the environment.

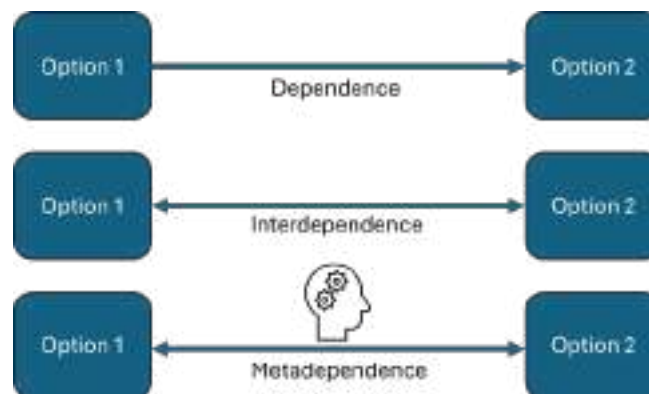
The interconnectedness of the economic and social pillars might indeed be more feasibly harmonized due to their common factor: the human element. In the society we inhabit, the social aspect is significantly fueled by economic dynamics, suggesting a level of mutual dependency between these two realms. However, this interdependence starkly contrasts with the relationship between these human-centric systems and the environment, which often appears to be disregarded or undervalued within the economic model. The prevailing economic system, theoretically designed to serve human needs, frequently fails to account for environmental sustainability, leading to a disconnect that threatens both current and future well-being.

On the other end it stands the strong sustainability. It posits that nature is essential to society (as we are part of it) and both society and nature are vital to the economic system, providing ecosystem services and actors that create value. The foundational principle of strong sustainability emphasizes preserving the economic value of natural capital, emerging as a response to the neoclassical weak sustainability paradigm. Advocates of strong sustainability recognize that in an "empty" world, where human-made capital is scarce and natural capital is plentiful, natural and human-made capital might be seen as substitutes. Yet, in today's "full" world, where natural capital is the scarce resource and human-made capital is abundant, these types of capital should be considered complements. This shift acknowledges natural capital as the constraint on economic growth, highlighting the necessity of preserving it (Daly 1995). In contrast to weak sustainability proponents, strong sustainability supporters are generally skeptical about the role of technological progress in overcoming environmental challenges. Daly (1995) also noted that embracing strong sustainability does not imply an absolute stance against the extinction of any species or the extraction of nonrenewable resources, but rather emphasizes a cautious approach to how these actions are undertaken, reflecting a profound respect for the irreplaceable value of natural capital.

In practice, the concept of strong sustainability offers a path forward by highlighting why certain issues, previously thought to be surmountable through technological advancement or economic growth, remain persistent challenges. This approach underlines the necessity of acknowledging and respecting the limits of natural systems and the indispensable services they provide, which are fundamental not just for the environment but for the very survival and quality of human life.

Emphasizing the connections between these domains—objective interdependence perceived by all, objective unilateral dependence, and metadependence (where there's no objective dependence or interdependence, but rather a mental willingness of interdependence among those who consider it)—is crucial.

Figure 1. Connection between domains (two options)



It highlights the complexity of our world, where economic and social endeavors cannot be sustainably pursued without a deep understanding and integration of environmental considerations. Strong sustainability, therefore, calls for a reevaluation of how we perceive dependencies and interdependencies, urging us to recognize the environment not as a subsidiary concern but as a central component of our collective existence and well-being. This reorientation requires a paradigm shift towards systems thinking, where the economic, social, and environmental pillars are seen not as separate entities but as interconnected parts of a single, dynamic whole.

Strong sustainability emerges as a practical approach that highlights the critical issues insurmountable through weak sustainability, drawing attention to the need for a system that not only recognizes but also respects the primacy of the environment as an indispensable foundation for human and social well-being.

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Track 14
Tourism & Culture Management

The evolution of sustainability discourses in online reviews: an investigation of the impact of triple bottom line dimensions on tourists' eWOM and destination satisfaction.

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Abstract

Although sustainable tourism is a widely used paradigm, research has mainly focused on the supply side and on the environmental dimension. The research about sustainability in tourism, with particular regard to socio-economic and cultural dimensions, is still scant, especially regarding how these dimensions are perceived by tourists.

Our research aims at filling that gap by examining to what extent international and local travelers visiting a destination that is to some extent suffering from overtourism engage in discussing online environmental, socio-economic, and cultural aspects of sustainability when reviewing online. We selected the destination of Iceland collecting 325,000 TripAdvisor reviews of 1445 Iceland attractions covering a ten-year time-frame (2013-2023) were analyzed through text analytics, combining a few specific dictionaries developed to study the online communication of sustainable tourism, CSR communication, and consumer sentiment. Combining text analytics with correlation and regression analysis, the findings reveal an increasing trend in tourists' attention to socio-economic aspects of sustainability (e.g., discussions about employees, human rights, community) while a decreasing trend with regard to the environmental aspects over time. Interestingly, tourists discussing socio-economic and cultural aspects reflect a more positive sentiment polarity in their reviews, while reviews focusing on environmental aspects being correlated with negative emotions. In addition, results from the regression analysis shows how socio-economic and cultural framed reviews positively relate to ratings, while environmentally framed reviews negatively relate to ratings. Destinations are thus suggested to increase their attention and communication toward the socio-economic and cultural aspects of their attraction to enhance customer satisfaction online.

Keywords: environmental sustainability; social sustainability; cultural sustainability; eWOM; Big data; online review

Framing of the research. Even though tourism usually proves beneficial for the economy of a destination, several studies have also highlighted its negative impact on the environment and the local communities, to the point that the 2030 Agenda for Sustainable Development Goals (SDGs) indicates the reduction of tourism negative effects as a priority of future sustainable development (UN, 2021; Confente et al., 2024). In this sense, sustainable tourism development is a common paradigm in both tourism research and tourism industry, with the aim to balance the needs of both present and future generations, in a way that considers economic, environmental, and socio-cultural aspects of tourism development (Mihalic, 2020). However, usually, the environmental dimension is the most adopted from the supply side and is the most well recognized by visitors (e.g. Confente & Scarpi, 2021).

The socio-economic and the cultural dimensions have been increasingly investigated, especially when it comes to considering destinations struggling with overtourism (Helgadóttir et al., 2019; Mihalic, 2020). In this vein, sustainable tourism has been increasingly focused on social issues, aiming at guaranteeing an equal distribution of benefits of tourism among all stakeholders involved (Marchi et al., 2020) and at mitigating the negative effects of tourism on the destination and on residents' quality of life, including overcrowding and gentrification issues (Zhang et al., 2017; Mihalic, 2020). Social sustainable tourism pays particular attention to the preservation of cultural heritage and traditional customs, to the point that some scholars argue that the cultural dimension should be a pillar on its own (Soini & Birkeland, 2014; Kim et al., 2019). Moreover, given the well-known problems of human resources management in the tourism sector (e.g. turnover, seasonality, low pay), work-related issues are also considered part of social sustainability discussions (Ladkin et al., 2023). In line with the Sustainable Development Goal (SDG) number 8 which aims at "promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all", tourism research

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in the field of social sustainability mainly deals with human resources practices with a focus on the respect of human rights and decent conditions of work (Winchenbach et al., 2019).

With regards to the stakeholders involved in tourism research, most of the studies has mainly explored the perspective of residents's perception of social sustainability (e.g. Scarpi et al., 2022), of host communities (Zhang et al., 2017), cities (Marchi et al., 2020) or small tourism enterprises (Zhang & Zhang, 2018), whereas the tourists' perspective on the social dimension of sustainability has been rarely investigated in extant literature.

Hence, despite a few exceptions encompassing the three dimensions of sustainability for tourism (Choi & Sirakaya, 2006; Mejjad et al., 2022), there is a need for more research on tourists' perception of sustainability in destinations, including the social and cultural dimensions together with the more explored environmental one.

Tourists can play an active role of sustainable tourism development by behaving socially and environmentally responsibly, thus being actively involved in the multidimensional sustainability of tourism destinations (Ferrari et al., 2021). Tourist social responsibility awareness is understood as tourists' understanding of their own responsibility in impacting negatively on the destination, its residents, and the tourism employees, as well as in protecting the socio-cultural aspects of the destination they are visiting (Luo et al., 2020; Agapito et al., 2023). In addition, previous research highlights how tourists' perceptions of the social and environmental sustainability of the destination are fundamental to future behavior and loyalty (e.g., re-visit intention, WOM/eWOM) (Kim et al., 2018; Ferrari et al., 2021). Previous studies have related destination social sustainability to tourists' intention to visit (Su et al., 2020) and tourists' positive WOM (Saleh et al., 2023). The extant literature has, however, studied the dimensions of sustainability in a tourism destination mainly through self-reported measures via surveys, thus neglecting the potential attitude-behavior gap (Nieto-Garcia et al., 2024). Other studies that consider real e-WOM behavior were mainly focused on the hospitality industry and on environmentally-framed e-WOM (D'Acunto et al., 2020, 2023; Mariani & Borghi, 2020).

Purpose of the paper. This study explores the attention paid by tourists to different sustainable tourism dimensions when they travel to an overcrowded destination (for this study Iceland was selected). In particular, this exploratory research aims to shed light on the relationship between tourists' discussion of sustainability dimensions in online reviews regarding the attractions of Iceland they visited and the rating/satisfaction they experience in the destination.

For the above, this study aims at responding to the following exploratory research questions:

RQ1: to what extent do tourists traveling to Iceland discuss in their reviews the i) environmental, ii) socio-economic, and iii) cultural dimensions of sustainability over time?

RQ2: to what extent do the three dimensions of sustainability discussed in reviews correlate with the consumer sentiment?

RQ3: to what extent do the three dimensions of sustainability discussed in reviews relate to the customer satisfaction translated into a online rating of the destination attractions?

Methodology. Even though it was long considered a remote country and a hardly accessible tourism destination (Sæþórsdóttir & Hall, 2021), Iceland has recently seen an exponential growth in tourism numbers: arrivals ranged from 303,000 in 2000 and reached 2 million in 2019 (Icelandic Tourist Board, 2023), so that overtourism in the island has become a matter of concerns for both tourism scholars (Helgadóttir et al., 2019; Sæþórsdóttir & Hall, 2021) and tourism practitioners, as well as local communities. (Marcus, 2019; Tourtellot, 2018). This has overall had negative consequences on residents' quality of life (Helgadóttir et al., 2019). Moreover, also tourists' satisfaction has been impacted by excessive overcrowding in Iceland (Sæþórsdóttir & Hall, 2021).

We collected from Tripadvisor 325,000. online travel reviews of 1445 Iceland attractions (including museums, nature & parks, nightlife, sights & landmarks, spas & wellness, water & amusement parks, zoos & aquariums, fun & games) by means of a specific data crawler developed with Python. Data covers over ten years (2013–2023) including the COVID-19 period. Among the data collected there are also reviewers' demographics (e.g. age, gender, country of origin), type of trip (e.g. business, couples, families, friends, solo), the device of posting (mobile, laptop), the reviewer performances on the platform (e.g. n° of contributions, n° of followers, total points, badges, helpful votes received), the review rating (scale 1-5) and both the review textual (e.g. review text, review title, review answer) and visual (e.g. review pictures) content.

We adopted a longitudinal design and analyzed the data through automated text analysis to identify and describe consumer feedback patterns over time. In particular, we employed TripAdvisor reviews to explore whether and how tourists discuss the different dimensions of sustainability when evaluating their attraction experiences.

The software chosen to detect sustainability-related semantics is the Linguistic Inquiry Word Count (LIWC) (Pennebaker et al., 2015), an established tool widely adopted to study customer reviews within the tourism (e.g. Yousaf & Kim, 2023; Liu et al., 2019; Ma et al., 2018) and marketing (e.g. Kim et al., 2018; Hewett et al., 2016; Ludwig et al., 2013) domain. LIWC allows processing a given text based on specific dictionaries converting unstructured textual data into structured data (i.e. numerical outputs), expressed as a ratio between the number of times a specific term included in the dictionary appears in the text out of the total word count of such text. This approach is deemed appropriate to analyze big data such as online texts in an accurate and speedy way and to reduce subjective interpretation in coding.

For the purpose of this study we combined three different dictionaries, developed and validated by their authors:

- 1) The sustainable tourism communication dictionary (Marchi et al., 2023). We relied on this dictionary to identify the recurring sustainability dimensions from the consumer side. This dictionary is an ad-hoc set of keywords developed in the specific domain of tourism and across the 1) environmental, 2) the socio-economic and 3) the cultural

dimensions of sustainability. The environmental dimensions considers: i) Tours/excursions/activities that respect natural sites, green and protected areas, ii) Green practices and iii) Protection of natural environment and landscape with different subtopics. The socio-economic dimensions encompasses i) Support to the local economy, ii) Promotion of local markets and food, iii) Help threatened sites through donations or volunteering, iv) Community support, v) Accessible Tourism for, vi) Safety and security, vii) Human rights, each topic with a focus on different subtopics. The cultural dimension revolves around i) Cultural valorization and ii) Decorum visiting heritage.

- 2) Positive/negative emotions LIWC categories: we used the LIWC internal dictionary to detect the affective content in reviews and to run a sentiment analysis determining the presence of positive and negative emotions embedded in reviews' text, in line with extant research in marketing (e.g. Ludwig et al., 2013; Hewett et al., 2016).
- 3) The CSR dictionary (Pencle & Mălăescu, 2016): while this tool having been adopted in the tourism domain for automated content analysis of consumer generated content (e.g. Mariani & Borghi, 2023; D'Acunto et al., 2023) it has been primarily formulated and developed to investigate CSR communication by the supply side rather than sustainability. We thus rely on the dimension of "Employees" which is currently missing in the sustainable tourism communication dictionary by Marchi et al., (2023), thus merging it to the "socio-economic" dimension of this latter. Table 1 summarizes the structure of the dictionaries used for the analysis.

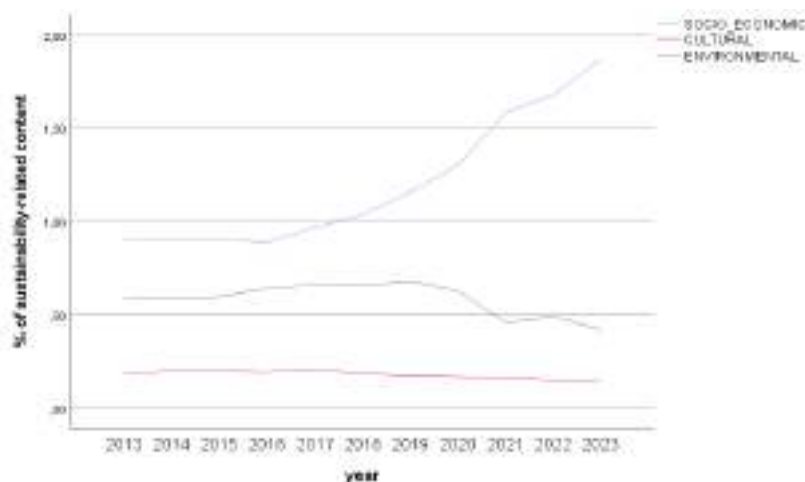
Table 1 Dictionaries used in the analysis

Category	N° of terms	Examples of keywords	Source
Environmental	121	ecologic*, biologic*, biodegradable, low impact*, protected area*, green area*, recycl*, food waste	Marchi et al. (2023)
Socio-economic	99	local economy, fair price, local market*, traditional market*; short food supply chain, km0, local community, human right*, lgbt	Marchi et al. (2023)
Cultural	32	cultural heritage*, historical culture, unesco, archeological artefact*, graffiti, cultural event*, intangible heritage*, damage*, touch, behave	Marchi et al. (2023)
LIWC – Positive emotions	620	Love, nice, sweet	Pennebaker et al. (2015)
LIWC – Negative emotions	744	Hurt, ugly, nasty	Pennebaker et al. (2015)
Employees	319	Diversification, Employee Well-Being, Employee Equity, Minorities, Participatory, Certify	Pencle & Mălăescu (2016)

*stemmed words

Results. The findings (RQ1) exhibit how, since 2016, tourists traveling to Iceland have started paying an increasing attention to the social aspects of sustainability (e.g. i) Support to the local economy, ii) Promotion of local markets and food, iii) Help threatened sites through donations or volunteering, iv) Community support, v) Accessible Tourism, vi) Safety and security, vii) Human rights) when reviewing online their attraction experience. Conversely, the trend of environmentally-related elements (i) Tours/excursions/activities that respect natural sites, green and protected areas, ii) Green practices and iii) Protection of natural environment and landscape) in reviews has been slightly increasing until 2019, then it started decreasing. The cultural dimension discussed in reviews shows a flat pattern and it results the less discussed overall.

Figure 1 Sustainability-related content in reviews over time



When focusing on the single dimensions of sustainability discussed by travelers in their reviews, we then investigated the sentiment polarity of sustainability-framed customer reviews. We thus attempted to respond to our RQ2 by means of a Pearson correlation analysis, considering the three dimensions of sustainability and the level of affective content embedded in reviews, expressed by positive and negative emotions respectively.

The main findings show how the social dimension (.204**; -.48**) and cultural (.024**; -.10**) related content in reviews results positively correlated with positive emotions and negatively correlated with negative emotions, meaning travelers discussing such elements having positive sentiment polarity. Conversely, the environmental content in reviews shows a negative correlation with positive emotions (-.60**) indicating that customers who discuss environmental aspects tend to express themselves with a negative valence. Table 2 shows the Pearson correlation matrix.

Table 2 Pearson correlation matrix

Correlations		ENVIRONMENTAL	SOCIO_ECONOMIC	CULTURAL	posemo	negemo
ENVIRONMENTAL	Pearson Correlation	1	-.082**	,005**	-.060**	,002
	Sig. (2-tailed)		,000	,005	,000	,362
	N	325723	325723	325723	325723	325723
SOCIO_ECONOMIC	Pearson Correlation	-.082**	1	-.045**	,204**	-.048**
	Sig. (2-tailed)	,000		,000	,000	,000
	N	325723	325723	325723	325723	325723
CULTURAL	Pearson Correlation	,005**	-.045**	1	,024**	-.010**
	Sig. (2-tailed)	,005	,000		,000	,000
	N	325723	325723	325723	325723	325723
posemo	Pearson Correlation	-.060**	,204**	,024**	1	-.157**
	Sig. (2-tailed)	,000	,000	,000		,000
	N	325723	325723	325723	325723	325723
negemo	Pearson Correlation	,002	-.048**	-.010**	-.157**	1
	Sig. (2-tailed)	,362	,000	,000	,000	
	N	325723	325723	325723	325723	325723

** . Correlation is significant at the 0.01 level (2-tailed).

In addition, we focus on the role of sustainability-framed reviews in shaping customer satisfaction of travelers visiting Iceland and reviewing its attractions online (RQ3). For this purpose, a regression analysis (OLS) was carried out (table 3), considering as dependent variable the review score rating (ranging 1-5) as a proxy of the overall customer satisfaction with the reviewed attraction, and the three dimensions of sustainability (environmental, socio-economic, cultural) as predictors. Furthermore, few control variables have been included in the model relying on extant eWOM literature, such as the word count (WC) of the review (Chevalier & Mayzlin, 2006), the reviewer age cohort (Gao et al., 2018), the review submission device (i.e. desktop vs. mobile) (Mariani et al., 2019) and the reviewer country of origin comparing local travellers (i.e. Icelanders) versus international travelers (D'Acunto et al. 2023).

Our focal variables main findings exhibit how, while the social (.048**) and cultural (.012**) elements discussed in reviews positively relate with ratings, the environmental dimension negatively relates with ratings (-.012**). These findings indicate that, when travelers focus on the socio-economic and cultural elements of sustainability while reviewing online their attraction experience they tend to rate higher their overall experience. Conversely, when they include environmental aspects in their reviews they tend to rate lower.

With regards to the control variables, findings show how travelers posting reviews from mobile are associated to lower score ratings compared to those ones posting from desktop. This result contrasts previous findings (Mariani et al., 2019) who found a consistently higher valence of mobile eWOM versus desktop eWOM. As a possible explanation, when customers are less satisfied of their tourist attraction they tend to leave negative feedbacks to punish suppliers sooner thus using their mobiles rather than once at home. The country of origin is also found to affect the rating score, with local tourists (i.e. Icelanders) associated with higher score ratings compared to international tourists. As a possible explanation for this finding, the high environmental performance index of Iceland, which ranks 10th worldwide (EPI, 2022) might affect the environmental culture of their residents, resulting in a higher sensitivity for sustainability aspects, in line with D'Acunto et al. (2023). The age cohorts of travellers show a negative relationship with ratings, meaning younger reviewer are more satisfied and convert their satisfaction into higher score ratings.

Table 3 OLS Regression analysis

Coefficients ^a		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
Model		B	Std. Error	Beta			
1	(Constant)	4,645	,013			355,908	,000
	ENVIRONMENTAL	-.012	,002	-.020		-5,830	,000
	SOCIO_ECONOMIC	,048	,002	,081		24,204	,000
	CULTURAL	,012	,003	,012		3,513	,000
	review_device_code	-.046	,006	-.025		-7,363	,000
	reviewer_from_Iceland	,069	,025	,009		2,822	,005
	Age_cohort	-.017	,003	-.023		-6,688	,000
	Word count	,000	,000	-.045		-13,308	,000

a. Dependent Variable: review_rating; N: 325,723; adj. R2: 0.010; F: 129,488

Research limitations. The main limitations of this ongoing study are related to the quantitative nature of the methodology employed. In fact, this research does not provide an in-depth understanding of tourists' perceptions of social and cultural dimensions of sustainability. Future research should go deeper into the data by qualitatively exploring the recurring topics discussed in socially-framed reviews as well as understanding the valence of tourists' narratives in socially-framed reviews, through a content analysis or a netnography.

Managerial implications. This study provides relevant managerial implications. In fact, considering social sustainability pivotal reveals to be convenient for destination management, especially for those destinations suffering from overtourism. Such measures not only foster sustainable practices but also contribute to enhanced visitor satisfaction and positive reviews online, thereby amplifying the overall attractiveness and competitiveness of tourism attractions. Consequently, it is imperative for destination stakeholders to acknowledge and integrate the intricate interplay between social sustainability, visitor experience, and online reputation management into their strategic planning and operational frameworks.

Originality of the paper. This ongoing research will contribute to the sustainable tourism literature, highlighting that visitors do care about different aspects of sustainability and express their concerns and experiences through online reviews. In particular, this study shows that a rising awareness of the social dimension can be underscored in online discussions among tourists, thus presenting an interesting advancement of previous literature.

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Generazione Z e percezione delle sostenibilità nella scelta del servizio alberghiero

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Abstract

In letteratura la generazione Z, rappresentata da individui nati tra il 1996 e il 2010, è descritta come profondamente immersa nelle tecnologie digitali ed è cresciuta in un contesto dominato da globalizzazione e cause ambientali con uno spiccato senso di responsabilità nei confronti della sostenibilità ed il futuro del pianeta.

Il presente studio analizza il ruolo della sostenibilità nella scelta alberghiera della Generazione Z, con un'attenzione specifica al genere. Metodologicamente, attraverso analisi descrittive ed inferenziali, utilizzando dati raccolti tramite un questionario distribuito a circa 600 individui, si evidenzia che, in questo campo, la sostenibilità è considerata parzialmente rilevante rispetto ad altri aspetti di base come il prezzo, la pulizia e i servizi. Inoltre, emergono differenze significative nella percezione della sostenibilità tra i generi e tra coloro che si auto-definiscono sostenibili e non sostenibili.

Key words: generazione Z, ospitalità, sostenibilità, genere, servizio alberghiero

Framing of the research. L'emergenza sanitaria da COVID 19 ha influito fortemente sull'attività delle imprese e sul comportamento di acquisto dei consumatori (Donthu & Gustafsson, 2020, Pantano et al., 2020). In particolare, in seguito alla pandemia, si nota una crescita dell'interesse dei consumatori nei confronti della sostenibilità (Pelikanova et al., 2021). Soprattutto i fattori ambientali sono sempre più considerati dai turisti durante il processo di scelta (Robinot & Giannelloni, 2010). Lo studio dell'importanza attribuita dai viaggiatori ai fattori legati alla sostenibilità nel processo di acquisto risulta quindi di particolare importanza per le imprese turistiche al fine di sviluppare le più appropriate strategie di sviluppo. L'approfondimento dello studio della percezione della sostenibilità da parte dei turisti, e di come questo contribuisca ad influenzare il processo di acquisto, offre infatti interessanti implicazioni manageriali, oltre a contribuire agli studi relativi ai driver di scelta del servizio alberghiero (Madar & Neaşu, 2020). Anche se l'interesse nei confronti della sostenibilità è cresciuto nel corso degli ultimi anni, solo alcuni studi analizzano nello specifico la percezione dei turisti delle pratiche sostenibili (Lin, 2017; Sanchez-Fernandez et al., 2019). Il presente studio si propone quindi di contribuire alla ricerca in corso sul tema della percezione della sostenibilità, in tutte le sue dimensioni (Han, 2021), da parte dei turisti nella fase di decisione di acquisto, con particolare riferimento alla scelta del servizio alberghiero. Inoltre, lo studio si focalizza sulla Generazione Z che viene considerata particolarmente attenta ai temi della sostenibilità (Monaco, 2018; Kafková, 2019; George & Leidner, 2019). Vari studi hanno dimostrato come alcune variabili sociodemografiche come età e genere possano influenzare i comportamenti della clientela legati alla sostenibilità (Yeoman and McMahon-Beattie, 2019; Smith & Kingston, 2021). La generazione, in particolare, rappresenta una caratteristica che determina una diversa percezione della sostenibilità (Kafková, 2019) e per questo motivo deve essere attentamente studiata (Haddouche & Salomone, 2018). Il filone di studi denominato "Generational theory" (Strauss & Howe, 1997) afferma infatti che la sensibilità verso il tema ambientale varia per gruppi di consumatori di diverse generazioni (Li et al., 2013). In particolare, la Generazione Z (nata fra il 1996 e il 2015) risulta diversa dalle altre in merito a vari aspetti del proprio comportamento (Prayag et al. 2022; Seyfi et al. 2023; Sharma et al., 2023). In merito alla sostenibilità, questa generazione è disposta a pagare un premium price per l'acquisto di prodotti sostenibili (Deloitte, 2022), mostra più facilità nell'adozione di pratiche sostenibili (Dabija et al., 2020; Prayag et al. 2022) e, in tema di viaggi, ha interesse ad interagire con la comunità locale e sceglie, più di altre generazioni, servizi alberghieri eco-friendly (Booking, 2019, Ribeiro et al. 2023). Nonostante l'interesse per la sostenibilità mostrato da questa generazione, vari studi rilevano come la sensibilità verso questo attributo spesso non si traduca in vere e proprie pratiche sostenibili (D'Acunto e Filieri, 2021; Parzonko et al., 2021; Giachino et al., 2022; Pinho & Gomes, 2023). Visti i risultati talvolta in contrapposizione della letteratura, risulta interessante approfondire ulteriormente il tema focalizzando lo studio sulla percezione della sostenibilità della generazione Z al fine di comprendere la loro reale propensione verso le pratiche sostenibili.

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Il paper, inoltre, si propone di contribuire agli studi sul comportamento di acquisto del turista indagando gli attributi considerati durante la scelta del servizio alberghiero. Gli attributi principalmente considerati dai viaggiatori durante la scelta sono la pulizia e la location (Dolnicar and Otter, 2003), il prezzo (Lockyer, 2005) e il rapporto qualità/prezzo (Caber and Albayrak, 2014). Alcuni studi più recenti individuano anche il ruolo della sostenibilità come driver di scelta insieme agli attributi precedentemente citati (Bohdanowicz 2005; Lee et al. 2010; Han et al. 2011; Millar and Baloglu 2011; Verma and Chandra, 2018) seppur con particolare riferimento alla dimensione ambientale (Franco et al. 2021). La dimensione sociale e quella della sostenibilità sono considerate solo da alcuni studi (Noonan and Rizzo, 2017; Tölkes, 2018, Franco et. al. 2021). In questo filone di ricerca, alcuni autori si concentrano sul comportamento di acquisto dei viaggiatori appartenenti alla generazione Z cercando di individuare l'importanza attribuita alla sostenibilità in vari settori come quello dei trasporti (D'Arco et al., 2023) oppure in specifiche aree geografiche (Prayag et al., 2022). Alcuni studi analizzano la fedeltà nei confronti dei brand green (Rasheed and Balakrishnan, 2023). Infine, i risultati dello studio di Wee (2019) mostrano come la generazione Z sia particolarmente attenta ai valori sociali ed ambientali legati alla sostenibilità nelle proprie pratiche sostenibili.

Una ulteriore variabile demografica che viene spesso presa in considerazione negli studi sugli effetti della sostenibilità sul comportamento di acquisto del consumatore è il genere (Bencsik et al., 2014; Sahin et al., 2012 e Meizen-Dick et al., 2014). Mantenendo il focus sulla generazione Z, Zhao et al., (2021) sostengono che sono presenti numerose differenze in termini di atteggiamento tra uomini e donne, e quest'ultime in particolare, pongono una attenzione maggiore al consumo di prodotti green e sono più attente all'ambiente (Dragolea et al., 2023). Per quanto riguarda il turismo e l'ospitalità vari autori evidenziano la rilevanza della sostenibilità nella scelta del servizio alberghiero e una generale maggiore responsabilità nei confronti dell'ambiente, rispetto agli uomini (Han et al., 2011 e Wang et al., 2018). Al contrario esistono studi come quello di Kang et al., 2012 che giungono alla conclusione opposta o, come Sevilla-Sevilla (2019) ad una conclusione neutra dove il genere non sembra essere una componente rilevante. Pertanto, al riguardo, il dibattito in letteratura è molto ampio ed i risultati non sono volti ad un fronte o all'altro.

Purpose of the paper. Con riferimento al framework concettuale precedentemente esposto, il paper si propone di indagare la percezione della sostenibilità nelle sue varie dimensioni per la generazione Z, verificando anche un eventuale effetto legato al genere. Nell'ambito degli studi relativi ai driver della scelta del servizio alberghiero non viene affrontato nello specifico il tema della percezione delle sostenibilità, soprattutto nelle sue tre dimensioni (social e d economica oltre che ambientale), legato a una specifica generazione. Il paper si propone quindi di contribuire alla letteratura esistente ponendosi le seguenti domande di ricerca: RQ1. La generazione Z considera importante la sostenibilità nella scelta del servizio alberghiero? RQ2. Quali dimensioni della sostenibilità (ambientale, economica e sociale) sono ritenute più importanti dai viaggiatori appartenenti alla generazione Z?

Con riferimento all'effetto del genere nella percezione della sostenibilità della Generazione Z, lo studio si propone di rispondere alla seguente domanda di ricerca: RQ3. I viaggiatori della generazione Z mostrano una differenza nella percezione della sostenibilità nella scelta del servizio alberghiero in base al genere?

Methodology. L'indagine è stata condotta nel periodo di maggio 2023 attraverso un questionario online rivolto a un gruppo di studenti universitari ed è stato raccolto un campione di oltre 600 risposte. La scelta dell'ambiente universitario ha permesso di intercettare rispondenti appartenenti alla generazione Z, visto il focus dello studio che si concentra sulle caratteristiche e i comportamenti turistici di questa generazione. Il questionario è composto tre sezioni. La prima dedicata all'analisi delle caratteristiche sociodemografiche dei partecipanti mira a delineare il profilo dei rispondenti. La seconda parte del questionario è focalizzata sulle variabili comportamentali legate al turismo, offrendo una visione approfondita delle abitudini di acquisto dei servizi, della frequenza delle prenotazioni e delle motivazioni che guidano i viaggi. La terza sezione, concentrata sugli attributi considerati nel processo decisionale per la scelta alberghiera, offre una prospettiva sugli aspetti sostenibili del soggiorno. La riflessione sulle aspettative riguardanti le pratiche sostenibili adottate dalle strutture ricettive risulta particolarmente rilevante, poiché è la base per comprendere la rilevanza della sostenibilità per il campione coinvolto. L'approccio metodologico nella selezione delle domande e degli attributi è stato integrato attraverso una revisione della letteratura, al fine di identificare correttamente gli aspetti menzionati nel paragrafo precedente. Passando alla parte metodologica, sono state utilizzate sia la statistica descrittiva che la statistica inferenziale al fine di avere un approccio completo e approfondito nella comprensione delle dinamiche emerse (Kaur, Stoltzfus, Yellapu, 2018). L'utilizzo di test d'ipotesi (nello specifico il Mann- U Test, poiché i dati erano distribuiti in modo non-normale) (MacFarland, Yates, 2016) è stata la base per esplorare le differenze di genere e autovalutazione di sostenibilità che sono legate alla successiva interpretazione delle differenti risposte emerse tra i sotto-campioni a disposizione.

Results. Il campione considerato nell'indagine è formato da 637 partecipanti, di cui 432 sono donne, 201 uomini e 4 non hanno dichiarato il proprio genere. Tutti i partecipanti, come già affermato, appartengono alla Generazione Z, con un'età media di 24 anni, un dato che rimane costante sia per le donne che per gli uomini. Nel contesto professionale, il campione presenta una suddivisione tra 150 lavoratori e 481 studenti, con percentuali di genere molto simili. Il titolo di studio prevalente è il diploma, seguito dalla laurea, questi due aspetti, complessivamente, rappresentano l'84% degli uomini e il 91% delle donne. Inoltre, per concludere la descrizione sociodemografica del campione, solo 3 partecipanti dichiarano di avere figli, mentre altri 3 affermano di essere sposati ed infine, è interessante notare che il 70% delle donne e il 75% degli uomini si dichiarano single. Spostando l'attenzione sul reperimento di informazioni, legate alla scelta di strutture ricettive, per tutti i partecipanti, l'indagine rivela che i portali e i siti internet rappresentano le due principali fonti di informazione senza differenze significative tra i generi. Considerando le preferenze di viaggio, dai risultati emersi si evince che la maggioranza degli intervistati preferisce viaggiare in compagnia, con il 35% degli uomini e il 34% delle

donne che prediligono la compagnia degli amici. Seguono da vicino coloro che scelgono di trascorrere le proprie vacanze con il partner (33% degli uomini; 31% delle donne). La famiglia rappresenta una scelta significativa per il 21% degli uomini e il 27% delle donne. Da notare che esiste anche una percentuale, seppur minore, di individui che apprezzano l'esperienza del viaggio solitario, con il 9% degli uomini e il 6% delle donne che prediligono l'autonomia nell'esplorare nuovi luoghi. Curiosamente, non emergono notevoli differenze di preferenze in base al genere quando si tratta di selezionare la compagnia di viaggio, evidenziando un'omogeneità nelle scelte della Generazione Z in questo contesto. Inoltre, analizzando le motivazioni per le quali si è deciso di svolgere una vacanza in una struttura ricettiva, emerge un chiaro trend in termini di preferenze. Le risposte più ricorrenti, distinte per genere, sono rappresentate da "Divertimento/Svago" (65% donne; 68% uomini) e "Relax/Benessere" (52% donne; 50% uomini). Proseguendo con l'analisi della percezione della sostenibilità, ai partecipanti è stata posta la domanda se prestino attenzione alla sostenibilità nella scelta di una struttura alberghiera. Come si evince da Tabella 1, si ha una prevalenza di soggetti, che si definiscono sostenibili nella componente femminile. In quella maschile prevalgono i non sostenibili (55%).

Tab. 1: Attenzione per la sostenibilità: rispondenti per genere e sostenibilità

Genere	Sostenibili		Non Sostenibili		Totali
Uomini	91	45,27%	110	54,73%	201
Donne	222	51,39%	210	48,61%	432

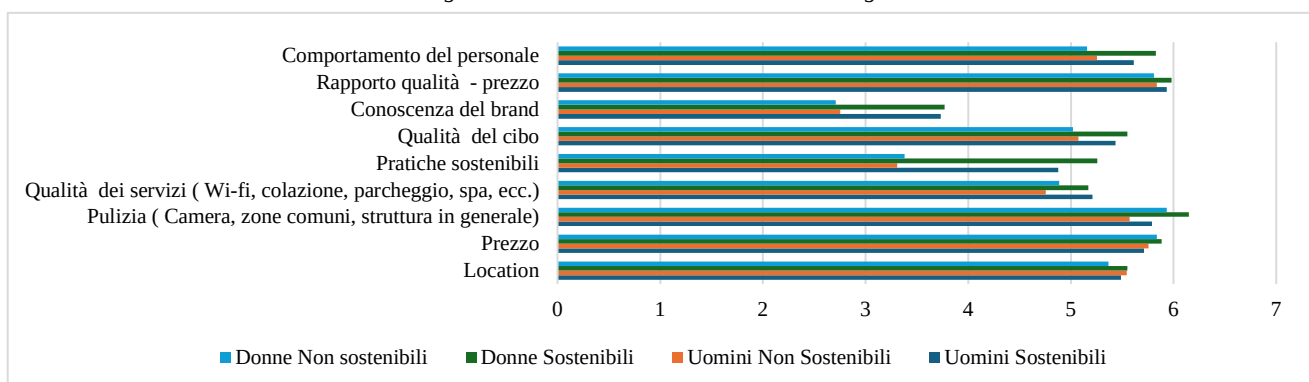
Riguardo la tipologia di strutture ricettiva utilizzata, l'hotel è la scelta principale, affermata dal 41% del campione, seguito da appartamenti e B&B. Importante sottolineare che, anche dividendo il campione per la sostenibilità e genere, non emergono differenze significative. Gli utenti, sia sostenibili che non, utilizzano con percentuali quasi identiche, le stesse tipologie di strutture del mondo dell'ospitalità (Albergo, circa 40%, seguito da appartamenti 35-37% e B&B 16%). In conclusione, è possibile affermare che, descrittivamente, non emergono differenze significative né di genere né di sostenibilità all'interno del campione. Gli utenti della generazione Z mostrano abitudini e preferenze turistiche che non differiscono molto tra di loro in questo campo.

Nella fase successiva dell'analisi, si utilizzano strumenti di statistica inferenziale per valutare due aspetti correlati alla generazione Z in questo campo. Il primo aspetto riguarda la rilevanza degli attributi nell'ospitalità alberghiera. Dai risultati emerge una considerazione moderata della sostenibilità nella scelta alberghiera (punteggio medio di 4.20). In ogni caso, in comparazione con gli attributi di base (come, ad esempio rapporto qualità prezzo che ottiene 5.89 e Pulizia con 5.86), la sostenibilità è valutata in modo lievemente inferiore. Infine, dividendo il campione tra sostenibili e non sostenibili si evince come facilmente intuibile una maggiore importanza attribuita dalla prima categoria (sostenibili 5.26 e non sostenibili 3.38).

Al fine di comprendere se siano presenti differenze significative in base al genere e al profilo di sostenibilità, si procede all'analisi delle differenze, verificando se i criteri di valutazione degli attributi dell'ospitalità alberghiera mostrino disparità significative tra i generi e tra chi si dichiara sostenibile o meno. Questa prima fase di analisi mira a fornire una prospettiva più approfondita e dettagliata sulle preferenze e sulle attitudini della generazione Z in merito agli attributi delle strutture alberghiere. Successivamente, si estende l'indagine alle tre dimensioni della sostenibilità, mantenendo lo stesso approccio basato sul genere e sul profilo di sostenibilità. Questo ulteriore step consentirà di valutare se vi siano differenze statisticamente significative tra i gruppi, offrendo una visione più articolata sulle percezioni e sui comportamenti della generazione Z in relazione alla sostenibilità nelle strutture alberghiere. L'obiettivo finale, come già ribadito nei paragrafi precedenti, è fornire una panoramica approfondita, supportata da analisi statistiche robuste, sulla relazione tra la generazione Z, la sostenibilità e le preferenze attribuite all'ospitalità alberghiera.

Nella Figura 1 sono presenti i risultati relativi alla valutazione dell'importanza, tramite una scala Likert (valori da 1 a 7), degli attributi legati all'ospitalità alberghiera.

Fig. 1: Attributi della scelta del servizio alberghiero



Dal grafico emerge chiaramente che vi è una valutazione media più elevata per i soggetti che si autodefiniscono sostenibili nella scelta dell'hotel. Ci sono aspetti interessanti da notare: il brand è chiaramente considerato più importante dalle rispondenti femminili. Inoltre, emerge chiaramente che le pratiche sostenibili attuate dall'hotel sono ritenute molto più importanti da coloro che si sono auto-definiti consumatori attenti alla sostenibilità nella scelta alberghiera. In una prospettiva generale, sono però gli attributi di base (qualità/prezzo, prezzo e pulizia) a ricevere le valutazioni più elevate da parte delle quattro categorie.

In seguito, è stata intrapresa una analisi per esplorare se le quattro categorie di individui presentassero percezioni diverse riguardo alle tre dimensioni della sostenibilità (RQ2). Inoltre, è stata considerata fin da subito la differenza di genere in modo da rispondere alla domanda di ricerca 3 (RQ3). È importante sottolineare che le tre dimensioni della sostenibilità sono state inquadrare all'interno del questionario attraverso una serie di attributi e domande. Da un punto di vista meramente statistico, date le evidenze di non normalità dei dati, confermate tramite il test di Shapiro-Wilk, si è deciso di adottare il test di Mann-Whitney U per l'analisi tra le categorie. Nella seguente tabella 2 sono presenti i risultati dei test, svolti per genere e autodichiarazione di sostenibilità.

Tab. 2: Test d'Ipotesi

Uomini Sostenibili Vs Uomini non sostenibili		
Dimensioni	U Value	P-Value
Sociale	U Value = 4256	0.09
Economica	U Value = 4258	0.09
Ambientale	U Value = 3855	0.007
Uomini sostenibili Vs Donne Sostenibili		
Dimensioni	U Value	P-Value
Sociale	U Value = 8118.5	0.009
Economica	U Value = 8508.5	0.04
Ambientale	U Value = 8049.5	0.007
Donne sostenibili Vs Donne non Sostenibili		
Dimensioni	U Value	P-Value
Sociale	U Value = 17306	< 0.0001
Economica	U Value = 17694	< 0.0001
Ambientale	U Value = 16397.5	< 0.0001
Uomini non sostenibili vs Donne non sostenibili		
Dimensioni	U Value	P-Value
Sociale	U Value = 10515	0.18
Economica	U Value = 10440.5	0.15
Ambientale	U Value = 10023	0.05

Dal test di Mann-Whitney U emergono risultati molto interessanti. Infatti, considerando uomini e donne sostenibili rispetto a non sostenibili della generazione Z, si osservano risultati divergenti. Gli uomini sostenibili valutano la dimensione sociale ed economica in modo praticamente identico agli uomini non sostenibili, mentre la valutazione della dimensione ambientale è statisticamente differente. Per le donne, invece, si registrano risposte statisticamente significative tra le due categorie e le dimensioni sono valutate in modo differente, ed in modo più elevato, dalle rispondenti che si sono auto dichiarate sostenibili nella scelta alberghiera.

Focalizzandoci sulle potenziali differenze di genere, sono stati svolti test sulle tre dimensioni della sostenibilità, tra uomini e donne sostenibili e non sostenibili. Dai risultati emersi, si nota una differenza significativa per tutte le dimensioni tra gli individui sostenibili, con un'apprezzabile rilevanza a favore delle donne, che valutano in modo differente e più elevato le tre dimensioni. Passando, invece, ai non sostenibili si rileva una non significatività per le dimensioni sociale ed economica e una debolissima significatività ambientale, sempre a favore del genere femminile. Di conseguenza, è possibile affermare che il genere rappresenti un aspetto molto rilevante in queste valutazioni, non generando un risultato univoco ma evidenziando percezioni differenti. In conclusione, è possibile affermare che il genere rappresenta una variabile importante nella percezione della sostenibilità (RQ3). Le donne che si auto-dichiarano sostenibili tendono a valutare con punteggi in media più elevati l'importanza degli attributi di scelta del servizio alberghiero rispetto agli uomini, d'altra parte, non manifestano grandi differenze tra sostenibili e non sostenibili. Al contrario, la parte del campione che si è autodefinita non sostenibile valuta le dimensioni tutte allo stesso modo siano essi uomini o donne. In merito alle dimensioni della sostenibilità ritenute più importanti dalla generazione Z (RQ2), si trova una prevalenza delle dimensioni Ambientale (5.34) e Sociale (5.33) con un lieve distacco per quella economica (5.09). Passando ad un'analisi delle dimensioni attraverso il genere, emerge la maggiore rilevanza dai punteggi femminili rispetto a quelli maschili e si ha lo stesso ordine di priorità del campione complessivo. Possiamo quindi concludere che la generazione Z percepisca in generale il ruolo della sostenibilità nella scelta del servizio alberghiero confermando i precedenti studi di Bohdanowicz (2005), Lee et al. (2010), Han et al. (2011), Millar and Baloglu (2011) and Verma and Chandra (2018). Tuttavia, la sostenibilità non risulta di certo quello più importante rispetto invece alla pulizia, al prezzo e al rapporto qualità/prezzo confermando in tal senso i precedenti studi di Dolicar and Otter (2003), Lockyer (2005) and Caber and Albayrak (2014).

Si nota per il genere femminile della generazione Z una particolare attenzione al brand che non era emersa in precedenti studi. Se però si considerano i precedenti studi su sostenibilità e generazione Z si nota come i forti valori e la forte attenzione nei confronti della sostenibilità non si traducano in effettive pratiche sostenibili. Questo risultato conferma gli studi di D'Acunto e Filieri, 2021; Parzonko et al., 2021; Giachino et al., 2022; Pinho & Gomes, 2023. Lo studio inoltre conferma un interesse maggiore nei confronti della sostenibilità del genere femminile confermando gli studi di Dragolea et al., 2023 anche considerando la scelta del servizio alberghiero (Han et al., 2011 e Wang et al., 2018).

Research limitations. I limiti di questa ricerca, focalizzata sulle pratiche sostenibili degli hotel e sull'importanza attribuita dai turisti, sono evidenti data la sua natura preliminare. Un aspetto rilevante è il focus sulla Generazione Z, che impedisce generalizzazioni su tutte le categorie di consumatori. La comprensione del concetto di sostenibilità, infatti, può variare tra generazioni, e l'estensione di tali conclusioni potrebbe richiedere indagini più ampie su altre fasce di età. Inoltre, lo studio si riferisce a giovani italiani e con un elevato grado di scolarizzazione (studenti universitari). Non si considera quella parte dei giovani che lavorano e che potrebbero presentare diversi approcci alla sostenibilità. Questi aspetti potranno essere superati proseguendo l'indagine ed estendendo il campione ad altre fasce di età, nazionalità e motivazioni di viaggio.

Managerial implications. I risultati del presente studio presentano utili implicazioni manageriali per i manager delle imprese alberghiere e dell'ospitalità. Comprendere la percezione e il ruolo del fattore "sostenibilità" nelle scelte di acquisto della clientela risulta di particolare importanza per sviluppare appropriati servizi e adeguate strategie di management e di comunicazione. In particolare, comprendere le peculiarità della generazione Z, che risulta una parte importante della clientela nel business turistico, è estremamente utile anche nelle sue differenti variabili di genere. Inoltre, tali aspetti si dimostrano utile anche per gli altri attori del settore turistico quali i trasporti, la ristorazione e i policy maker nella definizione delle proprie politiche di sviluppo.

Originality of the paper. Lo studio esamina il ruolo della sostenibilità nelle scelte del servizio alberghiero della generazione Z. Rispetto ad altri studi, i risultati raggiunti contribuiscono alla letteratura sul tema esplorando un fattore ancora poco preso in considerazione: la sostenibilità, considerata nelle sue tre dimensioni (ambientale, economica e sociale) e non come spesso accade esclusivamente nella sua dimensione ambientale. Inoltre, non sono molti gli studi che cercano di comprendere le dinamiche di scelta del servizio alberghiero sulla base della generazione e del genere. Per queste ragioni lo studio offre una preziosa interpretazione dei fattori alla base del comportamento d'acquisto dei consumatori della generazione Z offrendo anche vari spunti di riflessione.

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Data-driven Strategic Process in the Hospitality Industry: Studying Hotel consumers' purchase intention through web analytics.

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Abstract

This study investigates the transformative impact of data-driven strategies on the hospitality industry, with a specific emphasis on the utilization of big data for measuring consumer purchase intention. Through the utilization of big data, hospitality firms may depict detailed customer profiles, forecast demand patterns, and enhance service quality, thereby optimizing resource allocation and sustaining competitiveness. This research particularly examines the relationships among trust, brand orientation, and engagement attitude concerning online purchase intention among hotel consumers, employing Partial Least Square Structural Equation Modeling (PLS-SEM) on web analytics data. Leveraging web analytics tools such as Google Analytics enables firms to quantify customer purchase intention and subsequently acquire insights to enhance the efficiency and effectiveness of their strategic decision-making processes. Although the primary focus of this study is on the hospitality industry, its findings bear relevance for other industries as well. Indeed, in the contemporary complex environment characterized by pervasive Internet usage, an increasing number of firms operating in various industries are increasingly challenged to develop data-driven strategies to reach, maintain and renew their competitive advantages.

Key words: Google Analytics, PLS-SEM, Hospitality Management, Consumer Behaviour

Framing of the research. *This research delves into the transformative impact of data-driven strategies on the hospitality industry, with a focus on utilizing big data to gauge consumer purchase intention.*

Extant research highlighted the complex interdependencies within the tourism industry, which led to the emergence of both competitive challenges and collaborative opportunities, especially in destination management and marketing contexts. At the same time, several scholars underscore the tourism industry's role as an economic catalyst, influencing GDP, employment rates, and investment attractiveness.

Accordingly in recent years, there has been a significant surge in strategic management scholarly interest within the hospitality and tourism industry with particular emphasis on critical issues such as environmental uncertainty and strategic decision-making.

"Smart" firms (Buhalis, 2019) leverage interconnected technologies to innovate processes and maximize stakeholder value. In this context records of data play a crucial role in enhancing service customization and consumer engagement, thereby fostering brand loyalty. By harnessing information from various sources, firms in the hospitality industry can create detailed customer profiles, anticipate demand trends, and enhance service quality (Ghalekhondabi et al., 2019).

According to Kaur (2021), web analytics, notably Google Analytics, are viewed as essential tools for understanding customer behaviours and improving website performance. These tools facilitate the creation of personalized user experience and enhance brand loyalty.

This study aims to illustrate how the utilisation of web analytics data can help firms in measuring customer purchase intention. By doing so, firms make their strategic decision-making processes more efficient and effective.

Purpose of the paper. *Personalized marketing is crucial for firms seeking to engage and retain customers, particularly in the hospitality industry. By harnessing big data, and gaining insight into customer preferences and behaviours, hotels, airlines, and destinations can tailor targeted communication and advertising that resonates with their audience (Mnyakin, 2023).*

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Duan et al. (2019) argue that big data and artificial intelligence (from now on AI) can significantly enhance organizational learning and decision-making effectiveness. With the increasing influence of big data and AI, firms are using predictive analytics to optimize sales, develop advertising campaigns, and personalize marketing messages. This technology enables businesses to identify target consumers, predict their reactions to marketing efforts, and improve overall service quality by understanding the reasons for product popularity among consumers.

An increasing number of scholars (Cantoni et al., 2011) have drawn their attention to scrutinizing hotel online purchase intention. Critical antecedent of purchase intention are considered information quality, website quality, perceived price, brand and trust (Law and Hsu, 2005; Rong, et al., 2009)

The process of consumer purchasing is affected by a multitude of factors, encompassing personal, psychological, social, and cultural aspects. Social factors, like group dynamics and social status, can influence consumer responses, while personal factors such as age and economic situations also play a significant role. Additionally, psychological factors, like motivation and perception, impact the consumer's decision-making process (Duffett, 2015).

In this context, the firm's brand positioning and awareness play a relevant role.

A brand is the unique identification of products or services offered to consumers, distinguished by factors such as name, symbol, or packaging design. Brand orientation is a strategic direction for achieving company goals, prioritizing customer satisfaction and growth. Well-managed brands can enhance customer satisfaction and value influencing buyer decisions and repurchase intentions. Brand awareness, a key indicator, involves consumer recognition and recall of brands within product categories. Previous research has established a positive relationship between brand orientation and financial performance (Ciunova-Shuleska et al., 2017) emphasizing the strategic role of brands in business success. Brand orientation involves aligning product development with brand advantages to achieve sustainable growth. Despite its introduction over two decades ago, brand orientation remains an emerging concept in brand management, influencing customers' online purchase intentions (Baumgarth et al., 2013).

H1: Brand orientation (BO) affect customers' online purchase intentions (PI)

Trust is fundamental in the online shopping model, rooted in consumer trustworthiness, security, and privacy. Various interpretations of trust exist, emphasizing its contextual sensitivity and the presence of vulnerability. Perceived trust is crucial in e-commerce, shaping consumer behaviour due to limited face-to-face interaction. In online shopping, trust is consumers' willingness to depend on others' actions, hoping for acceptable practices and promised products. It encompasses perceptions of retailers' ability, kindness, and honesty, mitigating uncertainties and psychological concerns about online transactions. Establishing online trust is crucial for long-term customer relationships and positive word-of-mouth, impacting purchasing decisions. However, trust issues persist, particularly regarding seller reliability and process security, deterring some customers from online shopping (Aziz et al., 2018). Trust plays a vital role in the hospitality industry as well, influencing consumers' confidence in online platforms and their reservations.

H2: Trust (TRUST) is a critical determinant of the purchase intentions (PI)

Consumers are more likely to engage in online purchase behaviour when they perceive online merchants as trustworthy, and feel confident about the online transactions process (Liu and Zhang, 2014). Online merchants should focus on having a long-term relationship with their customers by delivering trust and transparency. In e-commerce, customer relationships are pivotal for fostering repeat purchases and brand loyalty. Research by Chiu et al. (2009) highlights the significant impact of trust, ease of use, usefulness, and enjoyment from previous experiences on customers' repurchase intentions. Additionally, Khalifa and Liu (2007) emphasize the influence of factors such as after-sale service, transaction efficiency, security, convenience, and cost savings on repurchase intention.

Moreover, loyalty programs play a vital role in customer retention strategies, as Vinod (2011) suggests that it costs three times more to acquire a new customer than to retain an existing one. Tangible benefits from loyalty programs and emotional attachment to brands can drive customer purchases (Tanford et al., 2011), while customer dissatisfaction with website experiences can lead to negative reactions (Rheem, 2010).

Furthermore, the quality of products and services significantly impacts purchase intentions. Consumers, especially those who are quality-oriented, prioritize product excellence and expect online retailers to provide accurate information (Ling et al., 2010).

H3: Consumers tend to engage (Engagement) if they perceive the relationship as trustworthy (TRUST)

H4: Engagement affect the purchase intentions (PI)

We can therefore define brand trust as the feeling of security held by the consumer in his/her interaction with the brand, it is based on the perception that the brand is reliable and responsible for the interests and welfare of the consumer.

Scenario attitude is the consumer's mental simulation of the anticipated experience based on available information. It is influenced by perceived trustworthiness, brand orientation, and fear of uncertainty (Isa et al., 2020). Recognizing and addressing these factors can significantly impact consumers' online purchase intentions in the hotel booking context. This mental simulation can encompass various aspects, including the quality of the accommodation, amenities, location, and the overall experience they anticipate having during their stay.

H5: Scenario Attitude (SA) is affected by TRUST and BO

It is interesting to note that, fear of uncertainty can negatively influence scenario attitude (Isa et al., 2020). If consumers have concerns or doubts about the accuracy or reliability of the information provided, they may have more negative anticipations about their upcoming stay.

An examination of previous studies (Coleman et al., 2017) highlights that the fear of uncertainty and scenario attitude are two opposite latent factors that we can measure due to their relationship with brand orientation and trust and ultimately supporting the measurement of online purchase intention. Moreover, brand orientation and trust are closely related, when customers trust the e-vendor, they are more inclined to book directly through the website (Polites et al., 2012).

H6: Scenario Attitude (SA) influences Purchase Intention (PI)

Methodology. In our research, we chose to apply Partial Least Squares Structural Equation Model (PLS-SEM), which uses a composite-based approach (Jöreskog and Wold, 1982). PLS-SEM is considered efficient for small sample sizes and complex models, making no distributional assumptions and is widely used in the hospitality and tourism industry research.

Path models are visual representations used in structural equation modelling (SEM) to illustrate hypotheses and variable relationships. Constructs (latent variables) are depicted as hexagons, while indicators (manifest variables) are shown as rectangles; arrows represent relationships between constructs and indicators, with single-headed arrows denoting predictive or causal relationships in PLS-SEM (this representation is used to depict our model explained in the next session). A PLS path model comprises a structural (inner) model linking constructs and displaying relationships and measurement models (outer models) illustrating relationships between constructs and indicators. Error terms are associated with constructs and reflectively measured indicators, representing unexplained variance.

In hospitality and tourism research, the use of this model appears to be standard practice, because of many reasons, such as the dimension of the sample, and its different approaches: confirmatory, explanatory, predictive, descriptive, and exploratory, thus being more versatile than others (Ali et al, 2018).

Our estimation model treats the collected information as constructs to estimate latent variables related to guest buying activity. This approach differs from previous studies (Rosenman, Tennekoon, & Hill, 2011) that have relied on survey questionnaires to gauge consumer engagement, referring concerns over accuracy and response bias. Our research, instead, follows those scholars (Liu, Shin, & Burns, 2019) that have increasingly turned to analysing consumer engagement through behavioural data collected from the web and social media platforms as an alternative method.

Data were collected on Google Analytics G4 from a hotel in Palermo city centre, focusing on six months (July, 1, 2023 and December, 31, 2023) of web traffic on a daily bases from various sources, providing insights into the behaviour of approximately 145,000 visitors, with 57.7% being female and primarily from Europe, the United States, and other global regions (Fig.1).

In addition to web analytics data (Table 1), our estimation of scenario attitude incorporated metrics like the number of directly booked nights and the average booking window. The dataset comprised 888 observations and 10 items detailed in Table 2. To apply the model, we transformed data into a Likert scale from 1 (low visits or time) to 9 (high visits and time spent) (Xun, 2015), and we used the SeminR package in R Studio.

Fig. 1 - Gender and countries of origin of the visits



Table 1. Principle measures of touch points

Measure	Description
Visitors	Number of active users
Sessions	Number of sessions started on the website
Sessions with engagement	Number of sessions that last more than 10 seconds, generate a conversion event or register two or more visualizations of a page or screen.
Average time of engagement	Duration of engagement per user per session
Sessions with engagement per users	Number of sessions with engagement per user
Event per session	The average number of events per session
Engagement rate	Percentage of sessions with engagement
Number of events	Number of times in which users activate an event
Conversion	Number of times in which users activate a conversion event
Revenue	The sum of revenues from purchases, subscriptions, and advertising

Table 2: Indicators of the formatively measured constructs

Brand Orientation (BO)	
Bo_1	Visitors
Bo_2	Sessions
Bo_3	Sessions with engagement
Bo_4	Numbers of events
Engagement (Engagement)	
En_1	Average duration of the engagement
En_2	Sessions with engagement per visitor
En_3	Event per session
Trust (TRUST)	
Tr_1	Engagement rate
Scenario Attitude (SA)	
Tr_3	Total number of reserved nights
Tr_4	Average booking window.

The model that we have estimated was as follow:

$$PI = \beta_E Engagement + \beta_{SA} SA + w_{BO} BO + w_{Tr} TRUST + \varepsilon_{PI},$$

Where:

$$Engagement = \sum_{i=1}^3 \lambda_i^{En} En_i + \beta_{Tr} TRUST + \varepsilon_{En}$$

$$SA = \sum_{i=1}^2 \lambda_i^{SA} Tr_i + \beta_{BO} BO + \beta_{Tr} TRUST + \varepsilon_{SA}$$

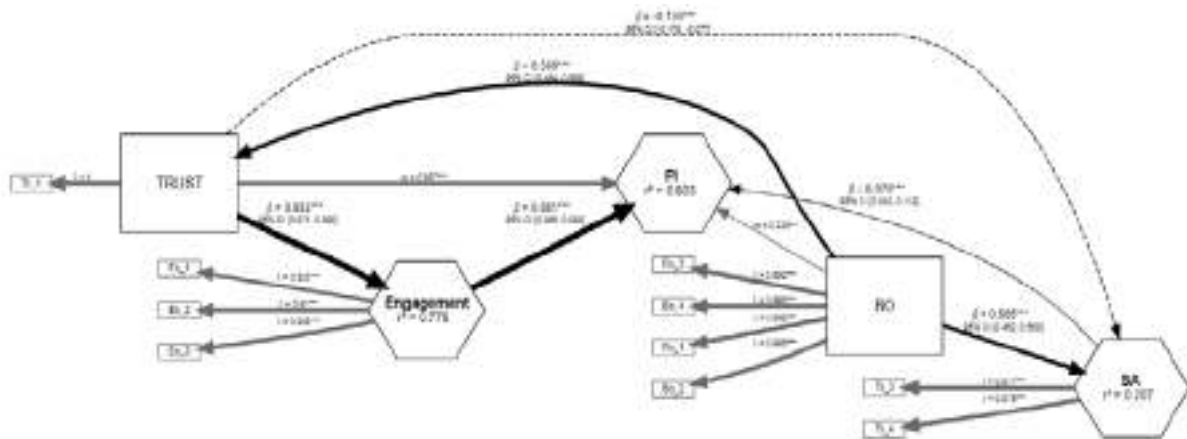
$$BO = \sum_{i=1}^4 \lambda_i^{BO} Bo_i + \beta_{Tr} TRUST + \varepsilon_{BO}$$

$$TRUST = \lambda^{Tr} Tr_1 + \varepsilon_{TRUST}$$

and $\lambda_i^{En}, \lambda_i^{SA}, \lambda_i^{BO}, \lambda^{Tr}$ are the loading factors, $\beta_E, \beta_{SA}, \beta_{Tr}, \beta_{BO}$ are the correlation weights, and w_{BO}, w_{Tr} are the regression weights.

Results. The estimated model (fig.2) shows that TRUST and BO are related positively with customers' PI (confirming H1) with respectively $w_{BO} = 0.225$ and $w_{Tr} = 0.867$, TRUST influences positively customers' Engagement (confirming H3) with $\beta_{Tr} = 0.883$ and the latter has effect on PI (confirming H4) with $\beta_E = 0.881$. In the model, the path coefficients show that SA has influence over PI (confirming H6) even if it shows a poor effect with $\beta_{SA} = 0.028$ and that TRUST is related to SA with $\beta_{Tr} = -0.126$ and to BO with $\beta_{BO} = 0.505$ (H5). The negative effect of TRUST on SA could be intended as the presence of a certain fear about the future in the market but, as we can see from the correlation weight, in any case has a poor impact, for this hotel on the intention of making a reservation.

Fig. 2 – Estimated model



*Hexagons are latent variable, Rectangles are manifest variables, Arrows represent relationships

As far as concerns the model's explanatory power (Shmueli & Koppius, 2011), R^2 represents the variance explained in each of the endogenous constructs. Our model can explain in a substantial way (Hair, Ringle, & Sarstedt, 2011) PI ($R^2 = 0.803$) and Engagement ($R^2 = 0.779$), while it explicates weakly SA ($R^2 = 0.207$) and TRUST ($R^2 = 0.256$).

In the applied model, all the formative weights (Table 3) are significant at $\alpha = 5\%$ with t-values that are all above 1.960, so far, the bootstrapped loadings (Table 4) are clearly above 2.576, suggesting that all indicator loadings are significant at a level of $\alpha = 1\%$ and showing that we acted in the right way considering all of them in the formatively constructed.

Table 3 – Formative weights

	Original Est.	Bootstrap Mean	Bootstrap SD	T Stat.	2.5% CI	97.5% CI
Tr_1 -> TRUST	1.000	1.000	0.000	.	1.000	1.000
Bo_1 -> BO	0.247	0.247	0.001	174.302	0.244	0.250
Bo_2 -> BO	0.248	0.248	0.001	216.459	0.246	0.250
Bo_3 -> BO	0.258	0.258	0.002	114.163	0.254	0.263
Bo_4 -> BO	0.252	0.252	0.001	240.664	0.250	0.254
Tr_3 -> SA	0.524	0.522	0.007	78.110	0.509	0.534
Tr_4 -> SA	0.501	0.501	0.006	85.916	0.490	0.514
En_1 -> Engagement	0.268	0.267	0.008	33.200	0.251	0.281
En_2 -> Engagement	0.466	0.466	0.011	43.400	0.446	0.488
En_3 -> Engagement	0.379	0.380	0.006	66.346	0.370	0.391
BO -> PI	0.225	0.225	0.021	10.942	0.185	0.263
TRUST -> PI	0.867	0.867	0.015	57.732	0.837	0.895

Table 4 – Bootstrapped Loadings

	Original Est.	Bootstrap Mean	Bootstrap SD	T Stat.	2.5% CI	97.5% CI
Tr_1 -> TRUST	1.000	1.000	0.000	.	1.000	1.000
Bo_1 -> BO	0.995	0.995	0.001	1.531.252	0.994	0.996
Bo_2 -> BO	0.996	0.996	0.000	2.040.625	0.995	0.997
Bo_3 -> BO	0.992	0.992	0.001	758.730	0.989	0.994
Bo_4 -> BO	0.996	0.996	0.000	2.412.727	0.995	0.997
Tr_3 -> SA	0.977	0.978	0.005	204.723	0.968	0.987
Tr_4 -> SA	0.975	0.976	0.005	181.908	0.966	0.986
En_1 -> Engagement	0.823	0.821	0.017	47.608	0.789	0.850
En_2 -> Engagement	0.910	0.911	0.006	164.544	0.900	0.921
En_3 -> Engagement	0.938	0.938	0.005	191.728	0.928	0.947
BO -> PI	0.664	0.664	0.026	25.804	0.617	0.713
TRUST -> PI	0.981	0.981	0.004	270.981	0.974	0.987

Furthermore, the model can be considered reliable (Table 5) as a matter of fact that all the measures are higher than their recommended level and even if the Cronbach's alpha for PI is almost equal to 0.7, we can consider it reliable as stated also by Lee et al (2011).

Table 5 – Reliability

	alpha	rhoC	AVE	rhoA
TRUST	1.000	1.000	1.000	1.000
Engagement	0.874	0.921	0.795	0.930
SA	0.950	0.976	0.953	0.952
BO	0.996	0.997	0.990	0.997
PI	0.673	0.819	0.702	1.000

Research limitations. This research shows two main weakness and limitations. On one side we have to consider the principal limitations of the model itself and on the other side we have to consider the principal weakness of this industry regarding big data analysis and use.

The hospitality industry collects everyday a big amount of data that for sure need to be protected, stored and analysed in a way that they can offer a clear and deep knowledge to managers about markets, trends and so on. In such context we cannot forget one of the main weaknesses of the hospitality industry. As stated by many scholars (Hjalager, 2010), the size of many tourism firms (primarily small family business) does not guarantee an easy access to technology and to the analysis of such vast amount of data. Pahus and Sunesen (2022) emphasize that size matter as usually larger companies are more capable of harvesting the full potentials of the information contained within big data. Conversely, small firms often lack the required competencies to strategically work, utilize and leverage this data. Further, as stated by Mariani and Baggio (2022) most of the time scholars predominantly focus on descriptive and exploratory analytics, with less attention given to predictive analytics. This weakness meets one of the main limitation of the model. Because of the complexity of the construct model it was not possible to use it to forecast the future consumers' behaviour, even though PLS-SEM has been introduced as "casual-predictive approach" to SEM (Jöreskog & Wold, 1982) particularly appealing for research in fields that aim to derive recommendations for practice. Further, another limitation of PLS-SEM includes its inability to handle non-recursive models containing causal loops or circular relationships between latent variables.

Managerial implications. Having the possibility of measuring consumer's purchase intention through the data that customers put on stage, with their daily behaviour in the web, means to develop selling and marketing operations that are not just reactive but rather proactive. Managers have the possibility to adapt their communication strategies and enhance their touch points to significantly reach their target market, increasing their trust and therefore their engagement and their purchase attitude.

Personalized marketing is a powerful tool that hotels can use to increase customer loyalty, revenue, and differentiate themselves from their competitors. With the help of big data, hotels can analyse customer data to gain insights into customer preferences and purchase behaviour, enabling them to create targeted advertising campaigns that resonate with their customers (Mnyakin, 2023).

Köseoglu et al. (2018) identified seven factors crucial for strategic decision execution in the hotel industry, including planning, organization structure, implementation process, communication, resistance, motivation, and employee career planning. During crises such as the Covid-19 pandemic, decision-making and strategy implementation become even more challenging, highlighting the relevance for managers to improve strategic processes to be prepared for extreme circumstances.

Köseoglu et al. (2020) found that managers often perceive strategy as limited to planning, with formulation and implementation viewed as complementary practices.

In the contemporary business environment, strategic orientations have gained prominence, emphasizing the dissemination of strategic thinking throughout the organization. Strategic orientation provides broad guidelines for strategy, guiding firms in aligning resources to exploit market opportunities.

Forecasting is indispensable in the hospitality industry for pricing, resource allocation, and service planning (Ghalekhondabi et al., 2019). Managers and entrepreneurs rely on forecasts to anticipate industry trends based on available information and prior expertise. However, forecasting behaviour is subject to influence from new information, leading to updates in beliefs and forecasts over time. Utilizing web analytics to evaluate the customer experience enables managers to adapt resource utilization efficiently and respond to market changes effectively, thereby minimizing waste of resources and enhancing competitiveness.

Originality of the paper. Our model serves as an example of the kind of information that can be extracted from the big amount of data generate by a hotel on a daily basis. Managers should recognize the value of this knowledge as it is critical for developing strategies, planning future business advancements, and optimising the use of their resources. Furthermore, in a rapidly evolving and competitive industry, knowing the guest's path and her/his level of trust can be crucial for tailoring more customized product and services.

When discussing smart hospitality⁵, it is critical to consider the firm's extended ecosystem, as hospitality operates within complex networks and value chains, collaborating dynamically with various partners and the broader environment

⁵ Buhalis (2019) defines "smartness" as a transformative revolution driven by innovative technologies, emphasizing optimizing networks and ecosystems for collective agility and value co-creation. It leads to business process reengineering, innovative approaches to value co-creation, and enhanced industry sectors. In hospitality, smartness benefits hotel properties by increasing

(Buhalis and Leung, 2018). Leveraging big data and AI-enabled tools allows revenue and hospitality management to adopt more comprehensive, science-based predictions, incorporating scenario analysis, decision support, and yield management.

The integration of real-time data with voluntarily surrendered or surreptitiously collected preferences allows properties to offer individualized, contextualized services tailored to customer needs, enhancing operational efficiencies by proactively managing resources like staff, energy, and building management through intelligent systems.

Additionally, AI-driven supply chain management can analyse operational data to optimize inventory management, purchasing, and replenishment levels, driving efficiencies. Big data aids in identifying critical contextual information, behaviour patterns, and preferences, facilitating the development of adaptive solutions and profitable operations that meet user requirements (Buhalis and Foerste, 2015).

Smart hospitality has access to various data sources, including guest's data, internal departments, external partners, and local contextual factors. This agility in researching diverse information dynamically encompasses internal business data, customer profiles, destination statistics, location-based data, and social media content (Buhalis and Foerste, 2015).

It is worth noting that while this study primarily focused on the hospitality industry and hotel firms, its findings hold significance for other industries as well. In today's complex environment, characterized by widespread of the Internet usage (websites, social media and so on) industries are increasingly challenged to develop data-driven strategies to reach, maintain and renew their competitive advantages. Deeply understanding and measuring consumers' purchase intention allow firms to proactively respond to market needs, by anticipating needs and behaviours. Identifying "the right customer to sell the right product at the right moment" is not just a dictat for the hospitality industry but for any firm that is facing complex environment.

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efficiency, streamlining operations, enhancing customer satisfaction, and improving profitability. This is achieved through access to accurate, real-time data for precise customer targeting and ecosystem insights in sales and marketing.

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Unveiling Museums' Online Reputation. The Case of the Uffizi Galleries

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Abstract

The museum's reputation is a crucial intangible asset that enables it to stand out in a competitive environment by influencing perceived organizational effectiveness and attracting resources. Specifically, reputation impacts the attitudes of potential visitors towards visiting the museum and the perspectives of donors and sponsors towards funding cultural activities.

With the rise of the Internet and the subsequent proliferation of online newspapers, social media, blogs, forums, and information-sharing platforms, the concept of reputation has expanded into the digital realm. Online conversations serve as proxies for public opinion and, consequently, for online reputation. Therefore, analyzing online public discourse can provide essential insights into the community's perceptions of online reputation.

Despite the significance of offline and online reputation for a museum's sustainability, the literature on this topic is still in its early stages. To address this gap, this research presents a preliminary exploration of the literature on museums' reputation with a twofold objective: (1) review the literature debate on reputation and museums' online reputation; (2) construct a framework from the literature review for exploring the online reputation of the Uffizi Galleries, one of the most visited museums in Italy, located in the city of art of Florence.

This research contributes empirically to the literature on museum management, shedding light on the concept of reputation as an intangible capital crucial for a museum's perpetuation of its mission and sustainability. The findings hold implications for museums' communication strategies, emphasizing how increased online visibility through institutional communication can influence their reputation. Finally, it underscores the importance of measuring and managing a museum's reputation for its sustainability, influencing potential visitors' decisions and donors' and sponsors' attitudes towards funding cultural activities.

Key words: reputation; online reputation; museums; Uffizi Galleries; Florence; city of art

Framing of the research. *The concept of reputation is gaining significance across various organizational categories, encompassing firms, nonprofit organizations, and cultural entities, particularly in light of technological advancements, shaping strategies, communication, and decision-making processes. For cultural institutions like museums, reputation assumes importance due to its potential influence on perceived organizational efficacy and resource attraction (Padanyi & Gainer, 2003; Mitchell, 2015). Specifically, the museum's reputation impacts the inclinations of potential visitors to engage with its offerings and influences the decisions of donors and sponsors regarding financial support for cultural endeavors (DiMaggio, 1986; Frey & Meier, 2006; Bennett, 2017; Camarero et al., 2023). Museums are increasingly prioritizing brand and reputation management to cultivate positive associations and differentiate themselves within competitive landscapes. In this context, online communication emerges as a crucial tool for audience engagement, visit planning, donor attraction, and stakeholder relationship building.*

Despite extensive discourse in the literature, a shared definition of reputation remains elusive. One prominent definition in managerial studies characterizes reputation as "a perceptual representation of a company's past action and future prospects that describes the firm's overall appeal to its key constituents when compared to other leading rivals" (Fombrun, 1996, p. 72). This definition, further expanded upon by various scholars, recognizes that reputation can be associated with stable and long-lasting perceptions both from external and internal stakeholders, difficult to manipulate and control by the organization and leading to comparisons with others (Wartick, 2002; Brown et al., 2006; Rhee & Haunschild, 2006; Walker, 2010).

With the advent of the digital revolution, the notion of reputation has extended to encompass the online dimension through terms such as "online reputation", "digital reputation", "web reputation", "social media reputation" and "e-

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reputation” (Cooke et al., 2022). Online reputation pertains to the ‘stakeholders’ perceptions of the organization, communicated via online platforms and social media based on their experiences (Reuber & Fisher, 2011; Diana-Jens and Ruibal, 2015).

In the context of museums, reputation serves as a fundamental element of intangible assets, facilitating differentiation in competitive environments (Solima, 2022). Van Riel (2019) posits that museums can enhance their reputation by emphasizing familiarity, historical significance, and their impact on the reputation of the city and country in which they are located. To bolster familiarity, museums can employ targeted, direct, and dialogical communication strategies. Within this framework, online communication assumes pivotal importance for museums in audience development and stakeholder engagement. Online channels serve as platforms for museums to connect with current and potential visitors, supporters, partners, and so on (Mateos-Rusillo, 2019). This digital dimension of reputation is underscored by stakeholders sharing their museum experiences through online reviews, blogs, and comments, thereby influencing collective perceptions of reputation. Consequently, museums utilize online institutional communication not only to foster audience growth but also to shape stakeholder perceptions regarding their actions and prospects, thus contributing to their reputation. Online presence, coupled with visibility, thus emerges as a key determinant shaping the collective perception of reputation over time.

Purpose of the paper. Although offline and online reputations hold significant importance for museums, research in this domain remains still in its early stages. To address this gap, this research presents a preliminary exploration of the literature on museums’ reputation with a twofold objective: (1) review the literature debate on reputation and museums’ online reputation; (2) construct a framework from the literature review for exploring the online reputation of the Uffizi Galleries, one of the most visited museums in Italy, located in the city of art of Florence. The Uffizi Galleries represent one of the oldest museum complexes in the world and group together the historical art collections of the Medici family. It is a state museum that in 2015 gained special autonomy. It has five museum sites - the Uffizi Gallery, the Drawings and Prints Cabinet and Library, the Palazzo Pitti Museum, the Vasari Corridor, and the Boboli Gardens – located in the UNESCO area of the city of Florence. Since 2016, the Uffizi has been provided by the director with a new department dedicated to IT and Digital Strategies. According to data from the Italian Ministry of Culture, the Uffizi Galleries was the most visited state museum institution in Italy in 2021 and counted the highest number of followers on social media in 2021 and 2022. Adding up all social channels - Facebook, Instagram, Twitter, and TikTok - the ‘Galleries’ followers exceeded one million in December 2022, with an increase of 12.8% compared to 2021 (Il Giornale dell’arte & The Art Newspaper, 2023). Considering these characteristics, recently, it was the object of analyses and research devoted to understanding digital strategies and changes in the organization over time (Lazzeretti et al., 2024; Giusti, 2024). Based on such consideration, the Uffizi Galleries can represent a valuable case study for investigating its online dimension, visibility, image, and ultimately, reputation.

Methodology. The present research focuses on the reputation of the Uffizi Galleries by analyzing the online public discourse using text mining techniques via Python. Based on the definition of reputation and online reputation, the research develops an exploratory analysis for investigating the mental associations that external international audiences have concerning the Uffizi Galleries. The source of data was a highly relevant international newspaper, namely The New York Times.

The newspaper was chosen over other online media channels because it shapes collective and individual perceptions through the priming of existing schematic representations, the development of new representations, the integration with broader schemata or in more general narratives, indirect influence through selective re-telling in social interactions, and is a proxy for public opinions (DiMaggio et al., 2013). Moreover, empirical analyses show that media coverage records and influences public knowledge and can influence organizational reputation (Deephouse, 2000). Finally, in the literature, several contributions analyze The New York Times articles to explore the public perceptions and opinions, specifically regarding the image and reputation perceptions (Dennis, 2002; Shi et al., 2023).

The dataset of articles considered consists of $n=143$ articles published from January 1, 2016, to December 31, 2023, retrieved using the keyword “Uffizi” searched in the articles’ text. The initial date coincides with the starting of the new organizational structure related to the museum’s autonomy, while the final date coincides with the ending of the first director’s mandate. The database was established through web scraping techniques, i.e., “automated extraction of information online” (Luscombe et al., 2022), via Python programming language and, specifically, the Selenium library. Such techniques are used by various disciplines within the social sciences, such as economics (Massimino, 2016; Cavallo, 2018), organization (Braun et al., 2018), policy (Caruana-Galizia & Caruana-Galizia, 2018; Hayes & Scott, 2018) and communication (Possler et al., 2019) for collecting big amounts of data from online sources. For each article, using the data scraping technique, the following information was obtained: the title, the date of publication, the link to the article, and the body of the article.

As the digital text collected counted a large amount of data, automated methods were supposed to be the most useful methodology to analyze it. In particular, text mining techniques can be employed to derive reputation perceptions from textual content (Ghose et al., 2009; Amigó et al., 2013) using different methods (Rodríguez-Vidal et al., 2021). One of the most diffused text mining techniques is topic modelling, which consists of probabilistic models used to automatically discover topics in a corpus of texts in digital format (Blei et al., 2003). What it is possible to get from these algorithms, regardless of the model used, are two outputs: the probability that a word belongs to a certain topic and the probability that this topic emerges from a certain document.

Latent Dirichlet Allocation (LDA) is the most widely used topic modelling technique and allows the exploration of the latent structure of textual corpora. Topics are “latent” because they are not explicitly reported by the text author (Saxton,

2018). The LDA algorithm iterates through the text and records patterns of co-occurrences in an unsupervised manner. It is thus a technique designed to capture novel and emergent ideas and cognitive content in general. This is because they reveal the conceptual relationships in the textual data, as the language used in documents represents their cognitive content (Whorf, 1956).

Firstly, the text (including both the title and the body of the article) was pre-processed using classical text mining techniques procedures to make it analyzable by the computer program. For the text pre-processing phase, the following Python libraries were used: NLTK, Pandas, Scikit-learn and NumPy.

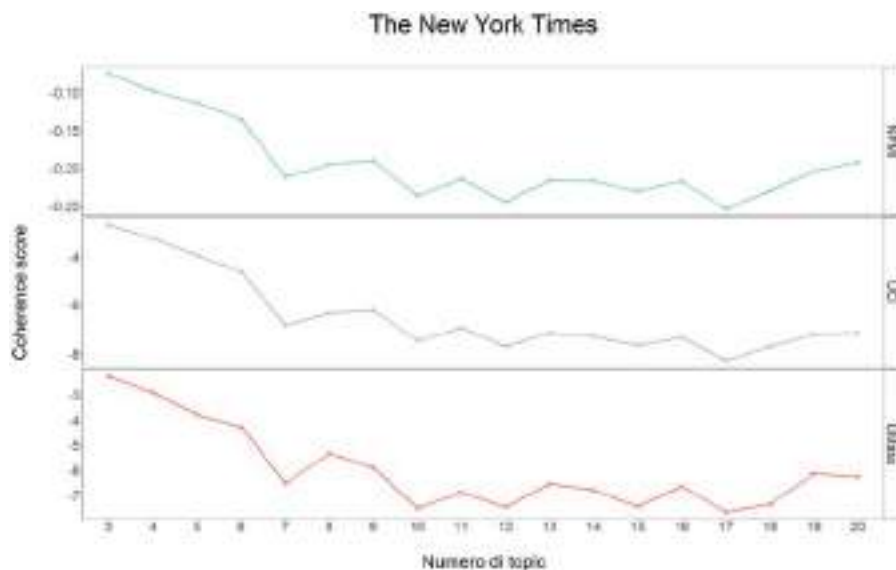
More specifically, the text pre-processing involved the following steps:

- The text was converted to lowercase in order to avoid redundancy;
- Stopwords were removed (words that occur with high frequency but have little semantic content);
- Stemming, or vocabulary reduction, achieved by replacing words (tokens) with their own root (suffix removal);
- special characters, numbers, short tokens (words with one or two characters), and extra whitespace were removed;
- The tf-idf analysis was conducted, which assigns greater weight to words that are important in a specific document but uncommon in the entire document collection (Salton & McGill, 1983). The words with a tf-idf lower than 0.01, a threshold commonly considered significant for analysis, were removed;
- Finally, words tokenization was processed, which consisted of taking the single words as a unit of analysis.

After the pre-processing of the text, the final database was composed of 106 news articles.

Gensim was the library mainly used to conduct the subsequent steps of the analysis. As LDA algorithm is unsupervised, it was necessary to select a number of topics for the algorithm to find. To do that, coherence measures were calculated, which provide the degree of semantic similarity among words with the highest values (in the case of the LDA model, membership probability) in a topic. Thus, they indicate how well those words support the topic to which they belong. The higher the consistency, the more meaningful the topic. These measures have been shown to have a high degree of correlation with manual classifications of words to topics made by human evaluators. The three most used coherence measures were calculated in order to compare their results and select the best one: Normalized Pointwise Mutual Information (NPMI), Pointwise Mutual Information (UCI) and Umass (Röder et al. 2015). We selected 9 topics, as less than 6 topics were considered too limited (Figure 1).

Figure 1. Number of topics and coherence score. Source: authors' elaboration



Then, we applied the LDA algorithm, calculating the “eta” values per word, which represents the probability of each word per each topic.

Since the obtained structure of topics is latent, the algorithm does not automatically label the distribution of topics. Therefore, we proceeded to interpret and label the topics manually (Mohr & Bogdanov, 2013). Finally, to limit the confirmation bias and allow triangulation of the data, the results of the analysis were compared with data and information collected by primary sources – 13 interviews with managers and staff of the Uffizi Galleries and a period of participant observations in the institution – and secondary sources – specifically report on the museum visitors, website and social media.

Preliminary Results. Based on the analysis of the literature and the reputation and online reputation concept, the analysis identified the mental associations that external audiences have of the Uffizi through the identification of the main topics of discussion within The New York Times’s articles.

From the topic modelling analysis, the following topics have emerged: the use of new technologies by the museum complex, the issue of queues to access museum spaces, the case of environmentalist protests in museums, the relationship and comparison with the Louvre in Paris, the Italian State Museums Reform for give autonomy to the Galleries (Riforma

Franceschini), artworks stolen by the Nazis, the restoration function, temporary exhibitions, and the relevance of the museum complex's heritage, famous and representative of Italy. The results can be seen in Table 1.

Table 1. Results of topic modelling on The New York Times dataset..

Topic 1 "Digital Technologies"		Topic 2 "Queues at the entrance"		Topic 3 "Environmental activists"		Topic 4 "Relationship with the Louvre"		Topic 5 "Franceschini Reform"		Topic 6 "Stolen artworks during the war"		Topic 7 "The restoration function"		Topic 8 "Loans of works of art"		Topic 9 "Importance of the museum's collection"	
Word	Eta	Word	Eta	Word	Eta	Word	Eta	Word	Eta	Word	Eta	Word	Eta	Word	Eta	Word	Eta
work	0.016	wait	0.040	protest	0.014	lisa	0.025	italian	0.017	paint	0.021	restor	0.020	botticelli	0.031	paint	0.016
galleri	0.014	tell	0.020	citi	0.014	mona	0.024	cultur	0.016	verrocchio	0.018	art	0.014	draw	0.018	galleri	0.013
artist	0.013	peopl	0.015	london	0.010	art	0.021	director	0.016	artist	0.012	itali	0.014	art	0.018	work	0.012
collect	0.012	king	0.015	sunflow	0.010	galleri	0.015	itali	0.016	german	0.009	artist	0.014	paint	0.016	art	0.012
art	0.012	stori	0.015	itali	0.010	louv	0.014	reform	0.011	germani	0.009	artwork	0.014	schmidt	0.014	itali	0.011
nft	0.011	line	0.010	gogh	0.010	paint	0.014	art	0.011	world	0.009	botticelli	0.007	artist	0.011	famous	0.008
visit	0.009	past	0.010	soup	0.010	think	0.009	michel	0.010	stolen	0.009	galleri	0.007	includ	0.009	restor	0.008
ostiglio	0.009	statu	0.010	van	0.010	visitor	0.009	minist	0.010	design	0.009	renaiss	0.007	work	0.009	women	0.008
world	0.007	walk	0.010	jar	0.010	work	0.008	foreign	0.010	medici	0.009	institut	0.007	figur	0.008	state	0.007
selfi	0.007	watch	0.010	work	0.007	peopl	0.008	ministri	0.009	renaiss	0.009	world	0.007	show	0.008	leonardo	0.007

Source: authors' elaboration

Regarding the first topic, the use of new technologies by the Uffizi, words related to the digitization of the Galleries' art collections have emerged, particularly for the creation and sale of NFTs. Then there is the word "selfi" which is the root of "selfie" related to the use of social media by visitors and the museum complex itself, including in relation to influencers who take photos in front of the artworks. The second topic concerns the queues that form for entry into the Uffizi. The words connected to this are "wait", "line", "people". Other words are linked to a particular article about how the author-journalist skipped the line feeling like a "king" while people "watched" him. The third topic is about environmentalist protests targeting cultural heritage to convey messages against policies that do not help reduce pollution and the destruction of nature. Protests of this kind have occurred both at the Uffizi and other major museums, such as the National Gallery in London, where Van Gogh's "Sunflowers" painting was hit with soup. Words related to this episode are found within the identified topic. The fourth topic concerns conceptual proximity and, thus, the comparison between the Uffizi Galleries and the Louvre. For example, we can find words related to Leonardo's Mona Lisa. The fifth topic is about the Franceschini Reform, the reform carried out by the Italian Government in 2014 for the reorganization of the Italian Ministry of Culture and its affiliated museums. Among these is the Uffizi monumental complex, which has seen a significant reorganization of its structure and a new figure of the director at its head, with significant decision-making autonomy in its management. The sixth topic emerged concerns the theme of artworks stolen from the Uffizi collections by the Nazis during World War II. Director Eike Schmidt indeed fought for the return of a painting that the owning family did not want to return to the museum despite requests from the Italian State. The seventh topic concerns the fundamental function of restoring works from the collection, with reference to those by Botticelli. The eighth topic is about temporary exhibitions, such as the "Botticelli Drawings" exhibition at the Department of Drawings and Prints of the Fine Art Museums of San Francisco, to which the Uffizi lent numerous works. Finally, the ninth topic reflects on the importance of the artworks and paintings of the Uffizi, which are representative of Italian heritage and are famous worldwide.

From a general perspective, preliminary results of the analysis show that the mental associations of external audiences concerning the Uffizi Galleries emerged from the analysis of The New York Times article pertain to several categories. Firstly, some topics that constitute the museum's reputation relate to traditional aspects of museums' management. These topics involve discourse on the valuable collections belonging to the museum, the interest in artwork restoration and specific temporary exhibitions, and the comparison with other important international museums, such as the Louvre. Moreover, some critical aspects emerge related to the visitors' management, especially regarding long waiting times in line to enter the museum. Secondly, other relevant topics closely related to the contemporary role of museums in society emerge, such as the use of digital technologies, the theme of environmental activism and the role of museums, and the impact of war on artworks belonging to all of humanity. The results from the text mining analysis are confirmed by the qualitative analysis, particularly by the content of interviews with managers and staff. As has emerged from interviews, these topics are felt to be central to the museum, which aims to position itself as a stimulator and space for sharing reflections on important social themes through its own collection, which serves as a catalyst.

Research limitations. The research presents several limitations. First, a single newspaper cannot be considered exhaustive in representing the reputation of the Uffizi Galleries and, thus, all perceptions expressed in public discourses. Further research will consider data coming from other newspapers, social media platforms, forums, and review platforms to have a more complete view of the different forms of public discourses and audiences. Moreover, in terms of the chosen methodology, sentiment analysis of the considered texts was not conducted, which could provide information on how the identified themes contribute positively, neutrally, or negatively to the museum's reputation. Future research, in line with what has emerged in the literature on the detection of organizations' online reputations, can address these limitations.

Managerial implications. The museum's online activities and the online public discourse play an important role in constructing the organization's reputation. Reputation can be considered a strategic asset for organizations, even museums, in order to increase their competitive advantage. Measuring and managing a museum's reputation, in fact, may increase potential visitors and influence the donors' and sponsors' attitudes towards funding cultural activities. Monitoring and evaluating online public discourse through newspapers and mass media may constitute a strategy for

identifying the main attributes associated with the organization and assessing the sentiment of public opinion on the organizational reputation. Monitoring online newspapers allows organizations to understand public sentiment and proactively manage their reputation, by identifying emerging issues or negative perceptions in advance and implementing corrective actions promptly to mitigate potential damage to their reputation. Moreover, cultural organization and museums can trace the contents that resonate in the public debate and develop strategies to increase their visibility, with consequences on their performance in terms of visitors and revenue.

Originality of the paper. Although several researchers have underlined the importance of the reputation concept for organizations, few empirical analyses have been devoted to exploring the topic in the context of museums (Chung et al., 2019; Van Riel, 2019; Fernández-Hernández et al., 2021). The originality of the research can be traced both for the theoretical discussion and the empirical application. Concerning the theoretical discussion, the research is original in the tentative of merging the theories of reputation in management and organizational studies with the studies of museum management. Moreover, in empirical terms, the research enlarges the debate on museum reputation with an original study on the Uffizi Galleries reputation, using an original dataset constructed ad hoc for the analysis. Previous research on the Uffizi Galleries and the digital dimensions was interested in investigating the museum business model and digital strategy. To the best of our knowledge, no previous studies of museum organizations apply text mining, and in particular topic modelling, for assessing the reputation of museums using data from online newspapers.

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Cruise ship size and public perception: An explorative study on X

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Abstract

In a cruise industry where ship size has constantly increased, together with the number of attractions on board, the purpose of this article is to explore public perceptions and feelings when facing with mega vessels and understand whether negative effects related to a mass and crowded experience prevail over the positive effects linked to the greater variety of activities, facilities, and experiences offered by these vessels.

To explore public perceptions, a sentiment analysis and an emotion detection were carried out, adopting a lexical approach, on the posts published by users on social media X, in the month following the official debut of the world's largest cruise ship: Icon of the Seas, of Royal Caribbean International (RCI).

The results reveal a particularly positive public sentiment toward the vessel and the presence of particularly favorable emotions such as anticipation, trust, and joy. The new type of cruise experience emerging from gigantism and the desire to socialize and interact with other cruisers on board the ship seem to prevail over the crowding effects of a mass environment.

The originality of the article lies in exploring the influence of cruise ship size on public perceptions and feelings, a factor that has not been extensively studied by extant literature.

The study offers important managerial contributions on how mega vessels are perceived by the public and the emotions they can arouse. Cruise managers can take advantage of positive public sentiment and emotions related to the debut of new mega cruise ships, e.g. by benefiting from online word-of-mouth, which can arouse retention and travel intentions in the rest of the public.

However, the study is not without limitations that may be overcome by future studies, such as extending the timespan used for data collection or using methodologies not based on lexical dictionaries, but on more sophisticated approaches, such as machine learning, to better understand the facets of the opinions expressed by the public on social media.

Key words: Cruise ship size; Cruise experience; Sentiment Analysis; Emotion Detection; Cruise industry

Framing of the research. *On the world cruise scene, Royal Caribbean cruise line's Icon of the Seas has attracted particular attention in the recent past. The world's largest ship, which first set sail in June 2023 but returned to the shipyard soon after (McGillivray, 2023), had her first formal debut on 27 January 2024, departing from the port of Miami in Florida (Royal Caribbean, 2024).*

Not only this vessel is 365 meters long, with a gross weight of 250,800 tonnes and a capacity for 7,600 passengers, making it the largest cruise ship in service, but Icon of the Seas offers also a unique experience to its passengers based on design elements never seen before all together on a cruise ship. It offers 7 pools, including an infinity pool overlooking the sea, 6 water slides, a family suite arranged on 3 levels, an Aquadome, an ice-skating rink, Broadway-style shows and more (Fielding, 2023). Cruisers can also experience a lot of moments of conviviality when considering 40 restaurants, bars, and entertainment spaces (Yeğinsu, 2024). Thus, Icon of the Seas marked an important turning point for the cruise industry. However, a vessel of this size could also increase public perceptions of a mass-tourism experience, that during Covid-19 pandemic has become less popular. The presence of common areas and high volumes of cruisers may lead to density problems, both in terms of space and human presence, leading to crowding effects.

Icon of the Seas represents a cruise ship that is particularly interesting to study due to the fact that it started sailing in the aftermath of the Covid-19 pandemic that has particularly affected this industry, causing severe suspensions and slowdowns following the spread of the infection on board ships (CDC, 2020a; Gössling et al., 2021; Liu and Chang, 2020; Ito et al., 2020). Indeed, the typical characteristics of a mega cruise ship, such as confined, crowded, and interactive places (Bert et al., 2014), have increased the vulnerability of passengers and facilitated disease transmission (Ito et al., 2020). Aspects that could influence people's perceptions and feelings about cruises, in terms of perceived risk and future travel decisions (Castaldo et al., 2021; Floyd and Pennington-Gray, 2004; Holland et al., 2021; Muritala et al., 2022).

Crowding and a high number of passengers, related to the ship size, however, besides being a crucial aspect during health crises, are elements that can influence tourists' satisfaction and appreciation of the experience even in normal

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situations. It is, therefore, an issue that has been explored in the literature concerning the world of tourism and hospitality (Vaske and Shelby, 2008), particularly concerning certain over-visited tourist destinations and, therefore, the phenomenon of over-tourism and its impacts (Jacobsen et al., 2019).

Literature has already focused on the different attributes of a cruise ship that influence the decision making of cruisers and potential cruisers (Xie et al., 2012), but, even if the industry tendency towards mega vessels started a long time ago, very few studies have considered ship size among these attributes (Castillo-Manzano and Lopez-Valpuesta, 2018), considering more different onboard elements (Weaver, 2005; Xie et al., 2012) or the shipscape, i.e. "both the man-made physical and social environment in which the cruise service is delivered (the ship), as well as the natural environment (the ocean) that provides a broader experiential context" (Kwortnik, 2008, p. 292; Mahadevan and Chang, 2017).

Mega cruise ships can create negative effects on consumers' perceptions, behavior, and satisfaction (Blut and Iyer, 2019; Kwortnik, 2008), due to the numerous disadvantages that can be generated onboard, such as prolonged waiting times, long queues, and lack of tranquility in public places (Papadopoulou et al., 2023; Sanz-Blas et al., 2024). Aspects that can foster the creation of unfavorable feelings and emotions, as negative emotions may intensify when the individual protection space is crossed. Once this space is crossed by strangers, emotions of fear and anxiety can emerge in consumers (McNaughton and Corr, 2004; Jacobsen et al., 2019). These emotions were particularly frequent among consumers on board cruise ships during the Covid-19 pandemic, due to the increased perceived risk of contracting the disease on board ships (Quintal et al., 2022). At the same time, however, the large number of passengers to interact with, together with the greater variety of activities and facilities present on a mega vessel, can also be a positive factor as it can increase the fun and joy experienced by cruisers (Kwortnik, 2008; Noone and Mattila, 2009).

Purpose of the paper. Due to these premises, this study aims to explore the impact of cruise ship size on public perceptions and feelings, understanding whether negative effects related to a mass and crowded experience prevail over the positive effects linked to the greater variety of activities, facilities, and experiences offered by bigger vessels. Thus, the following research question emerges:

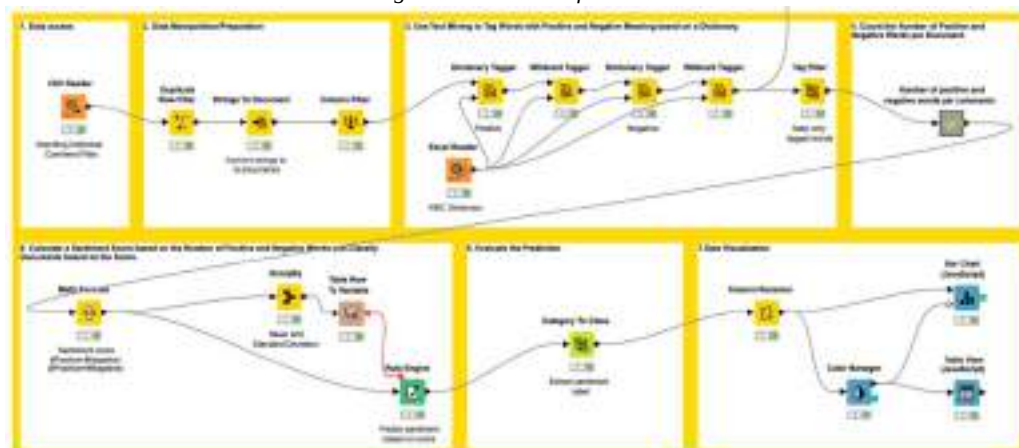
RQ: What is the influence of cruise ship size on public perceptions and feelings, especially in the aftermath of the Covid-19 pandemic?

Methodology. To answer the research question, the study conducts a sentiment analysis combined with an emotion detection analysis to better understand cruisers perceptions and feelings towards mega cruise ships. It was chosen to explore public communication disseminated on social media as these are tools that can collect consumers' word-of-mouth, opinions, and reviews concerning certain experiences (Litvin et al., 2018). More specifically, we focus on social media X, as it represents the ideal place for online debate and discussion on emerging and particularly topical issues (We are social, 2023), such as the official debut of the world's largest cruise ship: Icon of the Seas.

Specifically, the collected data constitutes the posts published by users on the X platform using the hashtag #IconoftheSeas, in a time frame of a month, i.e. from 27th January 2024 (the date on which the ship made its official debut from the port of Miami, Florida) to 27th February 2024.

With the increasing use of social media and the multiplicity of data available on it, sentiment analysis has become a relevant tool for understanding public perceptions and sentiment (Nagamanjula and Pethalakshmi, 2020). Such analysis allows extracted textual data to be assigned a positive, negative, or neutral valence (Alaei et al., 2019; Thelwall, 2019). Over time, such analysis has become increasingly important in research regarding the tourism and hospitality industry where the audience holds an important role (Alaei et al., 2019; Xiang et al., 2015). In this study, sentiment analysis followed a lexical approach, i.e. based on the use of a dictionary, and it was conducted on the KNIME software, i.e. an open-source platform that creates a workflow from the combination of different nodes (Villarroel Ordenes and Silipo, 2021). Figure 1 shows the workflow imported into KNIME, which partially retrieves a workflow uploaded on KNIME Hub "Building a Sentiment Analysis Predictive Model - Lexicon Based Approach" (Villarroel Ordenes and Silipo, 2021) later adapted to the needs of this study.

Fig. 1: KNIME Workflow

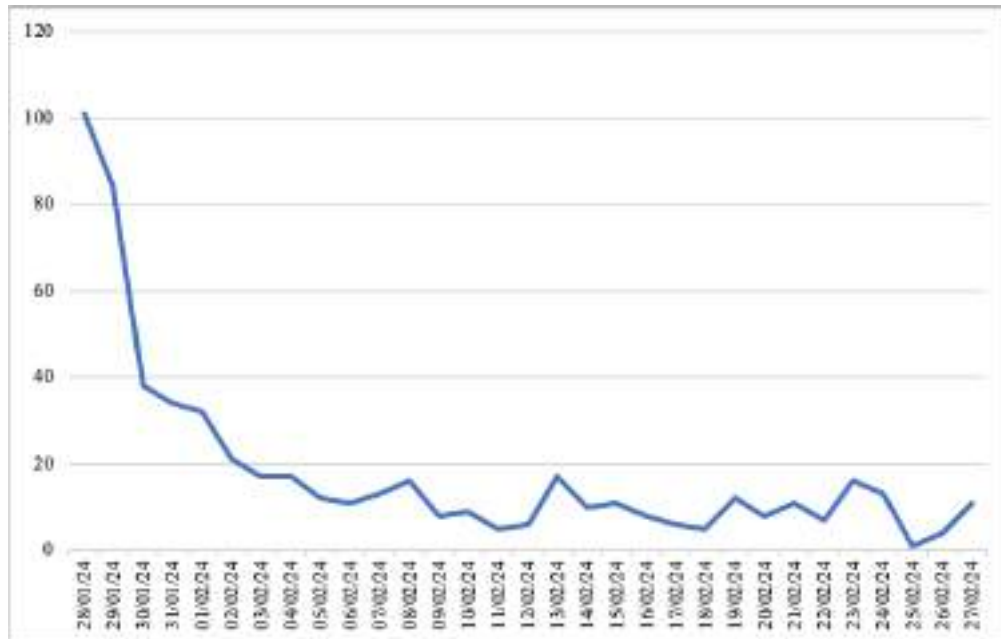


Source: Personal Elaboration from KNIME software

In addition to sentiment analysis, an emotion detection was also conducted to explore the emotions aroused in the audience by the investigated phenomenon. Emotion detection was possible by means of R software, using the NRC Word-Emotion Association Lexicon (Mohammad and Turney, 2011). This dictionary consists of over 10000 words studied according to 2 feelings and 8 emotions: anger, fear, expectation, trust, surprise, sadness, joy, and disgust (Mohammad and Turney, 2011; Mohammad and Turney, 2013). These 8 emotions were defined by Plutchik (1994) as basic, or prototypical emotions and they are therefore particularly relevant for exploring audience emotions.

Results. The total number of posts collected and analyzed, over the time frame selected, is 564. Figure 2 shows how the peak of the online discussion, about the Icon of the Seas theme, occurred around the day of the cruise's official debut, with its departure from the port of Miami, and then remained more or less constant for the rest of the considered time horizon.

Fig. 2: Evolution of online discussion related to the hashtag #IconoftheSeas

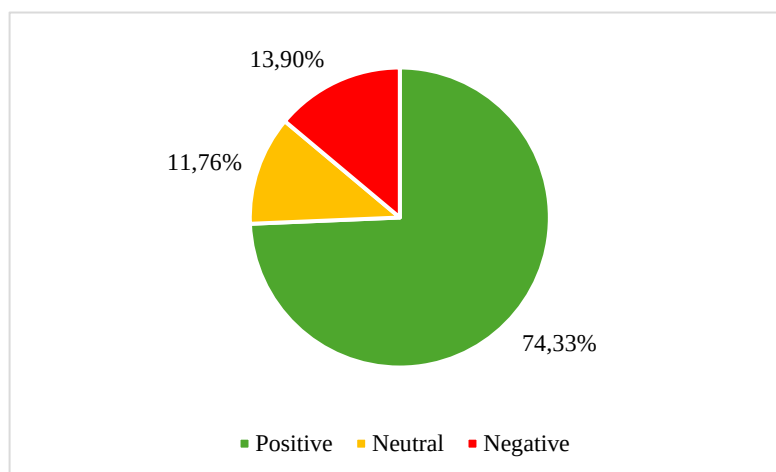


Source: Excel Personal Elaboration

Most of these posts were accompanied by multimedia content: photos for 36.35%, videos for 25.71%, and albums for 11.17%. Only 26.77% of the posts were purely textual.

As for the sentiment generated in the audience, the discussion on social media X showed a predominantly positive sentiment, with 74.33% of the total, neutral for 13.90% and negative for only 11.76% (Figure 3).

Fig. 3: Sentiment Score



Source: Excel Personal Elaboration

Figure 4 shows some examples of posts published on X and their relative Sentiment Score - positive, neutral or negative. In particular, posts with a positive sentiment in the audience often showed a particular appreciation of the wide

range of services offered by the cruise and the high level of technological innovation on board the ships. While posts that showed a negative sentiment in the audience focused more on the too big dimensions of the ship and the environmental concerns related to such mega vessel. Indeed, over time, tourists have become increasingly responsible and aware of the environmental damage caused by cruise ships (Yip et al., 2023). In particular, the Covid-19 pandemic with the suspension of cruising activities has made the damage done to the environment even more evident to the public, leading eco-friendly consumers to prefer smaller vessels that also offer more luxurious experiences (Elliott, 2023).

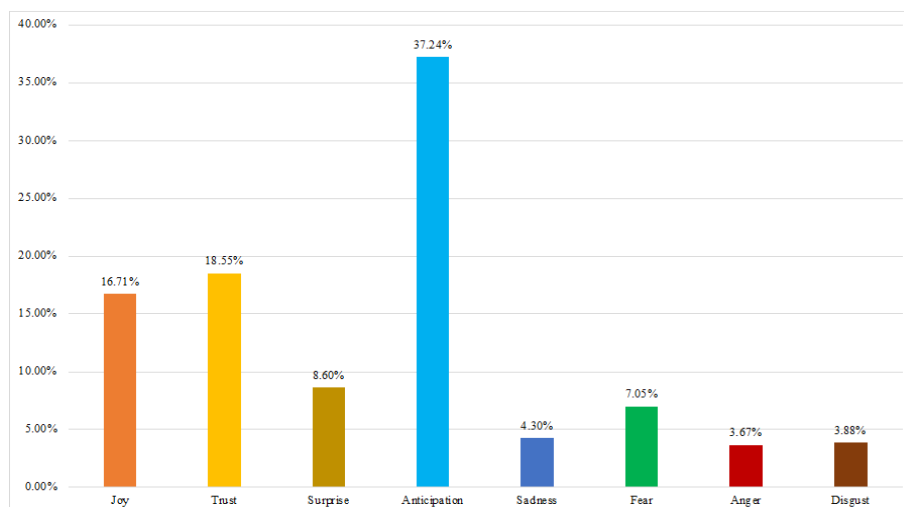
Fig. 4: Sentiment Score Example of Sentiment Score per Post on X

RowID	Comments	Negative Words	Positive Words	Sentiment Score	Sentiment Prediction
Row2	"I review our trip on the largest cruise ship in the world, give my top 10 tips, and also answer: 'Is it worth the cost?' Do you have any interest in sailing on Icon of the Seas? #IconOfTheSeas #RoyalCaribbean #RcI"	0	6	6	POSITIVE
Row22	"Welcome to the largest Casino Royale in the fleet! 🎰 #IconOfTheSeas #RoyalCaribbean"	0	4	4	POSITIVE
Row35	"Royal Caribbean's new ship, Icon of the Seas, is filled with fun and excitement each evening! It's okay. You can sleep in the next day! #IconOfTheSeas #RoyalCaribbean"	2	4	3.6666666666666665	POSITIVE
Row179	"Introducing the majestic #IconOfTheSeas, the new giant of @RoyalCaribbean! 🌊 With dimensions that defy imagination and experiences that break molds, this #cruise awaits to take your #adventure to the next level. 🌟 #TheBestIsYetToCome"	4	4	3.5	POSITIVE
Row231	"Largest Waterpark at sea? Yes. 🌊 #Category6 #IconOfTheSeas"	0	4	4	POSITIVE
Row161	"Somehow I went on the world's largest cruise ship @RoyalCaribbean #IconOfTheSeas for 7 nights with all those food and drink options and managed to LOSE 2 pounds 🤯 granted I did walk over 40 miles cross-crossing the ship"	2	2	1.5	NEUTRAL
Row9	"There are so many bars on this ship I may die #IconOfTheSeas"	2	0	-1	NEGATIVE
Row80	"Enormous #IconOfTheSeas @RoyalCaribbean @Semitravel #cruiseship"	2	0	-1	NEGATIVE

Source: Personal Elaboration from KNIME software

About the emotions of the audience, Figure 5 shows that the emotion most felt by the audience was anticipation with a value of 37.24%, followed by trust with 18.55% and joy with 16.71%. Consumers were particularly pleased to find so many areas dedicated to specific target consumers that encouraged socialization and new encounters among cruise passengers on board the ship.

Fig. 5: Emotion Detection



Source: Excel Personal Elaboration

The results show the predominance of positive sentiment and favorable emotions, such as anticipation, trust, and joy. On the contrary, negative sentiment and particularly unfavorable emotions, such as fear, anger, or disgust, appear to be very low. The clear predominance of the “anticipation” emotion is a very good sign for the cruise company, as it testifies the future orientation of the audience and, therefore, its intention to try or repeat the experience. This emotion is also particularly relevant considering the Covid-19 pandemic, as it determines the resilience and willingness to travel again of the cruising public, leaving behind the forced social distancing of the Covid-19 pandemic (Xiao et al., 2020). Thus, cruise ship size does not seem to be a concern for the public: the positive effects linked to the greater variety of activities, facilities, and experiences offered by the new vessel prevail over the negative effects related to a mass and crowded experience.

The generation of emotions such as joy and enjoyment can be related to the public's satisfaction in being able to interact and socialize with new people, i.e. a positive evaluation of the size of the ship that permits high passenger capacity on board the vessel, with high social interactions (Kwortnik, 2008; Noone and Mattila, 2009; Park et al., 2021). Such public emotions may depend, for example, on the appropriate management of the space on board the ship (Zehrer and Raich, 2016), made increasingly possible using numerous technologies. For example, the use of Apps for booking certain services, or the use of QR codes, makes it possible to better manage attendance at certain places and zones of the cruise vessel, avoiding overcrowding and the generation of disruptions (Sanz-Blas et al., 2024).

Furthermore, the fact that negative sentiment and mixed emotions stem from specific issues can help organizations in appropriately communicating and managing these issues as well. For example, regarding the issue of sustainability, organizations could disseminate appropriate campaigns aimed at communicating the vessel's new standards for sustainability with the use of energy-efficient technologies or educating the public on the increasingly responsible use of resources on board ships. This is why passenger education, especially when ship capacity is particularly high, is a particularly relevant aspect (Sanz-Blas et al., 2024).

Research limitations. The study presents some limitations that could be ironed out in the future. Firstly, the number of posts collected and analyzed on X could be expanded, following the evolution of the phenomenon and the online debate generated around the ship *Icon of the Seas*, to gather more generalizable results. Secondly, the study of this phenomenon could be approached by considering a variety of online discussion channels such as other social media to observe potential differences between consumer opinions spread across different digital platforms, such as TripAdvisor. Exploring differences in opinions and perceptions between consumers of different ages and from different countries of origin could highlight differences related to culture. Finally, in terms of the followed methodology, future studies might abandon dictionary-based lexical methods and favor more sophisticated approaches based on machine learning, artificial neural networks, or linguistic models such as Google BERT to explore audience sentiment and perceptions in a more comprehensive and detailed manner. Machine learning-based methods enable a more comprehensive observation of textual data but require significantly more computing power than lexicon-based approaches (Hossen and Dev, 2021).

Managerial implications. This research provides academic and practical implications. From an academic point of view, this paper advances the literature on the different attributes of a cruise ship that influence public perceptions and emotions, focusing on cruise ship size, a rather neglected area of research.

From a managerial viewpoint, instead, the study offers valuable hints on how to enhance the communication of cruise experiences, leveraging opportunities for interaction and sociability, to increase consumer retention and the diffusion of positive experiences and reviews to the rest of the public. From our research, the public does not seem to be concerned with cruise ship size and crowding. The creation of particularly positive sentiments and favorable emotions in the audience could be a valuable tool for organizations to use as it influences further positive tourist behavior such as loyalty and recommendation of the experience to others (Sanz-Blas et al., 2024). The emphasis on the positive aspects could also help in overcoming some of the critical issues that have emerged among specific consumer segments that are more environmentally responsible.

Originality of the paper. The originality of this work lies in the contribution to the theoretical knowledge related to public perceptions and emotions towards cruise ship size, observing the recent debut of a mega vessel, *Icon of the Seas*, the most innovative and largest ship in the world, with state-of-the-art features and services designed to elevate the cruise experience.

To the best of our knowledge, only a few papers have considered vessel size among the attributes of a cruise ship that influence public perceptions, so this work tries to advance a research area that requires more in-depth investigation.

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The motivations behind religious and spiritual tourism: an empirical investigation on Assisi visitors

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Abstract

This study investigates the motivations underpinning travel to religious and spiritual destinations, aiming to identify distinct visitor segments based on common motivations. Employing a dataset of over 600 individuals, an empirical analysis was conducted. Three distinct visitor clusters emerged, differentiated by the relative prominence of three core motivations: spiritual fulfillment, knowledge seeking, and escape from daily routines.

The research concludes by offering managerial implications for policymakers and stakeholders of religious and spiritual tourist destination. These insights can be used to optimize marketing strategies and enhance destination appeal by more effectively addressing the diverse needs of religious and spiritual tourists.

Key words: religious tourism; spiritual tourism; travel motivations; tourist segmentation

Framing of the research. Religious tourism involves people travelling to sacred places or events. More broadly, it may include journeys undertaken by individuals from different cultures and belief systems to destinations that they consider meaningful in fulfilling their spiritual aspirations (Ozcan et al., 2019; Poria et al., 2003; Scaffidi Abbate and Di Nuovo, 2013; Timothy and Olsen, 2006).

Several researches state that there are a variety of motivations behind religious tourists, such as seeking long-term benefit, unravelling the meaning of life, achieving personal values on a physical, emotional, spiritual and intellectual level (Liro, 2021; Cohen, 1998), spending leisure time with family and friends, relaxing and participating in religious festivals and visiting social, historical and cultural places (Herzog et al., 2011; Bond et al., 2015; Canoves and Forga, 2016; Kainthola et al., 2021; Raj and Griffin, 2015). According to the study of Amaro et al. (2018), strictly religious and fideistic motivations - understood as the profession of one's faith - would be behind many other motivations such as broad spiritual aspects, escape from routine, nature and sports experience and cultural motivations (Bilim and Düzgüner, 2015).

In this sense, Bond (2015) highlights the presence of different orientations that visitors to sacred places could present, even in an overlapping way. The first is the heritage-oriented one, according to which the traveller shows greater interest in the cultural dimension, both of sites and monuments and historical figures of the past. The second is that of pilgrimage, according to which the purpose of the journey is mainly to live a profound and significant spiritual experience for one's life. Finally, the third is the purely religious one and the objective is to exercise acts of devotion that allow spiritual and mental reconnection with one's community of believers and the chosen place connects to a specific saint or event associated with their faith.

From the literature it emerges that the motivation that often turns out to be the main is the spiritual one, understood in a broad sense and not strictly linked to a particular religious' confession. In this sense, spirituality should be viewed as an overarching framework encompassing religiosity. Gassiot-Meilan et al. (2019) aptly differentiate the two, noting that religion carries a collective connotation, whereas spirituality is deeply personal, shaped by individual identities, whether religious or non-religious. In essence, spirituality finds expression through religion, but it also manifests through other core values, stemming from an innate and inherent quest.

Beyond the spiritual motivation, as reported by the literature analysed above, more and more studies highlight how it is accompanied - or sometimes replaced - by other motivations linked to the need to escape from everyday life (escape motivation), or to know and discover the heritage local and the communities visited (cultural motivation) (Amaro et al., 2018; Sanagustín-Fons et al., 2019; Chun et al., 2018; Bond, 2015).

Purpose of the paper. This study aims to explore the phenomenon of religious and spiritual tourism in the city of Assisi, focusing on identifying potential clusters of tourists who share homogeneous motivations for their visit. The choice of Assisi stems not only from its renowned importance in religious tourism, associated with the figures of Saint Francis

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and Saint Clare, but also from the growing interest in spirituality, the search for transformative and cultural experiences. In this context, the goal is to outline the boundaries of the various groups of visitors, categorized according to their intrinsic motivations, which range from strictly religious to spiritual, cultural, and personal interests. Understanding these motivational profiles is considered fundamental for a comprehensive picture of religious tourists. By identifying these clusters, this research aims to contribute to research on religious tourism motivations.

Through an in-depth data analysis, the work aims to provide valuable insights for tourism operators, local authorities, and the academic community, contributing to guiding future management strategies for tourism in areas of high religious and spiritual interest.

Methodology. Data collection took place in Assisi during 2022 - from June to December. A structured questionnaire was administered to visitors with the support of the municipal tourist office and 620 individuals replied. Some responses have been excluded due to too many missing answers, thus obtaining a final sample of 592 individuals.

The questionnaire included several sections, concerning, among the others, the motives at the basis of the visit and socio-demographic variables. A set of items derived from the literature was used to measure visitor motivations (Albayrak et al., 2018; Kolar and Zabkar, 2010; Li and Cai, 2012; Rivetti and Lucadamo, 2023; Schofield and Thompson, 2007; Tsai, 2021; Yoon and Uysal, 2005). These items were measured through a seven-point Likert scale (1 = strongly disagree; 7 = strongly agree).

Data analysis took place in two stages, using the software “R” (R Core Team, 2021). In order to build profiles of visitors based on their motivations, we performed a Principal Component Analysis (PCA) and subsequently a cluster analysis.

Results. In order to perform the PCA, we considered the items concerning visitor motivations. Based on the cumulative variance criterion, we selected the first five components, explaining about 87% of the total variance.

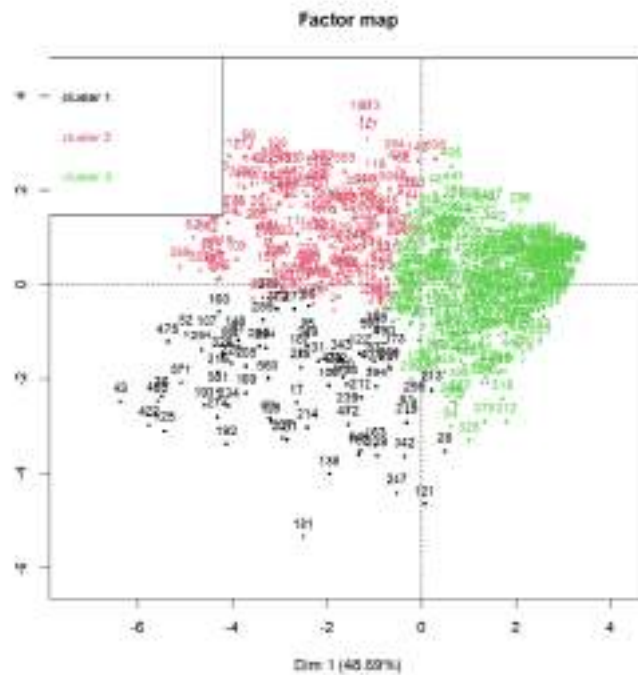
Considering absolute contribution of variables to the formation of the components (table 1), we can proceed to their interpretation. The first component is mainly characterized by variables concerning spiritual/religious motives, and specifically: “To gain a sense of accomplishment”, “To feel inner harmony/peace”, “To seek spiritual comfort”, “To experience a sense of closeness to God”, “To experience a holy atmosphere”. The variables characterizing the second component concern knowledge motivation: “To increase my knowledge”, “To visit historical places”, “Interest in the culture and traditions of Assisi”. Instead, the third component seems to represent escape motivation, since it is characterized by the following variables: “To be away from daily routine”, “To release my work pressure”, “To rest and relax”. The fourth and fifth components are respectively characterized by a sub-set of variables that fall within the knowledge motives (“To increase my knowledge”, “Interest in the culture and traditions of Assisi”) and spiritual/religious motives (“To gain a sense of accomplishment”, “To feel inner harmony/peace”, “To experience a holy atmosphere”).

Tab.1: Absolute contribution of variables

Variable	Dim1	Dim2	Dim3	Dim4	Dim5
To increase my knowledge	4.511	19.448	5.211	54.124	3.843
To visit historical places	3.313	28.475	8.032	1.263	0.139
Interest in the culture and traditions of Assisi	5.533	19.081	5.923	32.957	1.138
To be away from daily routine	8.659	0.684	21.894	3.790	0.021
To release my work pressure	8.900	0.931	22.633	0.152	0.207
To rest and relax	8.644	2.863	20.151	0.396	8.967
To gain a sense of accomplishment	12.839	1.353	0.101	4.227	29.663
To feel inner harmony/peace	13.113	5.327	2.071	0.804	11.625
To seek spiritual comfort	13.261	7.228	2.549	0.131	1.786
To experience a sense of closeness to God	10.771	9.984	4.995	0.517	6.988
To experience a holy atmosphere	10.455	4.626	6.441	1.639	35.621

Considering the components extracted through the PCA, we performed an agglomerative hierarchical cluster analysis, in order to identify groups of visitors on the basis of their motivations, using the clustering criterion proposed by Ward (1963). In this way, we obtained three clusters, made up of 182 (cluster 1), 143 (cluster 2) and 267 (cluster 3) individuals. The clusters are shown in figure 2, considering a cartesian plane in which the first and the second component constitute the abscissa axis and the ordinate axis respectively. We can observe that the first cluster is placed in the third quadrant, which presents negative values for both the first two components, indicating that this group is probably made up of poorly motivated individuals, at least as regards spiritual/religious and knowledge motivations. Instead, the second cluster is placed in the second quadrant, and this signals that these individuals are motivated by knowledge rather spiritual/religious motives. Finally, the third group is mostly distributed within the first and fourth quadrants, and this certainly indicates a strong spiritual/religious motivation.

Fig. 1: The clusters



In order to understand the characteristics of the groups in more detail, it is essential to consider the variables which are significantly associated with them. As shown in table 2, individuals in the first cluster are not motivated either from a religious/spiritual point of view, nor by knowledge nor do they seem to visit the destination for escape motives. In light of this, we name this group “unmotivated”.

Tab. 2: Variables significantly associated to the first cluster

Variable	v.test	Mean in the cat.	Overall mean	Sd in the category	Overall sd	p.value
To experience a sense of closeness to God	-2.741	4.184	4.850	2.018	2.265	0.006
To seek spiritual comfort	-3.822	4.092	4.978	2.014	2.163	0.000
To experience a holy atmosphere	-3.969	4.224	5.115	2.056	2.095	0.000
To feel inner harmony/peace	-4.658	4.184	5.204	2.044	2.044	0.000
To gain a sense of accomplishment	-6.926	2.697	4.316	1.709	2.180	0.000
To be away from daily routine	-7.178	3.105	4.708	2.068	2.083	0.000
To release my work pressure	-7.293	2.408	4.150	1.763	2.229	0.000
To rest and relax	-9.096	2.579	4.635	1.801	2.109	0.000
To increase my knowledge	-13.331	2.684	5.235	1.558	1.785	0.000
Interest in the culture and traditions of Assisi	-15.656	2.908	5.611	1.453	1.611	0.000
To visit historical places	-17.137	3.066	5.875	1.445	1.529	0.000

The second cluster is not characterized by variables concerning spiritual/religious and escape motivations. Surprisingly, only one variable reflecting knowledge motivation (“To visit historical places”) significantly contributes to this cluster. Despite this, also considering the location of the cluster in figure 1, previously highlighted, we can name this cluster “hungry for knowledge”.

Tab. 3: Variables significantly associated to the second cluster

Variable	v.test	Mean in the cat.	Overall mean	Sd in the category	Overall sd	p.value
To visit historical places	3.208	6.202	5.875	0.947	1.529	0.001
To rest and relax	-6.256	3.755	4.635	2.006	2.109	0.000
To release my work pressure	-8.022	2.957	4.150	1.964	2.229	0.000
To be away from daily routine	-8.446	3.534	4.708	1.961	2.083	0.000
To experience a holy atmosphere	-14.338	3.110	5.115	1.886	2.095	0.000
To gain a sense of accomplishment	-14.863	2.153	4.316	1.285	2.180	0.000
To experience a sense of closeness to God	-16.538	2.350	4.850	1.545	2.265	0.000
To feel inner harmony/peace	-16.794	2.914	5.204	1.544	2.044	0.000
To seek spiritual comfort	-17.957	2.387	4.978	1.372	2.163	0.000

The third cluster is characterized by all variables concerning motivation (table 4). Individuals in this group visit the destination not only for spiritual/religious reasons, although these motives, more than the others, characterize this group. In fact, also escape and knowledge motives are at the basis of their visit. Based on these evidence, we name this group “transversally motivated”.

Tab. 4: Variables significantly associated to the third cluster

Variable	v.test	Mean in the cat.	Overall mean	Sd in the category	Overall sd	p.value
To seek spiritual comfort	18.954	6.365	4.978	0.952	2.163	0.000
To feel inner harmony/peace	18.465	6.482	5.204	0.852	2.044	0.000
To gain a sense of accomplishment	18.254	5.663	4.316	1.429	2.180	0.000
To experience a sense of closeness to God	16.925	6.147	4.850	1.400	2.265	0.000
To experience a holy atmosphere	15.759	6.232	5.115	1.238	2.095	0.000
To be away from daily routine	12.583	5.595	4.708	1.614	2.083	0.000
To release my work pressure	12.275	5.076	4.150	1.927	2.229	0.000
To rest and relax	11.897	5.484	4.635	1.707	2.109	0.000
Interest in the culture and traditions of Assisi	10.449	6.181	5.611	1.089	1.611	0.000
To increase my knowledge	10.414	5.864	5.235	1.356	1.785	0.000
To visit historical places	8.763	6.329	5.875	1.051	1.529	0.000

Research limitations. A limitation of the research concerns the geographical scope of the study, which is exclusively focused on Assisi. Although this focus provides detailed insights into this specific destination, it may limit the generalizability of the results to other areas of religious and spiritual interest. Moreover, the analysis predominantly concentrates on the motivations of the visitors without deeply exploring the socio-cultural and economic context that could influence their perceptions and behaviours. These limitations, however, provide avenues for future research, inviting an expansion of the investigative horizon and the use of complementary methods for an even more nuanced understanding of the phenomenon.

Managerial implications. The study offers various managerial implications for destinations with a religious and spiritual vocation. Firstly, it underscores the complex and diverse of motivations driving visits to such places. The identification of distinct visitor clusters provides a robust foundation for developing highly personalized management and marketing strategies.

The heterogeneity of motivations, spanning from cultural and personal interest to spiritual exploration, necessitates a holistic approach to managing and promoting religious and spiritual tourist destinations. Destination Management Organizations (DMOs) must thus craft marketing strategies and tourism offerings that are both differentiated and inclusive, catering to diverse visitor needs and expectations. This entails a strong focus on personalized experiences, providing itineraries and activities that enrich visitors’ understanding and appreciation of the destination’s historical, artistic, cultural and spiritual facets.

Effective collaboration among stakeholders, including tourism operators, local authorities, and residents, is crucial for developing tourism experiences that enhance the destination's cultural and spiritual heritage while preserving its cultural environment.

Moreover, the identified visitor clusters highlight the importance of integrated management considering the complexity of tourist experiences. Tourism operators must provide diversified ancillary services, such as accommodation, transportation, dining, and cultural access, to flexibly meet diverse visitor demands. The primary challenge for destination managers is harmonizing these services to deliver high-quality, enriching, and memorable experiences. This requires a sustained commitment to personalization, addressing both practical needs and the deeper dimensions of spiritual, cultural, and personal exploration. Effectively managing this diversity of needs is fundamental to the sustainable development of religious and spiritual tourism, fostering an inclusive and respectful hospitality model that accommodates various travel motivations.

Originality of the paper. The originality of this research is multifaceted. Firstly, our novel methodological approach allows for a nuanced differentiation of visitor motivations, surpassing traditional categorical frameworks. Secondly, by segmenting the target audience into distinct motivational groups, we offer a fresh perspective on religious destination selection. Finally, our findings not only enrich the existing body of literature by elucidating the influence of motivational factors on destination choice but also provide crucial insights for Destination Management Organizations (DMOs) in developing more effective tourism policies.

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Industrial tourism in Italy: a spatial analysis of regional patterns of specialization

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Abstract

Industrial tourism, a relatively unexplored research theme, involves a broad spectrum of attractions, from visits to operational companies and industrial sites to industrial archeology, intended as the complex of testimonies of industrial past and long-dead industries. In recent years, corporate museums have turned into main attractors in this niche of cultural tourism. Thus, in line with a more recent view, in the present study we consider both corporate museums and industrial archaeology sites as attractions of industrial tourism. The main aim is to determine the level of specialization of Italian regions in terms of industrial tourism, that is the weight that visits to corporate museums and industrial archaeology sites have on the total number of visits to museums, archaeological parks and all the other cultural institutions that make up the cultural tourism market, compared with the average values recorded at the national level. Thus, the paper aims to highlight spatial differences between Italian regions, identifying those in which industrial tourism demonstrates the greatest relative position compared to other market segments driven by the standard attractions of cultural tourism. The degree of specialization of Italian regions in terms of industrial tourism was measured through an adaptation of the Florence Index (FI), a measure of the dissimilarity between regional and national shares of a phenomenon. The data needed to calculate the indicator were gathered from the survey on “Museums and Similar Institutions” conducted by ISTAT, the Italian national statistical agency, in the year 2021. The results clearly delineated the specialization, in terms of industrial tourism, of two regions above the others (Emilia-Romagna and Sardinia), showing a weak situation for all other regions.

Key words: Industrial tourism; corporate museums; industrial archaeology; regional specialization; Italy

Framing of the research. In the broad field of cultural tourism, increasing attention has been given to industrial heritage, made up of past and present industrial resources, able to generate potentially distinctive and memorable experiences (Vargas-Sánchez, 2015). This form of heritage is at the core centre of industrial tourism, which represents a relatively unexplored research theme, still lacking clear concepts and univocal definitions (Otgaar et al., 2010). Indeed, industrial tourism involves a broad spectrum of types, from visits to operational companies and industrial sites to industrial archeology, intended as the complex of testimonies of industrial past and long-dead industries (Frew, 2000). The term industrial tourism even takes on different meanings, depending on the national context in which it is applied. In some countries, such as Germany and France, industrial tourism is generally associated with industrial heritage and not with visits to operational firms, while in the Anglo-Saxon context a distinction is generally made between industrial tourism, intended as visiting operational firms, and industrial heritage tourism (Otgaar et al., 2010). Regardless the different labels, which in some cases only reflect a difference in language, industrial tourism “products” have been categorized considering both the places and the essence of this kind of experience for tourists (Li and Soye, 2006), generally interested in learning more about products, manufacturing processes, economic discoveries and historical backgrounds. Looking at previous studies, research has traditionally privileged long-dead industrial heritage, with a focus on mines (Edwards and Coit, 1996) and reconversion of past industrial sites (Boros, 2013), while limited attention has been given to tourism in operating facilities, largely overlooked from industrial tourism researchers (Garofano et al., 2022). In recent years, corporate museums have turned into main attractors in this niche of cultural tourism, offering new opportunities of interaction between firms and society (Riviezzo et al., 2022). Along with archives, to which they are often attached, corporate museums fulfill the dual role of preservation and enhancement of corporate heritage (Riviezzo et al., 2021a) and represent precious sites of organizational memory (Nissley and Casey, 2002). Even representing a consolidated phenomenon in industrialized countries, the lack of a definition univocally shared by management scholars

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and practitioners determines the difficulty of collecting data on their performance as tourist attractions. In Italy, the phenomenon of corporate museums experienced a considerable growth starting from the 1990s and continued to grow in recent years, until exceeding 100 units (Garofano et al., 2022). In the present study, we consider both corporate museums and industrial archaeology sites as attractions of industrial tourism. As mentioned above, industrial archaeology deals with the interpretation of the surviving physical evidence to understand past human industrial and manufacturing activities. In its broadest definition, it includes past production plants, industrial villages, railway stations and mines, along with service infrastructures, such as aqueducts, bridges and dams (Cole, 2004). Owned and operated by living companies, corporate museums link the testimonies of corporate past with new kinds of tourist experience, able to make a substantial contribution to the enhancement of brands and corporate image (Riviezzo et al., 2021b; Riviezzo et al., 2022). Interestingly, industrial tourism not only comprehends visits by leisure tourists who after already having visited “standard” tourist attractions are looking for alternative and unique experiences, but also by students who want to learn more about production processes, as well as by professionals and other stakeholders who may be interested in industrial heritage for different reasons (Otgaar et al., 2010). Therefore, industrial tourism can make a strategic contribution to the competitiveness of cities and regions, with several potential benefits in terms of both income and image. Actually, industrial tourism represents a relevant market for those areas far from the most consolidated tourist circuits, especially for small destinations that can use industrial heritage also to attract local and regional visitors. Furthermore, industrial tourism is an interesting addition for rather traditional tourist destinations that are already successfully attracting tourists and may add a variation of the standard tourist program or create more appeal for second time visitors. However, the diversity of manifestations of industrial tourism and the multiplicity of potential tourist segments highlight the necessity to provide a more comprehensive view of the phenomenon, in order to identify possible forms of integration with other niches of cultural tourism.

Purpose of the paper. In the last decades, the importance of learning has emerged as a central element of tourists’ choice, as they have become more selective and have shown a preference for special interest tourism (Trauer, 2006) and other forms of consumer experience-oriented tourism (Mitchell and Mitchell, 2001). As an educational experience testifying the shift from passive attractions to active attractions (Otgaar et al., 2010), it is conceivable that the relative position of industrial tourism towards other attractions in the cultural tourism market is changing. Based on these assumptions, the present study aims at determining the level of specialization of Italian regions in terms of industrial tourism, that is the weight that visits to corporate museums and industrial archaeology sites have on the total number of visits to museums, archaeological parks and all the other cultural institutions that make up the cultural tourism market, compared with the average values recorded at the national level. Thus, the paper aims to highlight differences between the Italian regions, identifying those in which industrial tourism demonstrates the greatest relative position compared to other market segments driven by the standard attractions of cultural tourism.

Method. The degree of specialization of Italian regions in terms of industrial tourism was measured through an adaptation of the Florence Index (FI) (Innocenti, 2002). This index is a measure of the dissimilarity between regional and national shares of a phenomenon and describes the economic specialization of a region compared to the national average situation, which increases as the index increases. In the tourism literature, this index is typically used to analyze the level of specialization of different territorial areas in terms of tourist accommodations, for instance by comparing the weight of beds in an individual municipality relative to the municipal population, with the weight of beds in the province relative to the provincial population (Pascetta, 2014; Romagnoli, 2002). In the present study, the index was adapted by comparing the number of visitors to corporate museums and industrial archaeological sites in a single region compared to the total number of visitors to all (public and private) museums and other cultural attractors in that region, with the number of visitors to corporate museums and industrial archaeological sites throughout Italy compared to the total number of visitors to all Italian (public and private) museums and other cultural attractors. The formula for calculating the index is then as follows:

$$ITVi / CTVi$$

$$ITVtot / CTVtot$$

ITVi = number of industrial tourism visitors in the i region

CTVi = number of cultural tourism visitors in the i region

ITVtot = total number of industrial tourism visitors in Italy

CTVtot = total number of cultural tourism visitors in Italy

The data needed to calculate the indicator were gathered from the survey on “Museums and Similar Institutions” conducted by ISTAT, the Italian national statistical agency. The survey, of a census nature, was carried out through the completion of online questionnaires by the heads of each facility and covered all public and private, state and non-state institutions of different types and sizes that were open to the public in the year 2021. The multi-form questionnaire surveys the structural characteristics of museums, archaeological sites and monuments, total visitors owned, staff employed, collections owned, and collaboration and partnership relationships with other institutions in the area. ISTAT conducted the census-based survey between the end of March and the end of June 2022, sending the credentials and passwords of

the online questionnaire to the directors/managers of about 5,400 museums and similar institutions of museum character, achieving an overall response rate of 91.1%.

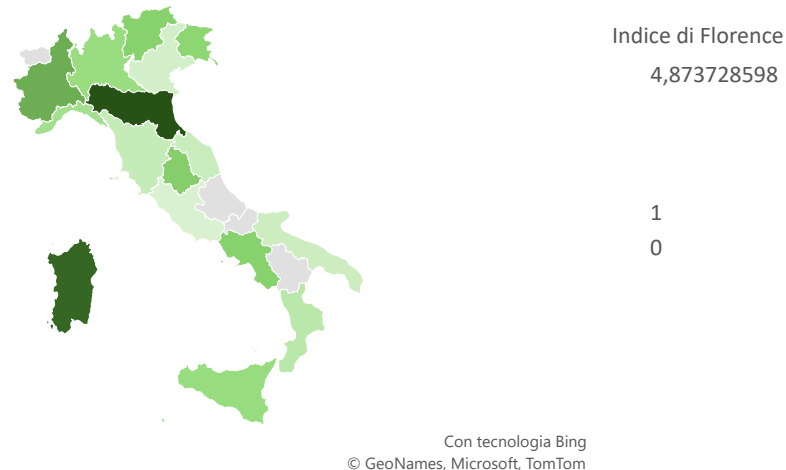
The number of corporate museums (privately owned, i.e., owned and operated by companies) in the final sample is 98, the number of industrial archaeological sites is 33, for a total of 131 industrial tourism attractions surveyed in Italy. Among the most visited corporate museums in Italy are the Ferrari Museum (with over 126,000 annual visitors), the Pietrarsa National Railway Museum (with over 106,000 annual visitors), the Lamborghini Museum (with over 36,000 annual visitors) and the Alfa Romeo Museum (with over 32,000 annual visitors).

According to the data collected, the industrial tourism segment is quite significant, with a total number of visitors of almost one million (920,219) in 2021, including all corporate museums and industrial archaeology sites.

Results. The application of the Florence Index (FI) yields, for each region considered (i.e., each region in which there is at least one industrial tourism attractor), a value of less than 1 if the ratio of the number of industrial tourism visitors to the number of cultural visitors in the region is insignificant compared to the value that the same ratio records at the national level; the value of FI, on the other hand, becomes close to 1 when the ratio of the number of industrial tourism visitors to the number of cultural visitors to the region is equivalent to the value that the same ratio takes at the national level and, therefore, there is no particular form of specialization of the region in terms of industrial tourism; finally, in the presence of values greater than 1 there is evidence of the presence of specialized regions vis-à-vis the national context.

The resulting map (Fig. 1) clearly delineated the specialization, in terms of industrial tourism, of two regions above the others (Emilia-Romagna and Sardinia), followed by five regions with a FI above 1 (Piedmont, Umbria, Trentino Alto Adige, Campania, Friuli Venezia Giulia). The analysis shows a weak situation for all other regions, which record a FI below 1. Interestingly, six regions have no industrial tourism attractors surveyed.

Figure 1 - Distribution of Italian regions in terms of industrial tourism specialization



If we look at specialization by spatial macro-areas, the northeastern regions and the islands turn out to have the highest FI, with a value close to 2 (Fig. 2).

Figure 2 - Distribution of Italian macro-areas in terms of industrial tourism specialization

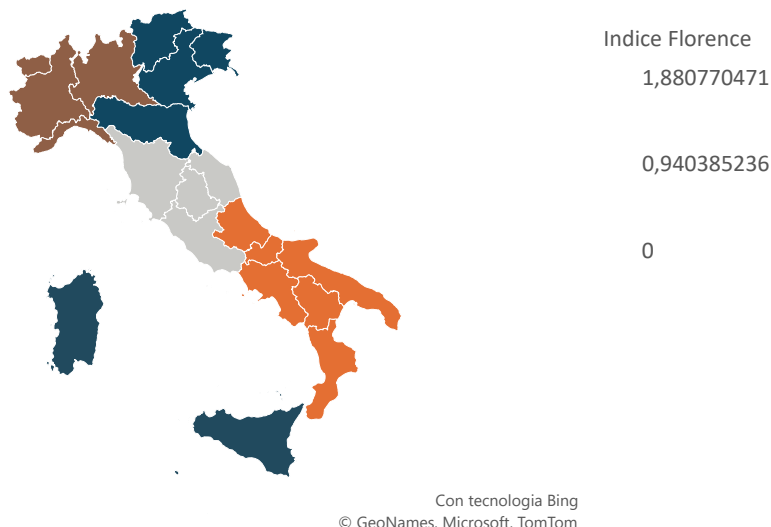


Table 1 shows in details the IF values, the number of corporate museums, the number of industrial archaeology sites and the most visited industrial tourism attractor in each region. Of course, the number of attractors influences the IF value. However, the region with the highest number of industrial tourism attractors (Lombardy, with a total of 23 attractors) shows an IF value below 1 (0,86), thus the level of specialization is insignificant compared to the national level.

Table 1 - IF values, corporate museums, industrial archaeology sites and most visited attractor in the Italian regions

Region	IF	N. Corporate Museums	N. Industrial Archeology sites	Most visited attractor	N. Visitors
Emilia-Romagna	4,8737286	15	3	MUSEO FERRARI MARANELLO	126000
Sardinia	4,3287583	7	10	PORTO FLAVIA	40212
Piedmont	2,2180861	12	3	BORGO E ROCCA MEDIEVALE	100000
Umbria	1,3244548	5	0	MUSEO STORICO PERUGINA	25551
Trentino-Alto Adige	1,2152251	3	3	FONDAZIONE CAMPANA DEI CADUTI	21953
Campania	1,1795307	2	1	MUSEO NAZIONALE FERROVIARIO DI PIETRARSA	106649
Friuli-Venezia Giulia	1,0547628	4	2	MUSEO DELLA TRADIZIONE MINERARIA - POLO MUSEALE CAVE	19500
Sicily	0,8710742	1	3	EX STABILIMENTO FLORIO DELLE TONNARE DI FAVIGNANA E FORMICA	42588
Lombardy	0,8564191	20	3	LA MACCHINA DEL TEMPO - MUSEO STORICO ALFA ROMEO	32382
Liguria	0,7081419	6	0	MUSEO NAZIONALE DEI TRASPORTI	1200
Calabria	0,4079209	1	1	MUSEO DEL BERGAMOTTO	3000
Tuscany	0,2531982	8	1	MUSEO PIAGGIO	15000
Marche	0,2051609	5	1	MUSEO DELLA MINIERA DI ZOLFO DI CABERNARDI	1000
Apulia	0,1619443	1	0	MUSEO DEL CONFETTO 'GIOVANNI MUCCI'	1850
Veneto	0,0648634	5	2	MUSEO REGIONALE DELLA BONIFICA CA' VENDRAMIN	1588
Latium	0,0032096	3	0	MUSEO DELLA ZECCA DI ROMA	235
Aosta Valley	0	0	0	\	\
Abruzzo	0	0	0	\	\
Molise	0	0	0	\	\
Basilicata	0	0	0	\	\

Research limitations. The visitor numbers to industrial tourism attractions give some idea about the demand for industrial tourism and the level of specialization of Italian regions, but more information is needed to get a comprehensive picture. Specifically, visitor numbers available are limited to corporate museums and industrial archaeology sites, while visitor numbers to operational firms opening their doors for factory tours are not included. Furthermore, even though the data were gathered from a survey conducted by ISTAT of a census nature, not all the corporate museums and industrial archaeology sites are represented in the final sample. Comparing the list of respondents with other studies, it is possible to note that some attractors (and relative number of visitors) are missing, especially in some regions. Finally, qualitative information concerning the demand for industrial tourism is needed in order to explore in-depth the characteristics and motivations of segments interested in industrial heritage.

Managerial implications. In line with the increasing request for special interest tourism based on educational activities, industrial tourism may intercept an increasingly larger share of the demand for cultural tourism. In the attempt to get a full picture of industrial tourism within Italian regions, the present study highlighted a rather heterogeneous situation. Obviously, for the different regional areas the demand for industrial tourism products very much depends on the kind of attractions within their borders. Corporate museums created around well-known and historical brands, such as Ferrari or Lamborghini, are naturally able to attract more visitors. Furthermore, corporate museums and industrial heritage sites focused on goods with a symbolic value for the region, as well as luxury goods and goods of everyday life have a great potential as industrial tourism products (Otgaar et al., 2010). Another factor to be considered is the size of the local market, which could partly explain some of the regional differences. Similarly, regions with a stable and strong tourist demand represent the favorable context for the development of an alternative blend of attractions on offer, which can be interesting for experienced tourists that have already visited the “must see” attractions. As both territorial areas (cities and regions) and companies (i.e., those owning and managing corporate museums) have a potential interest in the development of industrial tourism, our study offers guidelines for policy makers, destination marketing organisations and private operators, whose converging interests could provide a lot of opportunities.

Importantly, particular attention should be paid to potential synergies between the different sub-groups of industrial tourism, such as industrial heritage and corporate museums, to be considered as interconnected attractions. In this vein, visits to operational companies should be also considered as a central element of industrial tourism offer, able to offer to visitors valuable opportunities for authentic and satisfying recreational experiences, based on the observation of what is “behind the scene” of manufacturing activities (Savoja, 2011). Therefore, combination between different products is essential to make industrial tourism more attractive. Packages may include visits to several corporate museums (often combined with factory tours, as in the case of the automotive district in Emilia-Romagna). Furthermore, industrial tourism products can be combined with more traditional tourism attractions, in order to develop complete packages of cultural tourism, integrating different aspects of learning and leisure. Therefore, industrial tourism programs can be defined both as a driving force for the development of areas less suited to tourism and as an addition to the rich tourism product of cities and regions. In the latter case, industrial tourism initiatives not only target tourists, specifically second time visitors who want to see something different, but also residents who want to learn more about the regional productive excellences of the past and present and who can act as proud ambassadors of each region.

Our results highlighted that some regions have a good potential but are not able to fully exploit it. In these cases, the cooperation between public and private actors appears as particularly relevant, as well as the development of a strategy in which the main objectives of industrial tourism should be specified to gain support also from central governments. Along with adequate target group selection, the demand and attractiveness for industrial tourism can be enhanced by providing special visitor facilities, such as professional guides, interactive information panels, presentation facilities and so on (Otgaar et al., 2010). Furthermore, accessibility is very important for making industrial tourism products attractive, not just in terms of ease to reach a destination, but also regarding the availability of other tourism products nearby.

Originality of the paper. We believe that our study adds in different ways to the field of industrial tourism, which is a relatively unexplored topic in the broad field of cultural tourism. First, we considered different manifestations of industrial tourism, including visits to both corporate museums and industrial archaeology sites. Thus, we expanded the narrow view of industrial heritage tourism, which has long prevented the development of a comprehensive definition of tourist activities oriented toward the knowledge of production processes characterizing the past and present of specific territorial areas. Second, we focused on Italy, which compared to other countries with a long industrial history, such as Germany and UK, only recently has devoted attention to industrial tourism both in terms of academic reflection and concrete development programs. Finally, to the best of our knowledge, this is the first study applying the Florence Index (FI) to assess the degree of specialization of Italian regions in terms of industrial tourism. Highlighting differences and similarities between regions may help scholars, policy makers and private operators to reflect on the strategic contribution of industrial tourism to the competitiveness of the cultural tourism offer and guide them in the definition of a strategy aimed at reaching a competitive advantage over other areas.

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Crossing Green Tracks: The Role of Monumental Railways in Promoting Eco-Sustainable Business in Slow Tourism

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Abstract

Rail tourism is an industry that consistently generates economic value in numerous global regions, making substantial contributions to the fiscal well-being of governments that frequently provide support. Its growth can be attributed to emerging trends and increased environmental awareness among tourists. Monumental railways in Europe are significant sources of prosperity, encompassing substantial financial gains and a substantial influx of tourists. This form of rail tourism is classified as “slow tourism” which encompasses more than simply commuting to reach a destination; it also provides an opportunity to appreciate the journey, explore the uniqueness of historical sites, dine on cuisine originating from within a zero-kilometer radius, and interact with local communities and their culture.

By employing Green theory and Co-creation value, this article attempts to demonstrate how the utilization of the historic railway network in a particular Italian region, Sardinia, can serve as an example of a novel eco-sustainable business model capable of fostering revenue generation (economic sustainability), positive impacts on the local community (social sustainability), and territorial stewardship (environmental sustainability).

Key words: Railway Tourism; Slow Tourism; Historic Railways; Sustainability; Green Theory; Co-creation Value.

Framing of the research. Rail tourism is a sector that in various parts of the planet manages to create value year after year, making an important contribution to the economic growth of the countries that support it. Although the figures for rail tourism are significantly lower than those for air tourism, the rail tourism sector is growing mainly due to new trends and awareness among tourists who are more and more aware of their ‘environmental footprint’ than in the past (Commission, 2020).

In the rail tourism, the scenic view is a pivotal element, regardless of the journey’s length. This consideration radically shifts the perspective of analysis of the phenomenon from a purely transport point of view to a more complex one which involves the tourist, cultural and environmental dimensions. Consequently, it is no longer a question of choosing a means of transport but of conceiving the travel experience as something much more engaging guided by important values such as sustainability. Examples of this perspective can be found in the United States, where Amtrak provides a complete network connecting the entire country with Canada, treating travellers to an exceptional voyage highlighted by the breathtaking landscapes and natural beauty encountered along the route. In Africa, the prestigious Blue Train connects Cairo to Cape Town, traversing pristine landscapes and protected nature reserves, offering passengers a lavish travel experience. In Europe, the unique geography and distinct borders between countries create a highly segmented landscape, ideal for rail tourism that goes beyond long-distance travel, aligned with the concept of slow tourism, as it favours the discovery of historic centres, local cuisine at “km zero”, of the culture and communities along the route (Campolo, 2018).

Among the European countries that already exploit historical railways for tourism purposes, Great Britain and France are the ones with particularly significant values, both in terms of tourist flows and annual revenue. Great Britain with 850 km of lines has 139 tourist railways, and generates revenues of £400 million by attracting 13 million visitors per year (F.I.F.T.M., 2018). In France, on the other hand, it can be observed how the 1,200 km of tourist railways attract almost 4.5 million visitors per year, creating a turnover of about 60 million euros and a total of about 1,000 new jobs (Blancheton & Marchi, 2013).

In Italy, tourist railways are regulated by the Italian Law 23 August 2017, n. 128 and subsequent amendments and additions. The railway routes for tourist use are identified in Annex 1 of Interministerial Decree no. 146 of 17/05/2022 and add up to a total of 1,142 km. Of these, four sections are in Sardinia, for a total length of the routes equal to 438.7 km corresponding to 38.4% of the overall Italian total, (ARST, 2019). Moreover, in the case of Sardinia it must also be

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considered that these are “narrow gauge” railway routes, these stretches are unique in Europe, representing as much as 90% of the European total.

Purpose of the paper. Unlocking the Potential of Slow Tourism through Italian Legislation. This research proposal is designed to explore how to leverage the opportunities presented by the aforementioned law to enrich the tourism sector through slow tourism. The goal is to drive economic growth for the region and deliver beneficial outcomes for both the land and its people (social sustainability), while steadfastly upholding environmental conservation (environmental sustainability) and enhancing financial prosperity (economic sustainability).

To grasp the potential of this initiative, it is helpful to revisit Article 1 of Law 128/2017, which explicitly states:

“The purpose of this law is to safeguard and enhance railway sections of particular cultural, landscape and tourist value, which include the railway routes, stations and related works of art and appurtenances, and of the historic and tourist rolling stock authorized to use them, as well as the regulation of the use of velorails”.

The mention of the Law 128/2017 helps us categorize two distinct types of railway tourism. The first, of a contemplative nature, relies on the traditional use of trains, frequently comprised of vintage rolling stock that has been refurbished and, in certain instances, specifically adapted to be truly ‘green’—a status not yet achieved in areas like Sardinia. The second type is ‘active/experiential’ tourism, uniquely associated with the opportunity to travel these routes aboard a “ferrocycle”, a four-seater vehicle propelled by the pedalling of its passengers (Melis, 2021).

Furthermore, a significant innovation of Law 128/2017 is highlighted in Article 5, which offers the opportunity for regions traversed by railway routes to become key drivers in their socio-economic development. This is achieved by allowing them to request control over parts of these routes. Consequently, they can plan, organize, and implement their own tourism initiatives, ranging from contemplative to experiential activities, across the entire railway network. This approach enables a broad spectrum of entrepreneurial, social, and cultural entities to actively engage in enhancing the travel experience. They can do so by offering accommodation, local gastronomy, visits to nearby natural and archaeological sites, and participation in historical and cultural festivities, among others. Such engagement fosters a more profound connection with the local environment, culture, and traditions.

This research aims to exploit the potential of this law, in accordance with the paradigm that not only mitigates the carbon footprint linked with frequent travel but also champions the conservation of cultural heritages and natural resources, and moreover generating value by involving, in a bottom-up perspective, neighboring communities through job creation and entrepreneurial activities.

Although the academic literature lacks a consensus on slow tourism’s precise definition, scholars like Babou and Callot (2009) and Blanco (2011), and others have explored its multifaceted dimensions, underscoring its emphasis on quality experiences, local immersion, and environmental consciousness (Conway & Timms, 2010; Dickinson & Lumsdon, 2010; Dickinson et al., 2011; Matos, 2012; Savoja, 2011), all aspects strongly present in the purposes that the Italian law aims to promote.

The research further explores how slow tourism, both contemplative and, more importantly, active, bolsters local economies by channeling tourist expenditures toward small businesses, artisanal ventures, and local services, thus nurturing community development and resilience. This strategic shift from mass tourism, with its penchant for concentrated economic benefits and environmental disregard, paves the way for a more equitable and sustainable tourism revenue distribution.

Intriguingly, Timms and Conway (2012) anchor slow tourism within alternative tourism models like eco-tourism and community tourism, which are sustainable by nature, utilizing local resources effectively. They tie the concept of slow tourism to sustainable development as outlined by Campbell (1996), advocating for economic growth, environmental preservation, and social equity as its foundational pillars.

Monumental (or historical) railways stand as a testament to slow tourism’s ethos, offering transformative journeys that immerse travelers in the rich tapestry of regional histories, cultures, and landscapes, thereby endorsing sustainable travel experiences. As a cornerstone of rail tourism, these railways attract enthusiasts eager to relive the grandeur of travel’s golden era, navigating scenic and historical corridors. This segment, though smaller in comparison to air travel, significantly contributes to regional economic vitality, spurred by evolving trends and heightened environmental awareness among travelers. Italian Federation of Tourist and Museum Railways (FIFTM) statistics highlight the economic impact of tourist railways in Great Britain and France, underscoring the viability of rail tourism as a lucrative and sustainable venture.

This narrative of rail tourism, evolving towards more leisurely and experience-centric travel, in France dovetails with the Special Interest Tourism (SIT) category, emphasizing sustainable practices within the railway tourism sector Blancheton and Marchi (2013). This evolution towards slow rail tourism, prioritizing landscape exploration, cultural immersion, and the pursuit of new experiences, marks a shift away from the necessity of rapid travel, enhancing the overall journey’s allure.

The Italian legislation of 2017, then signifies a watershed moment for sustainable tourism, highlighting the untapped potential of historical and cultural rail routes for fostering sustainable tourism initiatives (Maggi, 2003).

For Sardinia, leveraging Italian Law 128 effectively could mitigate several challenges facing tourism in the region by:

- a) enabling the development of tourist offerings beyond the summer season, diversifying the region’s attractions beyond just beach resorts;

- b) *facilitating the integration of coastal tourism with that of the interior regions, which are experiencing alarming depopulation trends, thus reversing a seemingly irreversible negative trend;*
- c) *Transforming historic railways into assets that generate economic growth through entrepreneurial ventures, while also safeguarding cultural heritage and environmental legacies;*
- d) *To forge a robust partnership between communities and public administration, aimed at fostering and advancing the growth of this initiative.*

Methodology. Our study is rooted in the Green Theory (Dunne et al., 2021; Wagner, 2002) and value co-creation (Galvagno & Dalli, 2014; Prahalad & Ramaswamy, 2000; Prahalad & Ramaswamy, 2004).

This interdisciplinary approach allows us to delve deeper into environmental sustainability, highlighting the imperative for businesses to implement strategies that reduce their ecological footprint while promoting environmental protection (Raimi, 2017). At the same time, it considers synergistic collaborations between different actors (public and private) as an essential element for designing, supporting, including financially, organizing and managing the multiplicity of services to be activated or the infrastructural implementation and maintenance activities, in a perspective of co-construction of value for the different stakeholders (Melis, 2018; Melis et al., 2023).

On one side, Green Theory, under the Corporate Social Responsibility umbrella, advocates for the infusion of environmental considerations into corporate operations. This perspective not only scrutinizes the environmental repercussions of business activities but also evaluates their contributions towards sustainable development. Green theory represents a cross-disciplinary approach that intersects management, environmental sciences, social sciences, and more recently, international relations. It highlights the negative impacts of economic growth on climate change, emphasizing the importance of considering the rights of individuals, justice, citizenship, good governance, and environmental preservation. In line with this, environmentalists and ecologists encourage industries and manufacturers to integrate green principles into their operations and production strategies, aiming for sustainable benefits for both consumers and the environment over time. On the other hand, the value co-creation theory strengthens the previous approach as it places emphasis on the strategic importance of collaboration and mutual learning to operate together with a view to generating value for all stakeholders. This approach requires capabilities about dialogue, access of relevant resources for strategic making, risk assessment and individual responsibility making choices, transparency and reciprocity in the relationship among several stakeholders (Prahalad & Ramaswamy, 2004).

In order to evaluate the potential inherent in the law we make use of two methodological tools:

- An exploratory market research carried out with a semi-structured questionnaire submitted to potential consumers to evaluate their knowledge on railway tourism and, above all, evaluate the interest in enjoying a ferrocycle experience (study a);
- a case study focused on the use of the ferrocycle along a short stretch of the historic “Mandas – Arbatax” railway line, exactly the “Gairo – Nìala” one, combined with a business plan to evaluate the financial feasibility of the project (study b).

Results. This analysis is still in progress and early results can be summarized as follow:

Study (a). The questionnaire.

We conduct an initial analysis using a semi-structured questionnaire comprising 28 questions. This is designed to gauge understanding of previously defined slow, contemplative, and active tourism forms, with a specific focus on familiarity with ferrocycling and interest in engaging with this muscle-powered mode of transport.

In this paper, we present only a selection of our findings for two reasons: data collection is still in progress, and our researchers aim to produce a more comprehensive study for future publication, supported by a stronger dataset.

The data collected at the time of preparation of this work concerns 810 questionnaires, of which 760 were correctly completed, divided by gender: 46.5% male and 53.5% female.

Early following elements emerge:

- 87.5% of respondents did not know the existence of the ferrocycle while 74.32% had no idea that in the context of slow tourism it is possible to distinguish between “contemplative” and “active” tourism;
- Among those who know it, 37.5% have tried it in France, 12.5% in Switzerland and 6.25% in Belgium;
- Again, among those who have experienced the ferrocycle all declared that they were able to cross and visit rural and naturalistic areas, partly also archaeological or areas of historical and artistic interest;
- Everyone who has lived the experience has benefited from it and would recommend others to do it;
- When asked if they would have liked to travel along a railway line in Sardinia with the ferrocycle, 43.35% answered “definitely yes”, 37.85% “maybe yes”, while 10.49% answered “I don’t know” and only 7.3% answered “maybe not” or “definitely not”;
- Similar percentages are found regarding the interest in staying in accommodation facilities located along the railway route that have been adequately renovated to provide quality services;
- Furthermore, another interesting data concerns the duration of a trip to be made with the ferrocycle for which 42.6% hypothesized “from 1 to 2 days”, 30.82% “from 3 to 5 days”, 13.43% “no more than one day”, 9.46% “from 6 to 7 days” and, a small percentage even for a longer time.

These preliminary findings indicate a substantial interest among both local communities and prospective users. Study (a) uncovers considerable potential for ferrocycle utilization in Sardinia.

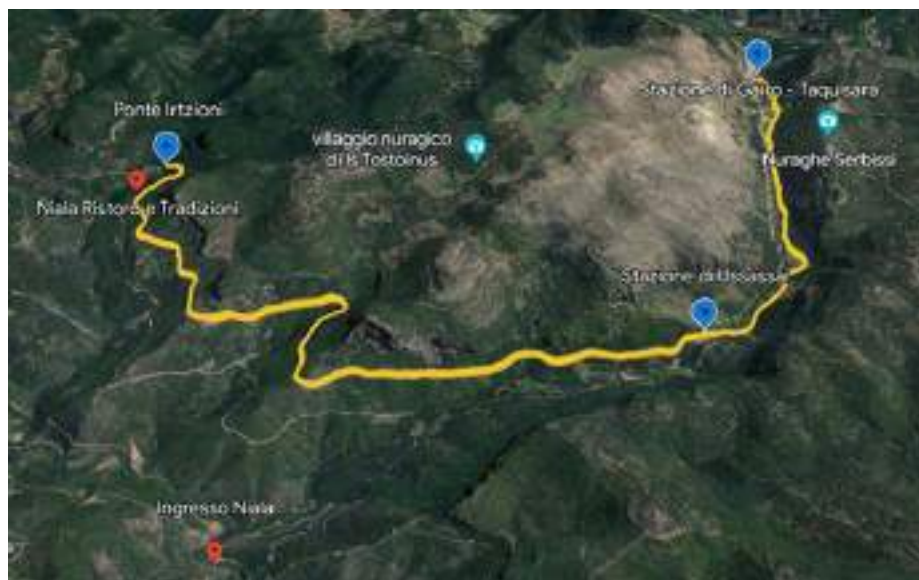
Study (b). The business plan.

In order to support the idea also from a financial and economic point of view, the study (a) was also supported by the provision of a Business Plan.

The findings from this business plan, shortened below, illustrate qualitative features and the economic feasibility of the investment, showcasing its viability.

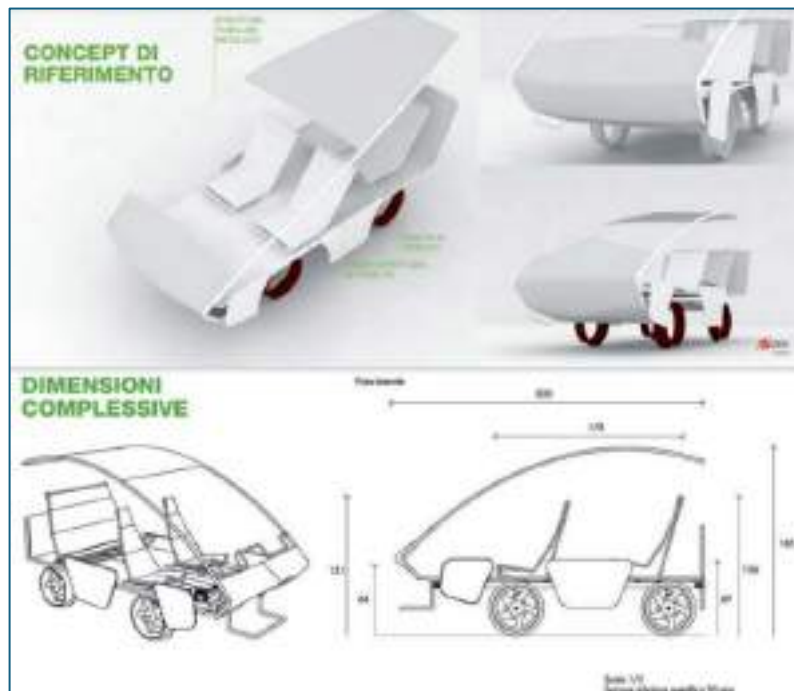
Business Model: In harmony with the law 128/2017, the business plan provide the management of the Gairo-Niala route is envisioned to adopt a cooperative approach, with the train station and the route being managed by a consortium of operators, through which to plan, organize and manage, in safety, tourist services complementary to the railway, taking advantage, above all, of the great experiential opportunity offered by the ferrocycle. It is reasonable to expect that this management role will be undertaken by a local tourism-sector cooperative, similar to practices observed with comparable entities across regional and national contexts. Such a cooperative would be tasked with staffing the station with skilled personnel dedicated to providing visitors with an exceptional tourism experience. The organization will form strategic partnerships with local entities like restaurants, producers, riding stables, hiking operators, and transfer services. This collaboration aims to offer clients exclusive discounts and broaden our venture's visibility through mutual promotion. Naturally, an important commitment must be dedicated to building these partnerships from a value co-creation perspective, without which there is a risk that the initiative will not function adequately and in compliance with the spirit of Italian law.

Figure 1. Gairo-Naila' railway route, train station called Taquisara



Product and Service description: The Gairo - Taquisara station is set to offer a diverse and enriching experience, aiming to provide visitors with a comprehensive journey. The primary attractive service will be the rental of ferrocycles for traversing the scenic 10-kilometer Gairo - Niala route. Beyond its core offering, the station will be transformed into a "museum station," enabling its spaces to serve multiple functions beyond just ferrocycle usage. These include hosting special events by renting out parts of the station, thereby leveraging its historical and cultural significance. Characteristic of Sardinia's historic railway stations, the Gairo-Taquisara station possesses unique qualities conducive to historical and cultural promotion, thereby adding to the region's rich heritage. A distinctive feature of this station will be an on-site shop offering tourists a glimpse into local craftsmanship and the opportunity to purchase souvenirs, enhancing the visitor experience. Furthermore, the station will provide bicycle rentals to encourage exploration of the surrounding landscapes, enriching the visitor's experience further. This multifaceted approach, combining leisure with cultural and historical education within the station-museum, is key to the initiative's success. As detailed in the financial overview, this model is projected to yield positive outcomes from the second year onward. Introducing ferrocycle rentals presents an unparalleled innovation in Sardinia, distinct from any existing options like the Green Train, which operates without conflicting schedules. Additionally, there are indirect competitors, specifically eight bicycle rental services across Ogliastra, none of which are in close proximity to the Gairo station. These services, however, cater to a different demand, focusing on traditional cycling experiences rather than the niche ferrocycle rail journey. Consequently, our competitive analysis will primarily focus on the Green Train, the sole direct competitor in this innovative tourism venture.

Figure 2. By courtesy of IED.



IED-owned project, designers: M.Bosa, S.Carta Vasconcellos, A.Cocco

Figure 3. Source blog.tuttotreno.it (2018)



ref. <https://blog.tuttotreno.it/wp-content/uploads/2019/03/Velorail.pdf> retrieved march 2024

(We express our sincere gratitude to Dr. Engineer Gianfranco Damiani for generously allowing us the use of the photograph and for sharing pertinent data regarding the ferrocycle prototype.)

Market and opportunities: The primary audience for the experience we offer is centered around slow tourism, outdoor adventures, and nature exploration. However, it's important to note that our offering is designed to appeal to a broad spectrum of market segments, making it a universal proposition. The real breakthrough lies in the introduction of the ferrocycle to rail tourism. As we will delve into in subsequent sections, this innovative mode of travel has the potential to attract a significant number of tourists not only from Ogliastro but from wider regions as well. Introducing the ferrocycle is expected to drive deseasonalization, fostering economic expansion, particularly in regions like Ogliastro, predominantly recognized for their picturesque coastlines. The forthcoming charts, courtesy of the Sardinia Region Tourist Observatory, illustrate the patterns in tourist arrivals across Sardinia, zooming in on Ogliastro and, more specifically, the municipality of Gairo over the past three years. This data underscores the potential for the ferrocycle to diversify and enrich the tourist appeal of these areas throughout the year. Moreover, The 2022 Sardinia Tourism Report

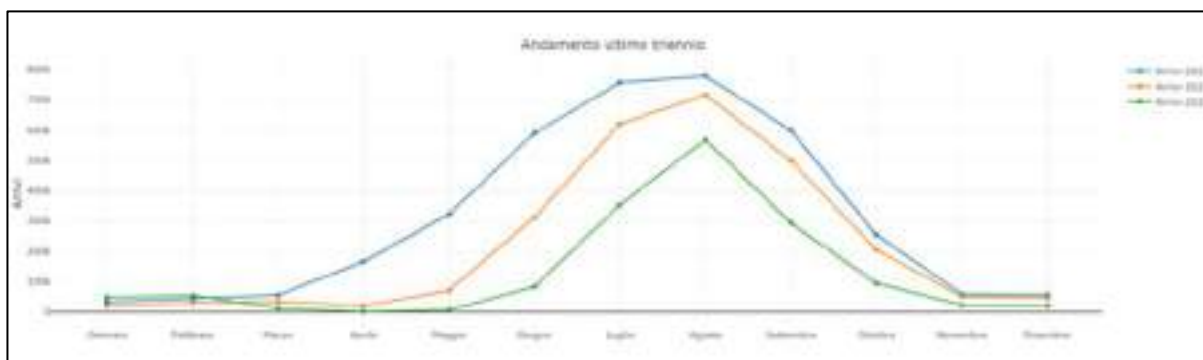
highlights that Nuoro province experienced 598,315 tourist arrivals and 2,896,781 overnight stays, with an average duration of 4.84 nights, predominantly from Italian visitors. Gairo municipality saw 8,130 arrivals and 13,873 stays, with a notable majority of foreign tourists. Projections suggest that introducing the ferrocycle at the Gairo station for the “Gairo - Niala” route could surpass Gairo’s 2022 tourist arrivals by the second year of operation. This anticipated success is attributed to the unique appeal of renting ferrocycles in the province, positioning the Gairo station as a major draw not just locally but also for visitors from nearby areas like Cardedu. The expected increase in visitor flow to the Gairo - Taquisara station is depicted in the accompanying graph, showcasing the station’s potential to boost tourism significantly.

Competitive advantage: Our business model mandates that each station within the tourist railway network, as well as their operating entities, are to be coordinated under the oversight of a Foundation that should involve the municipalities crossed by the railway, the Sardinian Region and the private actors interested to offer local products and services. This arrangement ensures that the ferrocycle service complements, rather than competes with, the already existing Green Train service in region. To achieve harmony and avoid any operational overlap, the usage of rail routes will be meticulously scheduled, ensuring seamless integration between the two services without any interference.

The ferrocycle represents a forward-thinking step into the “slow” and “active” tourism sector, an expanding market niche ripe for competitive differentiation. Our organization will establish its competitive edge through three key factors:

1. **The unique context** The chosen territory boasts distinct features that make it especially appealing to our target audience, providing an ideal backdrop for the ferrocycle experience.
2. **Expert Staffing:** Our team of knowledgeable personnel ensures that visitors will receive high-quality service and an immersive experience, further enhancing the appeal of our offering.
3. **Eco-Friendly and Economical:** The ferrocycle stands out as an entirely eco-sustainable mode of transport, with low maintenance costs. Its design is particularly well-suited to navigate Sardinia’s historic railways, characterized by their “narrow” gauge of 950 mm. This alignment with both environmental sustainability and economic efficiency forms the foundation of our project’s competitive advantage, positioning the ferrocycle as a unique and sustainable choice for exploring Sardinia’s rich heritage.

Figure 4. Source: osservatorio.sardegnaturismo.it



ref. <http://osservatorio.sardegnaturismo.it/it/dashboard/dati-2022>
retrieved march 2024

Management team and Financial and economic previsions: According to our projections, the station’s management team will comprise two key roles: a Station Manager and an Experience Coordinator. The Station Manager will oversee the financial and commercial operations, including accounting, reservations, retail operations, cash flow, performance reporting, and inventory management. The Experience Coordinator will be responsible for the enriching aspects of the service, including organizing guided tours, performing routine maintenance of the ferrocycles, and coordinating events. Supporting these primary roles, we plan to employ up to two seasonal staff members during peak periods to manage increased demand.

The projected income statement illustrates the financial outcomes anticipated from this initiative. Positive financial results are expected by the second year, ensuring the organization’s viability and prosperity. This statement will be dissected to thoroughly examine both revenue streams and cost factors, providing transparency on the calculation methodology employed.

Research limitations. Two principal constraints in our examination of the respective studies are:

The initial study, employing a sample size of over 800 questionnaires, yielded remarkably definitive findings concerning the ferrocycle’s potential. However, this sample predominantly reflects perspectives within the Sardinian context. To enhance the study’s applicability and robustness, it’s recommended to broaden the participant base to include prospective users from beyond this geographic scope.

Regarding the business plan analysis, its primary limitation stems from the relatively narrow focus on a specific route segment. This segment represents only a fraction of the extensive 438 km network of Sardinia’s historic railways as

documented by (ARST, 2019). Future research endeavors would greatly benefit from an all-encompassing study covering the entire network. Such a comprehensive approach could yield a deeper understanding of the opportunities for fostering slow tourism and eco-friendly transportation throughout the region. Expanding the scope of analysis promises valuable insights into the feasibility of scaling the ferrocycle integration and business model across broader regional or even national boundaries.

Managerial implications. This research offers substantial contributions to both the academic discourse and practical implementations, particularly within the domains of slow tourism and sustainable business models. From a theoretical standpoint, it advances the discourse in slow tourism by delineating two key segments: “contemplative” tourism and “active” tourism. This distinction enhances our understanding of visitor engagement and preferences within the context of railway tourism. Furthermore, the study underscores the emergence of a novel vehicle, known in Italian as the “ferrocycle.” It facilitates a deeply immersive and engaging experience for travelers, allowing them to connect intimately with the journey. This model is anchored in the rich cultural heritage of the region’s historical railways, emphasizing the preservation and valorization of cultural heritage as a cornerstone for sustainable tourism practices.

From a managerial standpoint, our research outlines a viable business model that demonstrates how to effectively utilize existing infrastructure by incorporating an innovative transportation method that change it moving the experience from the transport point of view to a one much more immersive cultural, environmental, historical, and territorial grounded. It showcases the potential of transforming traditional tourism practices through strategic partnerships with public administrations, highlighting the benefits of such collaborations in revitalizing neglected or underused infrastructures. This approach not only opens new avenues for business ventures but also emphasizes the importance of synergy between the private sector and public authorities in fostering sustainable development, in a value co-creative perspective.

Furthermore, our findings offer valuable insights for policymakers, advocating for the formulation and implementation of policies that encourage private-public partnerships. It is imperative for the Autonomous Region of Sardinia to legislate on this subject with fidelity to the principles outlined in Law 128/2017, ensuring the law’s integrity is maintained. This means allowing for the development of regional offerings from the grassroots level, thereby empowering local territories to take charge of their own tourism and economic development initiatives. In this context, the proposal to establish a Foundation must adhere to a bottom-up approach. It is critical that such an entity is not formed through top-down directives, nor should it include the railway network’s maintenance service provider in its management. Involving the maintenance service provider could lead to potential conflicts of interest between those tasked with strategic planning and those responsible for operational oversight. This separation ensures that the development of the region’s tourism and cultural heritage can proceed without compromising the objectivity and independence necessary for sustainable growth and innovation.

These policies, aimed at redeveloping and repurposing existing infrastructures, have the dual benefit of stimulating economic growth and enhancing community welfare. By facilitating the integration of eco-friendly transportation options like the ferrocycle into the tourism sector, policy-makers can ensure the sustainable development of tourist attractions that minimize environmental footprints. Consequently, this research underscores the potential of such initiatives to generate value not only for business operators but also for the broader community, by transforming previously neglected areas into vibrant tourist destinations without compromising environmental integrity.

Originality of the paper. This investigation establishes a transformative method to stimulate Sardinia’s legacy rail paths by endorsing the ferrocycle, an innovative vehicle set to redefine the essence of leisurely exploration while foregrounding ecological integrity. The originality of our inquiry lies in the strategic deployment of this entirely green transportation mode. It aims to rejuvenate the disused historical railways of Sardinia, propelling the island into the spotlight as an ideal locale for the contemplative tourism. This maycraft a paradigm of innovation that could encourage similar revivals across Italy.

Moreover, the analysis extends to examining the pivotal role of Law 128/2017 in backing sustainable business endeavors that seek to refurbish ancient railway corridors. The ferrocycle, a wholly sustainable cycling railcar, is at the core of our proposal, designed to marry the conservation of historical sites with the advancement of eco-friendly tourism. The study highlights the ferrocycle’s ability to reenergize Sardinia’s railway infrastructure, enriching the tourist experience with leisurely paced journeys and simultaneously stimulating economic prosperity through the integration of ancillary services. Beyond uncovering the latent potential of Sardinia’s historical rail tracks, and the exploitation of the Law 128/2017 position the ferrocycle as a trailblazing instrument for sustainable progress and innovation in tourism, with far-reaching implications.

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Contributing to Cultural Welfare: A Critical Review of Methods for Measuring the Impact of Culture on Sustainability and Well-being

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Abstract

In the context of increasing attention to cultural value and the value of culture for people and society, this paper provides a narrative critical review of methods for measuring the impact of culture on sustainability and well-being. After clarifying the interconnected and multifaceted concepts of culture, value and measurement, the research critically discusses different methods for grasping and understanding the benefits of culture. Both scientific literature and international documents are thoroughly examined to cluster current tools and models, identify gaps in the current debate on cultural welfare, contribute to theoretical development and provide recommendations for cultural management.

Key words: culture; value; measurement; impact; sustainability; well-being

Framing of the research. Defining and measuring the value of culture means navigating and disentangling complex and intricate concepts, such as those of culture, value, and measurement.

First, the overlapping and competing dimensions of culture, including its dual nature, should be recognised: on the one hand, culture refers to a limited set of activities produced by human beings; on the other hand, in a broader sense, it includes everyday activities as a whole in their different facets – social, economic and political ones (MacDowall, 2015, p. 2).

Regarding value, in the current context, its subjective nature is widely accepted. Recognising its extrinsic and relational nature means overcoming the misleading distinction between intrinsic and instrumental value. Indeed, as argued by Montella (2009, 2016), value always requires assessment by an external subject. When evaluating cultural services, value is influenced by the context in which the interaction takes place and depends on the characteristics of the offer and its users – their needs and desires, as well as the resources they have for benefiting from a service (Montella, 2016, pp. 109-110).

Finally, measurement cannot be reduced to the economic-monetary evaluation (Redden, 2015, p. 31). Measuring is a broad and multifaceted activity which entails defining the aspects to be included in the analysis, methods to be adopted, and processes to be implemented to make measurement a valid tool to support cultural management and the sustainability of cultural activities in the long term.

Nowadays, culture has become an essential component of sustainable development (Cicerchia, 2021). It is considered the fourth pillar of sustainability (Culture in Sustainability), a point of convergence with a mediating function between the three traditional pillars (Culture for Sustainability), and a central hub for the other pillars of sustainability, that is, the global dimension of sustainability (Culture as Sustainability) (Soini, Dessein, 2016).

Aiming to measure and monitor the contribution of culture to the national and local implementation of the Goals and Targets of the 2030 Agenda for Sustainable Development, in 2019, UNESCO provided 22 thematic indicators for culture (Culture | 2030 Indicators) divided into four areas:

1. Environment and resilience: (1) expenditure on heritage, (2) sustainable management of heritage, (3) climate adaptation and resilience, (4) cultural facilities, (5) open space for culture;
2. Prosperity and livelihoods: (6) culture in GDP, (7) cultural employment, (8) cultural businesses, (9) household expenditure, (10) trade in cultural goods and services, (11) public finance for culture, (12) governance of culture;
3. Knowledge and skills: (13) education for sustainable development, (14) cultural knowledge, (15) multilingual education, (16) cultural and artistic education, (17) cultural training;
4. Inclusion and participation: (18) culture for social cohesion, (19) artistic freedom, (20) access to culture, (21) cultural participation, (22) participatory process.

Although the dimensions mentioned above represent an overall contribution of culture to sustainability goals, this framework lacks a further step in recognising the close interlink between sustainability and well-being. As O'Mahony (2022) pointed out, even though sustainability and well-being are two global political priorities with various overlaps,

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they remain isolated, and well-being is poorly characterised in sustainability. In this regard, Chapter Six of the World Happiness Report 2020 addressed the connections between sustainable development and human well-being, studying the empirical relationship between the SDGs and subjective well-being using data from the SDG Index and the Gallup World Poll (De Neve, Sachs, 2020).

Due to the numerous interconnections between these concepts, it is crucial to incorporate a sustainability perspective when contemplating human well-being in the cultural sector.

Well-being is a multidimensional concept that encompasses every aspect of the life of individuals and communities. Swarbrick (2006) identified eight dimensions of well-being: physical, spiritual, social, intellectual, emotional/mental, occupational, environmental, and financial. In the current scenario, the close link between well-being and health that we can observe results from the revolution that has transformed the concept and definition of health (Cicerchia, 2022). Indeed, the shift from the bio-medical model to the bio-psycho-social model represents a fundamental change in the way health and illness are understood and approached (Engel, 1977). This model widens the focus, previously centred on purely biological factors, by incorporating psychological and social factors into the understanding of health and illness, highlighting how an individual's well-being depends on all three spheres. Indeed, the concept of health has enlarged its horizons since the World Health Organization (WHO) provided a definition in 1948 that has remained unchanged ever since: "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1948, p. 1). The definition of health rooted within society and culture, influenced by internal and external determinants, together with the salutogenic approach introduced by Antonovsky (1996), provided a new framework to understand and promote factors that contribute to health and well-being. In 2020, WHO added that health and well-being "are influenced by a range of biomedical, psychosocial, social, economic and environmental factors that interconnect across people in differing ways and at different times across the life course" (WHO, 2020, p. 39).

This emerging approach has impacted the evaluation of culture. Thus, when analysing cultural policies and activities promoted by cultural organisations, scholars have devoted increased attention to the impact of culture on the quality of life, health and well-being, as well as on the economy and society at local, national and international levels (McCarthy et al., 2004; Bollo, 2013; Lee, 2013; Scott, 2013; Tuck, Dickinson, 2014; O'Brien, 2015; Cicerchia, 2017a, 2017b, 2022; Crossick, Kaszynska, 2016; OECD, ICOM, 2018; Brown, 2019; Gariboldi, Marconi, 2021).

Moving from the theory to the practice of evaluation, the first issue to define is the field of investigation (what to measure). Indeed, measurement can be applied not only to the effectiveness of public policies at different levels, i.e. European, national, regional and local, but also to the activities carried out by a single organisation or, more specifically, to a single project or activity. Second, it is a matter of how, that is, choosing the methodology, which could be qualitative or quantitative or mixed, also considering difficulties in quantifying dimensions that are not necessarily quantitative. Furthermore, we cannot overlook the effects of measuring. As already argued, not only do numbers matter (Blomkamp, 2015, p. 12), but they have the power to construct understanding of the world (Redden, 2015, p. 29). Another crucial aspect is the need to standardise methodologies to compare data. Finally, we must take into account the reasons for measuring. This issue has become relevant in the context of spending review – and connected austerity measures in using public resources – and evidence-based policy and public management. Thus, measurement has become central for accountability, especially in the case of public policies or activities carried out by public organisations or financed by public expenditure. In addition, it has recently been recognised as an essential tool for promoting cultural welfare.

Purpose of the paper. The paper aims to provide a review of methods for measuring the impact of culture on sustainability and well-being. To achieve this goal, we analysed models for holistic impact assessment, focusing on the tools they offer for measuring the contribution of culture to promoting multidimensional forms of well-being of both communities and individuals. The research critically discusses different methods for grasping and understanding the multifaceted benefits of culture. It seeks to identify the nuances and synergies that emerge when multiple dimensions of impact assessment are considered simultaneously. The analysis intends to identify gaps in the current debate, contribute to theory development and provide recommendations for cultural management.

Moreover, the research investigates if and how these models adopt both a multidimensional approach and a multi-stakeholder perspective, highlighting tools designed for different beneficiaries: cultural and creative organisations, policymakers, individual citizens, or communities. The attention to these specific elements is the basis for the next step of the research, namely the definition of a holistic framework integrating different scientific contributions. This model may be specifically tailored to the evaluation of cultural and creative activities, providing an approach that embeds the principles of cultural welfare into the managerial structure, from design to evaluation. Cultural welfare practices lack a shared impact assessment conceptual framework and model; their evaluation is often limited to spot intervention, missing the opportunity to root this approach in the way an organisation works. In doing so, we aim to contribute to advancing methodologies that capture the intricate interplay between cultural, social, economic, and environmental factors, ultimately promoting a more holistic understanding of the broader impacts of cultural initiatives.

Methodology. The research is developed by adopting a narrative critical review (Green et al., 2006; Ferrari, 2015; Pautasso, 2019). Both scientific literature and international documents were thoroughly examined. In addition to scientific databases such as Scopus, Web of Science and Google Scholar, grey literature was investigated. Even if the narrative review is more likely to introduce bias because it includes only research selected by the authors, in this case, it was preferred because it allowed the authors to include policy documents, green papers and project reports that are not retrieved by academic databases.

Due to the many methods and approaches, navigating this topic can be very challenging. A key contribution to better understanding the geography of impact assessment approaches came from the SoPHIA project and its deliverable 1.2, “Concise Essay mapping existing Gaps, Issues and Problems”.

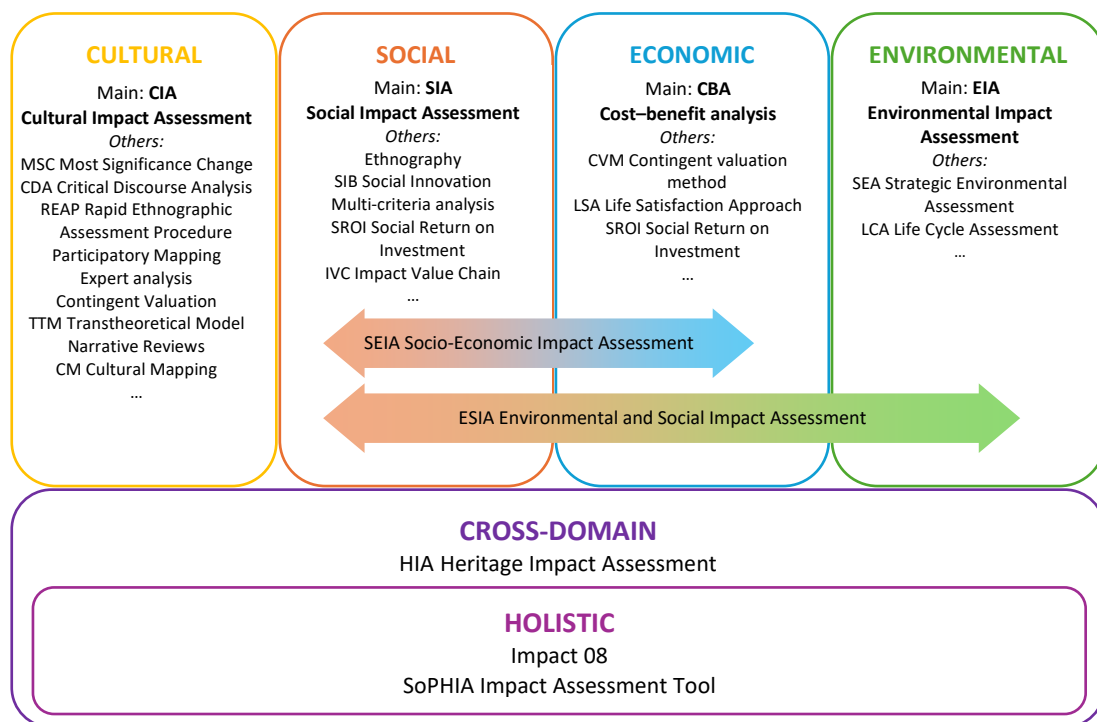
Results. For a long time, impact assessment in the cultural sector has been characterised by a clear, almost impenetrable, delineation of the areas of investigation. Evaluation practices, borrowed from other sectors to the cultural one, were often limited to a single domain – social, cultural, economic, or environmental – losing sight of the interconnections and mutual influences between the different impact spheres of these activities. Consequently, cultural impact has often been evaluated through a narrow lens rather than adopting a holistic framework to understand its effects. In more recent times, evaluation tools designed at the intersection of different areas of investigation have begun to appear, in line with the recommendations provided by Europa Nostra’s report “Cultural Heritage Matters for Europe” (CHCfE Consortium, 2015, pp. 17, 97-102). The report emphasises the importance of adopting a holistic four-domain approach (social, economic, cultural, and environmental) in cultural impact assessment. Indeed, it is based on the recognition of the role of culture as a fourth pillar for sustainable development – together with economic, social, and environmental pillars – as stated in the Hangzhou Declaration “Placing Culture at the Heart of Sustainable Development Policies” (UNESCO, 2013).

Different approaches still populate the constellation of impact assessment, and many of them still adopt a single field “language” to describe phenomena whose impacts are spread in different spheres, such as The Life Satisfaction Approach (LSA). LSA is a quantitative tool developed in economics that provides a monetary evaluation as an output. Through a survey, LSA provides information about respondents’ life satisfaction, their degree of participation and engagement in the arts and cultural activities, and other socio-economic and demographic characteristics of the respondents. Tools such as this do not adopt an integrated and interconnected view and do not align with the holistic framework.

Aiming to fill this gap, the already mentioned SoPHIA’s deliverable “A concise essay mapping existing gaps, issues, and problems” (2020) provided an overview of tools and methods developed in four domains: social, cultural, environmental, and economic. A total of 42 different methods were collected. To comprehend the distribution of these methods, here is an overview of their allocation based on their respective domains: 14 in cultural, 24 in social, 4 in economic, 3 in environmental, and 4 are related to two or more domains.

In particular, among these 42 methods, 6 are used in two different domains, but they are characterised by a single-field approach (e.g. economic methods applied to the social dimension, such as SROI – Social Return on Investment, which is present in both social and economic domains), 2 of them are classified as attempts to create synergies between methods of two domains (i.e. SEIA – Socio-Economic Impact Assessment and ESIA – Environmental and Social Impact Assessment), and finally 2 of them are labelled as cross-domain methods, namely HIA – Heritage Impact Assessment and Impact 08 (Fig. 1).

Fig. 1: Impact Assessment Methods divided by domain (own elaboration based on the initial classification provided by SoPHIA Project, 2020)



Our analysis is still ongoing, but some first considerations can be made focusing on those methods highlighted as cross-domains, i.e. HIA and Impact 08, in addition to SoPHIA Holistic Impact Assessment Tool.

Even if HIA and Impact 08 are both identified as cross-domain, HIA does not provide a comprehensive approach to assess the impact of culture across all dimensions of society. As pointed out by Ashrafi et al. (2021a, 2021b), HIA has been developed by ICOMOS within the framework of EIA – Environmental Impact Assessment, to measure the potential impact of a proposed development on cultural and historical resources, such as archaeological sites, historical buildings, or cultural landscapes – with specific recommendations to mitigate any negative impacts (ICOMOS, 2011). It is also worth mentioning that HIA is increasingly required to analyse the possible effects and consequences of development on the Outstanding Universal Value (OUV) of World Heritage Sites. Indeed, the very vocation of the “HIA Guidance” developed by ICOMOS (2011) is to provide a methodology for assessing the potential impact of a change or development on OUV attributes as part of a broader EIA process. This characteristic means that it often refers to a well-defined and delimited area of action, UNESCO sites, making its application in other contexts challenging and often inappropriate. Furthermore, this method does not offer useful tools to investigate the impact of culture on well-being. Indeed, this example shows a common obstacle when addressing the topic of cultural impact assessment, namely the risk of encountering tools that assess the impacts of a proposed development on cultural heritage. As a result, this tool can provide information only limited to the enhancement and conservation activity of the site under analysis as it focuses on safeguarding cultural heritage rather than on the impacts it may have on the society that hosts it.

The second cross-domain method is Impact 08, a holistic longitudinal impact analysis. It was successfully used to assess the economic impacts of Liverpool European Capital of Culture (ECOC) 2008 (Garcia et al. 2008, 2010). Impact 08 developed a holistic approach by focusing on five areas: 1) cultural access and participation; 2) economy and tourism; 3) cultural vibrancy and sustainability; 4) image and perception; 5) governance and delivery process. As pointed out by Baioni et al. (2021, p. 15), Impact 08 has been able to incorporate policy objectives and address the different imperatives relevant to cultural intervention in each sector analysed. Beyond quantitative metrics, Impact 08 adopted qualitative methods, considering the lived experience of residents as an essential component of the study and providing insights about positive and negative aspects from residents’ perspectives. What emerges is that the tool’s nature, that is, being designed to evaluate Liverpool’s experience as ECOC, weakens the holistic approach of the evaluation. Indeed, due to the context in which it took shape, this assessment paid strong attention to outputs, particularly visitor flows and tourism, and demonstrated a slight concern for sustainable development issues in the city. The report provides insights on dimensions related to human well-being (e.g., occupational well-being, cultural engagement and participation, sense of belonging, local identity), but fails to mention environmental impacts directly. Overall, this example contributes fundamentally to introducing the holistic approach in the sector. However, it is important to note that it was developed and designed specifically for an exceptional event such as ECOC. Therefore, it is more appropriate to measure the impact of similar events on an urban scale rather than to evaluate the impact of culture in other production contexts and on different geographical scales.

Finally, the Holistic Impact Assessment Model proposed by SoPHIA represents a key contribution to spreading a holistic approach in the cultural field. SoPHIA Social Platform for Holistic Heritage Impact Assessment is a project funded by the European Commission under the H2020 work program (2018-2020) to develop a holistic, multi-domain, and intersectoral impact assessment model to evaluate interventions on cultural heritage (Baioni, 2021). The SoPHIA model is not a “ready to use” tool that can be applied universally; instead, it is a “conceptual model” that must be transformed and customised into an operational framework (Arif et al., 2021, pp. 87-88). What makes this tool valuable is the role that it assigns to the indicators and qualitative measures collected. They are organised according to domains and subdomains, but their contribution is not limited to the area of affiliation; instead, they are helpful in evaluating transversal aspects of key issues. In addition, the model differs from other impact assessments as it adapts to the analysis needs of three categories: policymakers (from local to European level), managers and practitioners, and institutional observers and independent researchers (SoPHIA, 2021). SoPHIA model adopts an approach developed on three axes: 1) domains, represented by issues organised by themes and interconnected subthemes; 2) people, divided between promoters of the assessment and stakeholders involved in the evaluation process (e.g., policymakers, local communities, civic society); 3) time, represented by the balance between current need and legacy but also related to the moment in which the assessment happens (*ex-ante*; *on-going*; *ex-post*) (Arif et al. 2021, pp. 77; Baioni et al. 2021, pp. 17-20).

The multi-domain axis encompasses six different themes – further divided into subthemes, for a total of 28 – in which a cultural intervention can potentially impact. They are organised as: 1) social capital and governance; 2) identity of place; 3) quality of life; 4) education, creativity, and innovation; 5) work and prosperity; 6) protection. Themes and subthemes are described, along with their cross-cutting issues and counter-effects. The assessment is developed thanks to quantitative indicators, and the perspective of people – direct beneficiaries and workers engaged in the implementation of the initiative – on the intervention’s quality (Arif et al. 2021, p. 75).

As Arif et al. (2021) pointed out, the repetition of indicators among themes and subthemes was an obstacle to the development of the model, which caused redundancy. This issue was addressed through the testing phase by implementing a clear differentiation of themes and subthemes. Topics affected by this phenomenon more often were those related to social capital, prosperity and attractiveness, and well-being (Arif et al. 2021, p. 71).

One of the main holistic features of this tool is the ability to show interconnections between various areas thanks to cross-cutting issues and counter-effects described for each sub-theme. The theme of Quality of Life, originally named Well-being/Quality of Life (Ioannou, 2021), was a privileged viewpoint to observe counter-effects; for this reason, it has been lightened, leaving the dimension of well-being in the dimension of counter-effects.

Research limitations. *The research is theoretical since it analyses and discusses pre-existing theories, methods and models. The research focuses mainly on holistic tools, not the various methods that populate the impact assessment universe. Moreover, the analysis is still in progress. Its further development entails a thorough analysis of the impact assessment methods under investigation to develop an original holistic framework for measuring the impact of culture on sustainability and well-being.*

Managerial implications. *The analysis suggested by the research could be a valuable resource for cultural management and policymaking. The review provides cultural managers with a set of approaches and tools that could be applied to the cultural sector. By critically discussing them, the research also guides cultural organisations in defining their measuring methods and instruments.*

The paper recommends integrating a holistic perspective into managerial practices to achieve more sustainable and well-being-oriented outcomes. It emphasises the importance of a comprehensive approach that considers the diverse dimensions of culture and provides practical insights to enhance cultural impacts. Indeed, the interconnected and multifaceted nature of culture, highlighted in the paper, calls for interdisciplinary collaboration within organisations between cultural experts, sustainability professionals and well-being specialists to develop holistic strategies guided by the integrated cultural welfare approach.

Originality of the paper. *The paper provides a comprehensive overview that helps understand and evaluate the benefits of culture. To the best of our knowledge, even if studies have provided a variety of models and tools, an analysis of holistic methods under the lens of the contribution of culture to sustainability and well-being has never been carried out. The analysis developed within the paper could help identify trends, overlaps, and gaps in the current debate about holistic approaches.*

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Tourism in Smart City policy: an opportunity for Urban Sustainability

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Abstract

Previous studies show that the tourism sector, often remains separated from smart city projects if not to enhance the attractiveness of a city within the smart living dimension. This separation disregards the overlapping presence of tourists and residents in many city services and infrastructures which can aggravate urban challenges such as overcrowding, pollution, and waste management, endangering the effectiveness of smart city projects aiming to enhance the quality of life of inhabitants while considering the potential impact on natural resources. Therefore, there is a need for tourism to be seen as an interrelated system rather than a mere economic activity so that its impact on city resources and infrastructures can be properly addressed. To this end, this study aims to fill this gap by investigating the role of tourism in multiple smart city projects and the potential sustainability outcomes deriving from the integration. We conduct a discourse analysis focusing on 24 smart city projects that integrate tourism in the Belgium context which allows us to unveil the expected sustainability outcomes of integrating tourism in other smart city dimensions such as smart mobility, smart governance and smart environment. In addition, with this research we contribute in the development of proactive instead of reactive tourism management policies. Finally, we also contribute to a better understanding of how many dimensions of a smart city are impacted by tourism and how this impact whether present or potential can be addressed with benefits to the community and the tourist.

Key words: smart cities, tourism, integration, urban sustainability

Framing of the research. Urban tourism has positive and negative effects on cities (Tsaur et al., 2018). It positively contributes to economic growth and it can negatively affect the quality of life in the city if its impact is not appropriately addressed. Indeed, an inadequate tourism management can lead to aggravate city challenges such as overcrowding, congestion, over-commercialization, and damage to natural resources and heritage sites, leading to environmental degradation and social issues (Postma & Schmuecker, 2017; Tsaur et al., 2018).

Integrating tourism into urban development strategies is crucial for creating sustainable urban environments. Smart city policies and ICT innovations offer avenues for balancing economic benefits with environmental and social considerations. However, current approaches to tourism in smart cities tend to be reactive, addressing immediate issues like overtourism, rather than using smart tourism projects as a tool for long-term sustainable urban planning (Torres-Delgado & Font, 2024).

Therefore, there is a need for tourism to be seen as an interrelated system within a larger living system rather than a mere economic activity so that its impact on city resources and infrastructures can be properly addressed (Jamroozi, 2007). Indeed, this separation disregards the overlapping presence of tourists and residents in many city services and infrastructures. As a matter of fact, poor management of a tourism system can aggravate urban challenges such as overcrowding, pollution, and waste management, endangering the successful achievement of smart city project goals (Tsaur et al., 2018; Margherita et al., 2023).

To this end, in this research we first provide definitions regarding the concepts of smart city, smart tourism, and urban sustainability to develop the conceptual model that we will use for the empirical analysis of how tourism is integrated in smart city projects for urban sustainability in the empirical context of Belgium.

The smart city framework includes six dimensions developed to support the four pillars that are the basis of smart cities, namely, institutional infrastructure, physical infrastructure, social infrastructure, and economic infrastructure (Bibri, 2018; Sharif & Pokharel, 2022). These six dimensions are the smart economy, smart living, smart governance, smart environment, smart mobility, and smart people (Giffinger et al., 2007): Smart economy is defined as competitiveness, innovation, use of information and communication technologies in the overall aspect of the economy

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(Arroub et al., 2016). Smart Governance is coordination between citizens and administrative institutions and a successful governance can help to achieve maximum benefits of smart cities in terms of reliability, efficiency, and effectiveness of citizens' services by integrating public, private, and civil officialdoms (Sharif & Pokharel, 2022; Silva et al., 2018). The Smart Mobility dimension consists of developing a modern and sustainable transport system throughout the territory, adapted to the needs of all users (citizens, workers, tourists, etc.) (Smart City Institute, 2021). The Smart Environment dimension refers to the use and management of natural and heritage resources in a more thoughtful and sustainable manner (Smart City Institute, 2021), including "waste discarding, pollution control, energy management, smart grids, and house and facility management, quality of air and water, increases in green spaces, and monitoring emissions" (Al Sharif & Pokharel, 2022, p. 5). The Smart People dimension refers to the development of a more inclusive society that offers equal treatment in the development of human capital, namely the ability and proficiencies of a person or a group, and social capital, which is the number and quality of relations connecting social organizations (Al Sharif & Pokharel, 2022). Finally, the smart living dimension refers to the enhancement of the quality of life for citizens and encompasses several aspects of urban life, namely, health, city safety, tourism attractiveness, social cohesion (Smart City Institute, 2021; Attaran et al., 2022).

Smart city research recognized tourism as an influential part of the Smart Living Dimension of Smart City (Giffinger et al., 2007; La Rocca, 2013). However, tourism's impact covers much more than this dimension as it can affect many subsystems of a city from its transportation systems to its waste management systems to its economic system. Therefore, as explained by La Rocca (2014), analyzing tourism as a part of the Smart Living dimension risks overlooking the impact of the sector on all other smart city dimensions.

Smart tourism is defined as tourism supported by integrated efforts at a destination to collect and aggregate/harness data derived from physical infrastructure, social connections, government/organizational sources, and human bodies/minds in combination with the use of advanced technologies to transform that data into on-site experiences and business value-propositions with a clear focus on efficiency, sustainability, and experience enrichment. Smart tourism is based on three components: Smart Experience, Smart Business Ecosystem, and Smart Destination. The smart experience component specifically focuses on technology-mediated tourism experiences and their enhancement through personalization, context-awareness, and real-time monitoring (Buhalis and Amaranggana 2015). Neuhofer et al. (2015) identify information aggregation, ubiquitous connectedness, and real-time synchronization as the major drivers of such smart tourism experiences. The smart tourism experience is efficient and rich in meaning. Tourists are active participants in its creation. They not only consume but also create, annotate, or otherwise enhance data that constitutes the basis of the experience (e.g., by uploading photos to Instagram with destination-related hashtags or helping map toilets at destinations). Smart tourists and their digital selves (or data bodies) use smartphones to tap into information infrastructures provided at the destination or virtually to add value to their experiences. The smart business ecosystem refers to the complex business ecosystem that creates and supports the exchange of touristic resources and the co-creation of the tourism experience. Buhalis and Amaranggana (2014) describe the business component of smart tourism as being characterized by dynamically interconnected stakeholders, the digitalization of core business processes, and organizational agility. A distinct aspect of this smart business component is that it includes public-private collaboration to an extent that is unusual and results from governments becoming more open and technology-focused as providers of infrastructure and data. In addition, smart tourism recognizes that consumers can also create and offer value as well as monitor and therefore take on business or governance roles. Smart destinations are defined as special cases of smart cities: they apply smart city principles to urban or rural areas and not only consider residents but also tourists in their efforts to support mobility, resource availability and allocation, sustainability, and quality of life/visits (Gretzel et al., 2015). Another definition is provided by Lopez de Avila (2015) defines the smart tourism destination as: an innovative tourist destination, built on an infrastructure of state-of-the-art technology guaranteeing the sustainable development of tourist areas, accessible to everyone, which facilitates the visitor's interaction with and integration into his or her surroundings, increases the quality of the experience at the destination, and improves residents' quality of life. Finally, smart tourism spans three layers across these three components: a smart information layer that aims at collecting data; a visual exchange layer that supports interconnectivity; and a smart processing layer that is responsible for the analysis, visualization, integration, and intelligent use of data (Gretzel et al., 2015).

The last concept we define is sustainability generally defined and in relationship with tourism.

Sustainability is defined by the Brundtland report as a form of economic development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, p. 43). In the context of urban settlements, sustainability is defined by Hiremath et al. (2013) as reaching balance in developing an urban area and protecting its environment, keeping "an eye to equity in income, employment, shelter, basic services, social infrastructure, and transportation in the urban areas" (Hiremath et al., 2013, p. 2). Following Margherita et al. (2023), our study defines urban sustainability using the comprehensive framework of the triple bottom line, which involves three dimensions to support, namely, economic, social, and environmental. The economic dimension refers to developing a city context able to guarantee long-term economic growth that fairly distributes socio-economic benefits among a city's stakeholders (Michael et al., 2014). The environmental dimension refers to developing a city context that makes optimal use of environmental resources, protects essential ecological processes, and helps to conserve natural heritage and biodiversity (Michael et al., 2014). Finally, the social dimension entails addressing the needs of citizens to improve the quality of life. It embraces the notions of equal opportunity for people's development, respect for the community's socio-cultural authenticity, and preservation of cultural heritage. It also includes the notion of community empowerment, whereby citizens increase control over their lives by accessing public information and facilities (OECD, 2004).

Given that our study considers the integration of a tourism system in a smart city, it is important to provide a definition of sustainable tourism to understand how it aligns with urban sustainability.

UNWTO recommends that to assess sustainable tourism, it is imperative to use the three pillars of sustainability: environmental, economic, and socio-cultural (UNWTO, 2004). The environmental pillar refers to the optimal use of environmental resources by tourism stakeholders that constitute a crucial element in tourism development but also to maintain essential ecological processes and help the conservation of natural heritage as well as biodiversity. The socio-cultural pillar of sustainable tourism refers to the consideration and respect of the socio-cultural authenticity of host communities, conservation of their cultural heritage and traditional values as well as contribution to intercultural understanding and tolerance (Escobar & Margherita, 2021).

Finally, the economic pillar refers to the capability of tourism businesses to ensure feasible, long-term economic growth by providing socio-economic benefits distributed among all stakeholders in a fair manner. This includes securing employment, income-earning opportunities, as well as a contribution to poverty alleviation. In addition, it refers to the ability to maintain a high level of tourist satisfaction by ensuring a meaningful experience to the tourist (UNWTO, 2004).

Based on these concepts, we developed a conceptual model that allows us to analyze the phenomenon.

Purpose of the paper. This study aims to investigate the role of tourism in multiple smart city projects guided by the following research question: how do smart cities envision the integration of tourism and its impact through smart urban technologies to support urban sustainability?

Methodology. We conduct a discourse analysis focusing on 24 smart city projects that integrate tourism in the Belgium context with an assessment of the expected sustainability outcomes of integration. We explore the integration of tourism into smart city projects aimed at fostering urban sustainability within the empirical context of Belgium. We conducted a qualitative discourse analysis of project proposals submitted to the Smart Territory call for projects in the Wallonia region in 2019. Belgium was selected for analysis due to its prominent position among European Union countries in smart city development (European Commission, 2018).

The analysis of the project texts employed a combination of inductive and deductive methods. Initially, we followed an inductive approach and conducted a thematic analysis of both the introductory summaries of the project texts and the responses to question 46. This allowed us to categorize projects based on commonalities regarding the proposed smart tourism initiatives. Subsequently, we employed deductive analysis, drawing on the theoretical categories outlined in our conceptual model.

Our deductive analysis focused on several key aspects:

1. **Data Use:** We examined how data was utilized within the projects, including its collection, processing, and exchange. This provided insights into the technological infrastructure and data-driven approaches underpinning the proposed smart tourism initiatives.
2. **Typology of Smart Tourism Initiatives:** We categorized the smart tourism initiatives into three types: smart experience, smart business ecosystem, and smart destination following Gretzel (2015). This classification helped elucidate the specific focus and objectives of each initiative.
3. **Smart City Framework Integration:** We analyzed how each smart tourism initiative was integrated within the broader smart city framework. Specifically, we looked at alignment with the dimensions of smart economy, smart living, smart governance, smart environment, smart mobility, and smart people. This assessment provided context regarding the strategic positioning of the initiatives within the overall urban development strategy.
4. **Envisaged Sustainability Impact:** Finally, we evaluated the anticipated sustainability impact of the smart tourism initiatives across environmental, social, and economic dimensions. This analysis shed light on the potential benefits and outcomes expected from the implementation of these initiatives in terms of urban sustainability.

By systematically analyzing these dimensions, we gained a comprehensive understanding of how smart tourism projects were conceptualized and planned within the context of smart city development in Belgium. This approach enabled us to identify patterns, trends, and areas of innovation, contributing valuable insights to the study of urban sustainability and smart tourism integration.

Results. Preliminary findings show how different smart city policies integrate tourism in projects that support more than just the smart living dimension which acknowledges the tourism system impact on mobility, waste management, energy efficiency and so on. In addition, with this research we show examples of proactive policy making that can inspire policy makers around the world to address current issues related to tourism development and prevent future ones to enhance the livability of cities. We also show the importance of considering tourism institutions and stakeholders in the envisioning phase of smart city policy as in some of these projects they were crucial to understand the tourism products, receive information on current challenges and conflict with residents but also to understand what the resident wants to share with the tourist about the city. Finally, with this research we contribute to the tourism reset literature that advocates for tourism as a tool for community development that avoids perpetuating unsustainable tourism development strategies and shift towards those strategies that develop tourism with a consideration of the its impact on the destination and its inhabitants (Higgins-Desbiolles et al., 2019; Jamrozy, 2007; Sharpley, 2020; Sigala, 2020).

Research limitations. Future research could enlarge the sample of smart city projects given that our research focuses solely on the case of smart city projects in Belgium.

Managerial implications. This research has implications for policy makers as it shows cases of smart cities that integrate the current and potential tourism impact in their strategies and the outcomes for urban sustainability. Policy

makers can use this research as a useful tool to understand the value of developing inclusive smart city strategies that consider tourism.

Originality of the paper. We propose a comprehensive model that explores how municipal administrations plan to incorporate tourism into smart city initiatives to drive sustainability impacts. Our model outlines a framework where municipalities leverage data collection, processing, and exchange capabilities to implement three distinct types of smart tourism initiatives: smart experience, smart business ecosystem, and smart destination. These smart tourism initiatives are strategically integrated into the broader smart city framework, aligning with one or more of the six dimensions outlined by Giffinger (2007): smart economy, smart living, smart governance, smart environment, smart mobility, and smart people. This integration allows for a synergistic approach, where tourism initiatives are seamlessly embedded within existing smart city infrastructure and initiatives. The ultimate goal of this model is to enhance urban sustainability across multiple dimensions of the triple bottom line: environmental, social, and economic. By strategically aligning tourism initiatives with smart city dimensions, municipalities aim to achieve tangible sustainability outcomes while simultaneously enhancing the overall tourism experience and economic prosperity of the city.

With this research we contribute in the development of proactive instead of reactive tourism management policies (McLoughlin et al., 2023). We also contribute to a better understanding of how many dimensions of a smart city are impacted by tourism and how this impact whether present or potential can be addressed with benefits to the community and the tourist.

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Transnational collaborations for a more sustainable tourism: the role of digital transition

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Abstract

Digital transformation provides opportunities for sustainable tourism development, through the forecast and mitigation of negative tourism impacts (e.g., overtourism), the involvement of all stakeholders, including residents, in the decision making, and the systematic collection and sharing of tourism data. Digital transformation also facilitates collaboration among different structures, which is also fundamental for sustainable tourism. This ongoing study considers a transnational cooperation structure in order to understand how digital transition can facilitate collaboration among different actors and structures in different destinations in terms of sustainability decisions. To this extent, a longitudinal qualitative study has been developed at different levels of analysis (namely, regional/province level, destination level, municipality level) and at different points in time. At the higher level of analysis (the regional level), three in-depth semi-structured interviews have been conducted with key managers of the regional DMOs of the three regions involved in the study. Results show a fragmented situation at the regional level: even though issues of digital transformation, systematic collection and processing of tourism data, as well as transition towards a more sustainable tourism development are deemed important, there is no systematic collaboration among the three regions, except for few consolidated tourism projects. At a lower level of analysis, the study attempts to collect semi-structured interviews with public and private key stakeholders of the selected destinations and municipalities in order to provide a more nuanced and in-depth understanding of the phenomenon. This research will contribute to sustainable tourism literature, as well as digitalization and collaboration studies in tourism, in that it first considers a transnational collaboration structure.

Key words: digital transition; sustainable tourism development; overtourism; collaboration; transnational cooperation structure

Framing of the research. Destination management has been the object of attention of tourism research for a long time now (Beritelli et al., 2014). Recent research has re-defined the roles and responsibilities of destination management in terms of sustainable tourism development, empowerment of local actors, including equal distribution of benefits and costs among different stakeholders, balance of the tourism flows, measurement and tracking of tourism behaviors (Reinhold et al., 2023). Moreover, destination management aims to oversee the processes of development of a tourism offer from the structural and infrastructural point of view (Luštický & Štumpf, 2021). This means that destination management is not only responsible for the development of the tourism product but to some extent for improving infrastructures in the destination, both they physical ones, e.g. transportation and mobility, and the digital ones, e.g. technology for data collection (Luštický & Štumpf, 2021; Reinhold et al., 2023).

Digital transformation has been defined as “a process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies” (Vial, 2019, p. 118). Digital transformation is a fundamental process not only for firms and enterprises, but also for a whole industry like the tourism industry. Previous studies prove that digital transformation positively impacts the tourism industry in terms of value creation (Ozdemir et al., 2023), better financial performance (Suder et al., 2022), competitive advantage (Gutiérrez et al., 2023), connectivity (Dickinson et al., 2017), prediction of tourism demand (Zhang et al., 2020) and of tourism arrivals (Höpken et al., 2020). Moreover, successful destination management often relies on the integration of technology into organizational structures (Sorokina et al., 2022).

Digital transformation aids the sustainable development of a tourism ecosystem. Previous studies have started to indicate a positive relationship between digital transformation and the sustainable tourism development of a tourism ecosystem (Gössling, 2021). For instance, technology has been seen as useful in mitigating and managing negative tourism impacts (Ali & Frew, 2013; Schönherr et al., 2023). Dickinson et al. (2017) argue that mobile connectivity

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enhanced a more bottom-up approach aimed at co-creating experiences, ideas, and resources. Similarly, digital technologies in smart cities also aim to create sustainable and meaningful connections between tourists and the destination (Li et al., 2017). Moreover, the sharing and common management of data and information among local structures (ElMassah & Mohieldin, 2020) can have positive consequences for the management of tourism mobility caused by overtourism that can lead to congestion and overcrowding, as well as for the spreading of tourism flows and the relationship with online booking platforms. Finally, digital transformation also has an enabling role for organizational learning with the aim of driving territories and destinations toward more sustainable development (Schönherr et al., 2023). Destination management is responsible for coordinating the various elements that constitute a destination (UNWTO, 2020; Zhang & Blasco, 2022). The collaborations among the various private and public tourism stakeholders can be promoted through digital transformation, utilizing digital technologies to manage guest flows, providing online mobility options, and conducting campaigns to raise environmental awareness, ultimately mitigating the negative tourism impacts (Schönherr et al., 2023).

Sustainability literature highlighted the role of external collaborative dynamics as pivotal mechanisms to enhance sustainability-oriented behaviors and strategies (Sharma and Henriques, 2005). In the selected case, destinations can be seen also as competitors for their touristic offer (Zainal-Abidin et al., 2023). Therefore, in the selected context, destinations' collaborative strategies can be better understood by using the lenses of sustainability-oriented coopetition strategies. Coopetition is defined by Bengtsson and Kock (2000, p. 411) as "a dynamic and paradoxical relationship, which arises when two companies [or entities, n.d.r.] cooperate in some areas (such as strategic alliances), but simultaneously compete in other areas".

Therefore, the present study aims to go in depth in the understanding of sustainability-oriented coopetition initiatives developed in the touristic sector among the Trentino-South Tyrol-Tyrol (Italy and Austria) Euregio ecosystem's regions. By examining the collaborative dynamics and coopetitive strategies within the three selected destinations, this ongoing study aims to shed light on how they navigate the balance between cooperation and competition, crucial for fostering sustainable practices and enhancing their tourism offerings, and on the role of digital transformation in this.

Purpose of the paper. Whereas previous studies have mainly explored the impact of digital transformation on collaboration within specific sectors, such as tourism Small and Medium Enterprises (SMEs) (Xiao et al, 2017), the hospitality industry (Busulwa et al., 2022; Lam & Law, 2019; Suder et al., 2022), and Destination Management Organizations (DMOs) (Schönherr et al., 2023; Zainal-Abidin et al., 2023), no study, to the best of our knowledge, has considered a transnational cooperation structure. Moreover, there is still not a clear understanding of the role of digital transformation in collaboration among tourism destinations across different countries.

With a focus on the Trentino - South Tyrol - Tyrol Euregio Region, this study aims to fill that gap by considering the role of digital transformation in determining successful collaboration among DMOs, and other local structures, towards a more sustainable tourism development.

This ongoing research aims to explore the role of a transnational cooperation structure, like the Euregio, in the management and decision-making of local destination management, especially on issues related to sustainable tourism development, such as overtourism. In particular, the focus is on digital transformation as a potential facilitator of coordination in that it can provide a common ecosystem to manage those issues and improve the decision making.

The study aims to answer the following research questions:

- How does a transnational cooperation structure, like the Euregio, impact the local decisions of tourism management?
- To what extent does digital transformation contribute to collaboration (regarding sharing and management of data and information) among tourism areas in a transnational cooperation structure to achieve more sustainable tourism development?

Methodology. In order to answer the research question, our contribution develops a qualitative longitudinal study combining different levels of analysis (namely, province/ regional level, destination level, municipality level) at different points in time. While qualitative methodology allows for an in-depth insight into the phenomenon studied, the multi-level perspective (Geels, 2004) represents an ordering framework that could be useful to observe longitudinal dynamics such as sustainable transitions of territories.

The context of the study is the Trentino - South Tyrol - Tyrol Euregio region. The Euregio regions are transnational cooperation structures located between territories located in two (or more) European countries. Specifically, the Trentino - South Tyrol - Tyrol Euregio region is located between Northern Italy and Southern Austria and was established in 1998. The borders of this Euregio region correspond to the former County of Tyrol, before the territory was divided in 1919 after World War I. Trentino and South Tyrol are two Autonomous Provinces in Northern Italy, whereas Tyrol is located in Eastern Austria. The region is characterized by a mountainous landscape, where tourism is a major industry. In 2022, overnight stays were 17,8 million in the Autonomous Province of Trento (ISPAT, 2024), 34,4 million in the Autonomous Province of Bolzano/Bozen in Italy (ASTAT, 2024), and 43,4 million for the tourism year 2021/2022 in Tyrol, in Austria (Land Tirol, 2024). In fact, the Trentino - South Tyrol - Tyrol Euregio region is responsible for cooperation in fields such as tourism, mobility, infrastructure, social services, as well as environmental issues (for further information: europaregion.info)

The Trentino - South Tyrol - Tyrol Euregio region has been deemed ideal to answer the research questions since the institutional relationships among the local organizations that contribute to creating, play a pivotal role in shaping and influencing decisions regarding destination management.

The study's methodology builds on a qualitative longitudinal study. At the higher level of analysis (the province/ regional level), three semi-structured interviews were conducted with the key managers of the three DMOs representing

each Euregio region. Interviewees were recruited by email by one of the researchers of the team. The targeted informants of the Euregio Ecosystem were the Manager of Corporate and Internal Communications of Trentino Marketing (Trentino Marketing), the Manager of Alto Adige Tourism Organization (IDM Südtirol), the Manager of Tyrol Tourism Organization (Tirol Werbung).

Interviews were conducted in-person between October 2022 and February 2023. They lasted approximately 65 minutes. One interview was held in English, the other two were held in Italian and then translated into English. Interviews were analyzed following the Goia methodology, identifying first-order codes, second-order categories and aggregate dimensions (Goia et al., 2013).

At a lower level of analysis, the study aims to provide a more in-depth understanding of the themes that emerged at the province/ regional level. Therefore, semi-structured interviews with key stakeholders of the selected destinations and municipalities will be conducted. The targeted informants will be: Managers of the sub-destinations (APT Val di Fassa, APT Dolomiti Paganella, APT Valsugana, APT Dolomiti), Manager of each destination's tourism organizations, Key policymakers, Spokespersons of the Key touristic associations.

Preliminary results. Preliminary results show that each destination in the Trentino - South Tyrol - Tyrol Euregio region is collaborating locally with their stakeholders to develop innovative digital platforms able to process large amounts of data concerning touristic flows. All the different destinations are restructuring their internal organizations to face the forthcoming challenges related to sustainability (climate change effects on destinations, lower number of employees in the touristic sector, residents' consensus on touristic policies, transport, overtourism, etc). Moreover, besides the fact that each of the three destinations is involving all the stakeholders of their region to find new innovative ways to face the sustainability-oriented challenges, the potential of the Euregio transnational structure seems still under-exploited.

Preliminary results show that each destination is collaborating locally with its stakeholders to develop innovative digital platforms able to process large amount of data concerning touristic flows, as exemplified by the quotes below:

"The guest card is one of the largest projects that we developed. In South Tyrol the guest card started with mobility, then we added museums. Over time it was enriched by local services. Now has been proposed a new model of guest card, that we want to uniform for all the South Tyrolean realities. With the resulting data we would like to create a platform on which tourists can also shop as well as share information. This data will be used to aggregate the forces to face sustainability-related issues." (IDM Südtirol)

"We have many different cards, free ones or others to buy, and we don't want to change them because everyone worked out their own concept and they are working in their destination. I can add the local card from the valley X, from the valley Y, or from Innsbruck to this (main) card so then you have also the local experiences which are included in the local card and the destination card will add on the other cards. The idea is to start implementing this project with the public transport" (Tirol Werbung)

Despite this effort in collecting and processing large amount of data to control sustainability-related issues, preliminary results show that all the three different regions have difficulties in sharing their platform's data with the other regions at the Euregio level.

"We have to focus on sustainability at a cross-sectoral level, we must take steps together and move forward by doing small steps. [...] We have a lot of data, but a sharing at the Euregio level is more a political issue that is now outside of our management, because we are a very large company which uses this data, especially with territorial companies" (IDM Südtirol)

"The consultation with the other players in the Euregio ecosystem is a little more difficult, in the sense that there are some projects that are very good. For example, the Tour of the Alps is a really effective project that works very well with the other two actors (i.e. South Tyrol and Tyrol). It happens only when there is a very specific project. For the future, our goal is also to share data, experiences and promotions with these realities. We are trying to work also on sustainability but it is not easy, I have to be very honest because all three regions have agencies like Trentino Marketing that mainly have the goal of working for their region." (Trentino Marketing)

Moreover, all the different destinations are modifying their internal organizational structure (e.g., by appointing new roles or funding new departments). The restructuring aims to enhance the destinations in facing the forthcoming challenges related to sustainability such as the climate change effects on destinations, the effects of overtourism, the lower number of employees available in the touristic sector, the pressure of residents regarding touristic and transports policies.

"We are conducting a re-organization of your company around sustainability. For example, we have just hired a person who works for the whole topic of social sustainability and of the whole topic of missing employees. We want to analyze how we can build up tools and business in hotels with less employees in the future." (Tirol Werbung)

Indeed, our findings show that the coopetition initiatives among the regions are marginal and still limited to specific tourism projects that are particularly successful, such as the Tour of the Alps, a biking race held across the Trentino - South Tyrol - Tyrol Euregio region.

Research limitations. Our ongoing research is still at the initial stage; thus, only preliminary findings can be discussed in this short paper. This paper considers an area where a transnational structure is already present, even though collaboration among different regions pertaining to two different countries is still limited. Future research should focus on areas where such a structure is not present. In this case, the focus of the research could be to study how a transnational structure can be created and implemented. Moreover, future studies should be specifically focused on the identifications of the obstacles that prevent the Euregio transnational structure from facilitating more systematic collaborations among the three regions.

Managerial implications. First, this study will provide relevant practical information for the Trentino - South Tyrol - Tyrol Euregio region, by showing that the Euregio transnational structure is still under-exploited in this sense. By uncovering this untapped potential, our research underscores the imperative for the Euregio transnational structure to enhance interrelations and communication channels among various local stakeholders, fostering a robust collaborative network. Following this coopetition paradigm, also the three DMOs must recognize the latent opportunities within the Euregio transnational framework. This is also valid for other supraregional and transnational structures with similar dynamics.

Originality of the paper. Even though preliminary, findings confirm previous studies on digital transformation as an enabling factor for more sustainable tourism through tools that improve data collection and processing of touristic flows (Schönherr et al., 2023). Moreover, digital transformation allows the destinations to better face challenges related to sustainability issues, through the opportunity to disseminate findings and involve local residents in the decision making (Dickinson et al., 2017). However, it also shows a lack of collaboration and sharing of data among the three destinations considered (Schönherr et al., 2023), except for very few exceptions, related to single, successful events. This research will contribute to previous literature on collaboration in digital transition for sustainable tourism (Schönherr et al., 2023). Moreover, this research is also interesting for collaboration literature in tourism. Finally, to the best of the authors' knowledge, this study is the first considering a supraregional structure to study collaborative and coopetition dynamics among tourism destinations.

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Measuring Destination Carrying Capacity from Residents' Perspectives: A Pilot Study in Garda Trentino

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Abstract

Destination carrying capacity is fundamental in managing sustainability and well-being within tourism, focusing on residents' perceptions and quality of life. This study aims to develop a methodology for estimating destination carrying capacity from the residents' perspective, specifically focusing on residents' satisfaction with life as an indicator. Building on previous research, which primarily focuses on objective measures of tourism impact, this study emphasizes the importance of subjective well-being measures in capturing the overall welfare of residents. The empirical method proposed by Tokarchuk et al. (2021) serves as the foundation for this study, with a key distinction being the collection of primary data on residents' satisfaction with life through ad hoc surveys.

To test the proposed methodology, the study conducts a pilot investigation in Garda Trentino, a high-visitor destination in the Trentino-Alto Adige region. A sample of 121 residents from municipalities including Riva del Garda, Arco, and Nago-Torbole is surveyed over eight weeks during the summer of 2023 to assess how their satisfaction with life varies with tourism intensity.

Findings suggest a nonlinear relationship between tourism intensity and residents' satisfaction with life, echoing previous research. The study reveals the presence of distinct resident groups based on their acceptance of tourism, with an optimal level of tourist intensity identified for residents more receptive to tourism. Moreover, the study underscores the subjective nature of defining an "acceptable" level of tourism and highlights the importance of considering resident perspectives in destination management decisions.

The study develops an innovative and relatively low-complexity methodology for estimating destination carrying capacity from the residents' perspective. By focusing on residents' subjective well-being, the study provides valuable insights for destination management and tourism academic research.

Key words: carrying capacity; residents' wellbeing; sustainability; panel data; fifth; sixth

Framing of the research. The concept of destination carrying capacity is central to addressing the critical concern of managing sustainability and well-being for individuals and society within tourism. In recent decades, extensive research has delved into this realm, specifically examining the impact of tourism on residents' lives within destination areas, focusing on their perceptions of tourism development and its repercussions. The World Tourism Organization defines tourism carrying capacity as "the maximum level of visitor use and related infrastructure that an area can absorb before place values are reduced to an unacceptable level" (World Tourism Organization, 2014, page 20).

Academic research in the field focused on the measurement of social carrying capacity. The leading approach is to estimate residents' attitudes toward tourism (e.g., Saveriades, 2000; Jurado et al., 2012). If it is observed that residents positively perceive tourist presence in the area, the conclusion is reached that social carrying capacity is not surpassed. This approach does not allow for an exact definition of the limits on tourism intensity associated with overtourism.

The studies based on the perception of tourism impact typically investigate the effects of tourism on objective welfare measures like income increase, creation of new jobs, pollution, crime rates, etc. Objective measures, however, can capture only partially the aspects of life that contribute to welfare (Kahneman and Sugden, 2005). Following a general tendency in economics that shifts attention to the adoption of subjective well-being measures that capture the overall welfare of individuals, the study of the impact of tourism on subjective measures of the quality of life of residents became a major focus of recent tourism studies (Uysal et al., 2016). These studies find a significant relationship between tourism development and subjective measures of residents' quality of life.

As demonstrated by previous studies, research on tourism's impact on residents' lives often yields contradictory findings regarding both the overall effect of tourism and the factors that moderate this relationship (Harri, 2004;

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Sharpley, 2014; Uysal et al., 2016). This inconsistency may stem from the fact that many studies are conducted as case studies focusing on specific tourism destinations, each characterized by its unique stage of development, historical context, tourist profile, and seasonality, among other factors. While some research may include multiple destinations within a single country (Kim et al., 2013) or compare destinations across different countries (Tosun, 2002), such studies often lack a unified and comparable base between the analyzed destinations, limiting the generalizability of their results to other settings. This fragmented approach to studying tourism impacts underscores the need for a more comprehensive and standardized methodology that can provide actionable insights applicable across diverse destination contexts.

Another approach undertaken by studies commissioned by industry and policymakers consists of collecting information on a set of tourism development indicators for an arbitrarily defined group of destinations. A comparative analysis of these indicators results in a conclusion as to whether some destinations are at risk of overtourism. This analysis requires the ad-hoc definition of threshold values to judge associated risk. This type of examination allows destinations to define their relative standing relative to other destinations. Still, it raises questions on determining the threshold, which destinations to include in the analysis, and at what level of spatial and temporal detail the study should be conducted.

Tokarchuk et al. (2021) proposed a methodology that allows measuring a destination's carrying capacity based on residents' satisfaction with life. The study develops a methodological framework to assess the maximum number of tourists visiting an urban destination without excessively influencing residents' perceived quality of life. It demonstrated a non-linear inverted-U-shaped relationship between tourism intensity and residents' satisfaction with life. The vertex of this relationship corresponds to the optimum level of tourism intensity that residents can accommodate.

The method is based on a socio-economic panel (SOEP) run by DIW nationwide in Germany since 1984 and analyzed for Berlin. However, few destinations can rely on the existing panel data regarding residents' satisfaction with life. Thus, although Tokarchuk et al. (2021) indicated the way to address the problem of point estimation of the destination's carrying capacity on the residents' side, it left open the question of how the destination can address the measurement of carrying capacity if it cannot count on existing data on residents' well-being.

Purpose of the paper. The present study aims to develop a methodology to estimate the carrying capacity of a destination on the side of residents. It answers the question of how many tourist residents are willing to welcome in the area of their residence and when the tourists' presence becomes too much. The present study follows the empirical method proposed by Tokarchuk et al. (2021) for measuring tourism carrying capacity for residents, which utilizes existing secondary data on residents' wellbeing. However, unlike the study conducted by Tokarchuk et al. (2021), the present research takes a different approach by conducting ad hoc surveys to collect primary data on residents' satisfaction with life. This methodology allows for a more tailored assessment of how tourism intensity, measured as weekly tourist nights per resident, impacts residents' wellbeing throughout the tourism season. By directly engaging with residents through surveys, the present study aims to provide a nuanced understanding of how their satisfaction with life evolves in response to varying levels of tourism activity.

Methodology.

Conceptual model

Tourism has numerous positive and negative impacts on residents' quality of life. On the positive side, tourism fosters economic growth, cultural exchange, and community development. One significant benefit is the creation of employment opportunities, as tourism generates jobs across various sectors, such as hospitality, transportation, and retail. Additionally, tourism encourages preserving and celebrating cultural heritage as communities showcase their traditions, arts, and cuisine to visitors, instilling a sense of pride and identity among residents. Furthermore, tourism often stimulates infrastructure development, improving access to essential services and amenities for locals while promoting environmental conservation through sustainable practices. Ultimately, by diversifying the local economy, fostering cross-cultural understanding, and enhancing community pride, tourism can contribute to residents' overall wellbeing and prosperity in destination areas.

Tourism can also impose negative impacts on residents' lives in destination communities. One significant challenge is the strain on local infrastructure and resources, as the influx of tourists often exceeds the capacity of existing facilities, leading to overcrowding, traffic congestion, and increased demand for utilities such as water and electricity. Additionally, commodifying culture and heritage to cater to tourist preferences may result in the loss of authenticity and identity for residents as traditional practices are modified or commercialized for mass consumption. Moreover, tourism can exacerbate social inequalities, with residents facing rising living costs, housing shortages, and displacement due to gentrification driven by tourism development. Furthermore, the environmental degradation associated with tourism, including pollution, habitat destruction, and depletion of natural resources, poses significant threats to residents' health and wellbeing, as well as the sustainability of their communities in the long term.

At lower levels of tourism development, the positive outcomes of tourism often outweigh the negative impacts, leading to overall improvements in residents' lives. Initially, as tourism begins to develop in a destination, residents may experience economic benefits such as job creation, income generation, and business opportunities. Cultural exchange and appreciation also thrive, as residents engage with tourists, sharing their traditions and heritage, fostering a sense of community pride and identity. Additionally, infrastructure development spurred by tourism investment enhances residents' access to essential services and amenities, contributing to their overall quality of life.

However, as tourism intensity increases beyond a certain threshold, negative impacts intensify while positive outcomes plateau. Issues such as overcrowding, environmental degradation, and cultural commodification become more pronounced, straining local resources and disrupting residents' daily lives. Social inequalities may emerge, with residents facing challenges such as rising living costs, housing shortages, and displacement. Furthermore, environmental concerns such as pollution and habitat destruction threaten residents' health and wellbeing.

Due to the joint effect of positive and negative impacts, the overall effect of tourism on residents' lives follows an inverted U-shaped curve. At low levels of visitation, the positive benefits of tourism dominate, leading to a net positive impact on residents' lives. However, as tourism intensity increases, reaching a maximum point, negative outcomes begin to outweigh the positives, resulting in a decline in residents' overall wellbeing due to overvisitation and unsustainable tourism practices.

In the present study, we consider the joint effect of tourism on residents' lives represented by residents' subjective quality of life. According to a recent review of the vast literature on subjective wellbeing reported by Diener et al. (2018), citizens value their quality of life more than other measures of society development, like income or employment. These indicators are more comprehensive and include much more than traditional economic measures of prosperity. For instance, it is demonstrated that environmental costs of economic growth, a frequent concern of residents about tourism, are accounted for in the reported values of subjective wellbeing. Moreover, these indexes are related to other highly attractive policy outcomes like better health or work productivity. Not surprisingly, many governments worldwide established monitoring of the wellbeing of their citizens, creating large longitudinal datasets of representative data that can also be used for tourism evaluation.

The relationship between tourism and subjective wellbeing of host communities is well documented in tourism research (Uysal et al, 2016). This makes subjective indicators of individual wellbeing, like Satisfaction with life, Happiness, and Quality of life, important variables for studying tourism's impact on residents' lives.

The present study follows the empirical method that Tokarchuk et al. (2021) proposed for measuring tourism carrying capacity for residents. The objective variable in the present study is residents' satisfaction with life. Unlike the study by Tokarchuk et al. (2021), the present study develops a methodology for measuring carrying capacity in the case in which data is collected on residents' wellbeing as primary data.

Empirical strategy

To test this methodology, a pilot study was conducted on the case of Garda Trentino, situated in the Trentino-Alto Adige region. This destination includes the municipalities of Arco, Riva del Garda, and Nago-Torbole. Lake Garda ranks second, immediately after the Romagna Riviera, in terms of arrivals nationwide, while it ranks third in terms of overnight stays (XXV Rapporto sul turismo, 2022). Municipality Riva del Garda is ranked first regarding arrivals in Trentino province. With 17190 residents, it will welcome more than 1 million arrivals in 2023.

Situated along the shores of Lake Garda and surrounded by towering mountains, the municipalities of Riva del Garda, Arco, and Nago-Torbole are squeezed into a narrow strip of land. This geographical constraint means that residents and tourists are concentrated within a limited area, leading to various difficulties in daily life.

The limited space in the area becomes an issue, particularly during peak tourist seasons. The influx of visitors exacerbates congestion on roads and sidewalks, making it difficult for residents to navigate the town. Furthermore, the competition for limited housing and resources drives up living costs, making it challenging for residents to afford suitable accommodation and maintain a high quality of life.

Unsurprisingly, the intensity of tourism, particularly during peak seasons, exacerbates existing issues and creates additional hardships for the local population. This underlines the importance of understanding the acceptable level of tourism presence in the area.

A sample of residents in three municipalities, Riva del Garda, Arco, and Nago-Torbole, was selected to estimate residents' carrying capacity in the Garda Trentino. The sample was composed of 121 individuals selected by convenience sampling. Respondents in the sample were interviewed during different stages of the summer of 2023 to observe how their satisfaction with life varied with the proceeding of the season.

After the initial interview in April 2023 at the beginning of the season that aimed to collect information on characteristics of the sample and their attitude towards tourism, respondents were approached eight times during the season and asked to evaluate their satisfaction with residents' lives given the tourism intensity they felt in the previous week. Overall, 968 individual observations were collected over eight weeks of the summer season from April to October 2023.

Econometric strategy

The variable of interest, resident life satisfaction during the past week, was measured as the degree of satisfaction expressed on a Likert scale from 1 to 10. The responses represent observations where the categories have an inherent order or hierarchy, but the distance between categories is not specified or uniform. In other words, the categories have an order, but it cannot be assumed that the difference between each pair of categories is constant or well-defined. The categories "very dissatisfied," "dissatisfied," "neutral," "satisfied," and "very satisfied" have an order. Still, the distance between "very dissatisfied" and "dissatisfied" is not necessarily the same as the distance between "dissatisfied" and "neutral".

The ordered probit model is the econometric approach suitable for handling this data type. In the case of this study, the ordered probit model must be estimated using the panel data model. This model in our research takes the following form:

$$P(Y_{it} \leq j | X_{it}, \alpha_i) = \Phi(\gamma_j - \beta_1 X_{it}^2 - \beta_2 X_{it} - \beta_3 Z_i - \alpha_i) - \Phi(\gamma_{j-1} - \beta_1 X_{it}^2 - \beta_2 X_{it} - \beta_3 Z_i - \alpha_i) \quad [1]$$

Where

Y_{it} represents tourist i 's satisfaction with situation t , an ordinal observation;

X_{it} is the degree of crowding in situation t

In this formulation, the term $\beta_1 X_{it}^2$ captures the effect of the quadratic relationship between the degree of crowding and tourist satisfaction. The inverted U-shaped relationship is confirmed if the coefficient β_1 , which corresponds to the quadratic term, has a negative sign and coefficient β_2 has a positive sign. The sign of the β_1 coefficient is the key element for the inverted U appearance since the quadratic term gives a concave shape to the curve.

However, the coefficients of the ordinal Probit model indicate the probability of moving from one ordinal category to another concerning the independent variables. Consequently, this model does not allow us to build the relationship between the degree of crowding and tourist satisfaction, which is needed to identify the carrying capacity.

To address this difficulty, in the present study, we chose to estimate the ordinal Probit panel model with fixed effects to check that the relationship between the degree of crowding and tourist satisfaction exists and has the correct sign. Furthermore, a linear panel model with fixed effects was estimated to allow the estimation of carrying capacity. This model takes the following shape

$$Y_{it} = \beta_0 + \beta_1 X_{it}^2 + \beta_2 X_{it} + \beta_3 Z_{it} + \alpha_i + u_{it} \quad [2]$$

As with equation [2], the term $\beta_1 X_{it}^2$ captures the effect of the quadratic relationship between the degree of crowding and tourist satisfaction. The inverted U-shaped relationship is confirmed if the coefficient β_1 , which corresponds to the quadratic term, has a negative sign and coefficient β_2 has a positive sign.

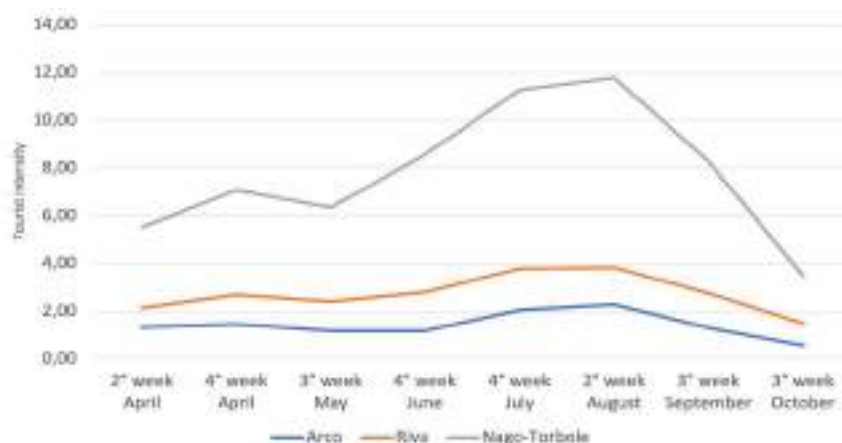
To establish the carrying capacity it is necessary to calculate the vertex of the parabola obtained. The degree of crowding corresponding to the vertex of the parabola represents the optimal degree of crowding to maximize residents' satisfaction with life. The vertex of the parabola is calculated as follows:

$$h = -\frac{\beta_2}{2\beta_1} \quad [3]$$

Results. According to the most recent Istat source, the inhabitants of the Arco, Riva del Garda, and Nago-Torbole are made up of 17,750, 17,787, and 2,788, respectively. Our sample comprises 60% of residents in Arco, 34% in Riva del Garda, and the remaining 6% in Nago-Torbole. It is formed by 60% of females with an average age of 38. 72% of panel members were born in the area and 7.4% work exclusively with tourists.

The data on tourism intensity during the weeks under study were obtained from ISPAT. Figure 1 presents tourism intensity measured as overnight stays per resident in the municipalities Riva del Garda, Arco and Nago-Torbole during the weeks under study. Tourism intensity presents seasonal pattern, with peak season corresponding to August. The highest intensity of tourism is observed in Nago-Torbole, where tourists are almost twice the local population during the peak period in August. In Riva del Garda every third person on the territory is a tourist during the peak season in August.

Figure 1. Tourism intensity, weekly tourist nights per resident, in municipalities Riva del Garda, Arco, Nago-Torbole in the weeks under study



Equations [1] and [2] were estimated on the whole sample. The estimation produced statistically nonsignificant coefficients related to quadratic and linear terms. Table 1 reports the estimation results when the quadratic term was dropped, and only a linear relationship was estimated. The Oprobit and fixed effects panel models present negative and statistically significant coefficients corresponding to tourism intensity. The data indicates a negative linear relationship between satisfaction with residents' lives and tourism intensity. This result is robust concerning model specification. It suggests that the tourism intensity observed in the study is too high, and only the downward slope of the relationship is observed.

Table 1. Regression results of the Oprobit and fixed effect model. Dependent variable: Residents' satisfaction with life given the level of tourism intensity during the week.

Variables	Oprobit model	Fixed effects panel model
Tourist intensity (linear)	-0.286***	-0.388***
Dummy_Riva	0.384*	0.503*
Dummy_Nago	1.942***	2.766***
Number of observations	968	968

*** $p < 0.01$, ** $p < 0.05$, * $p > 0.1$

The whole sample has been divided into two subsamples based on the evaluations that respondents gave in the initial survey concerning tourism's impact on their quality of life. Interviewees composing the first subsample reported a higher quality of life due to tourism in the area; they reported a positive impact of tourism on their quality of life of an average of 8.76 on a Likert scale of 1 to 10. This group is composed of 71 individuals and corresponds to 568 observations. We refer to this group as the "Tourism-Favorable" group. This group consists of Riva del Garda and Arco residents, but no one residing in Nago-Torbole has joined this group.

A second group includes individuals who are less tolerant of tourism and reported an average contribution of tourism to their quality of life of 7.6 on a Likert scale of 1 to 10. We refer to this group as the "Tourism-Averse" group. It consists of 50 individuals and corresponds to 400 observations.

Table 2 reports the results of models [1] and [2] on a subsample of "Tourism-Favorable" group. The coefficient corresponding to the quadratic value of tourism intensity is statistically significant and is negative, while the coefficient corresponding to its linear term is statistically significant and positive. The coefficients are robust regarding the estimation method. They present the signs compatible with an inverted U-shaped curve. It suggests that there is an optimum value of tourism intensity that maximizes residents' satisfaction with life.

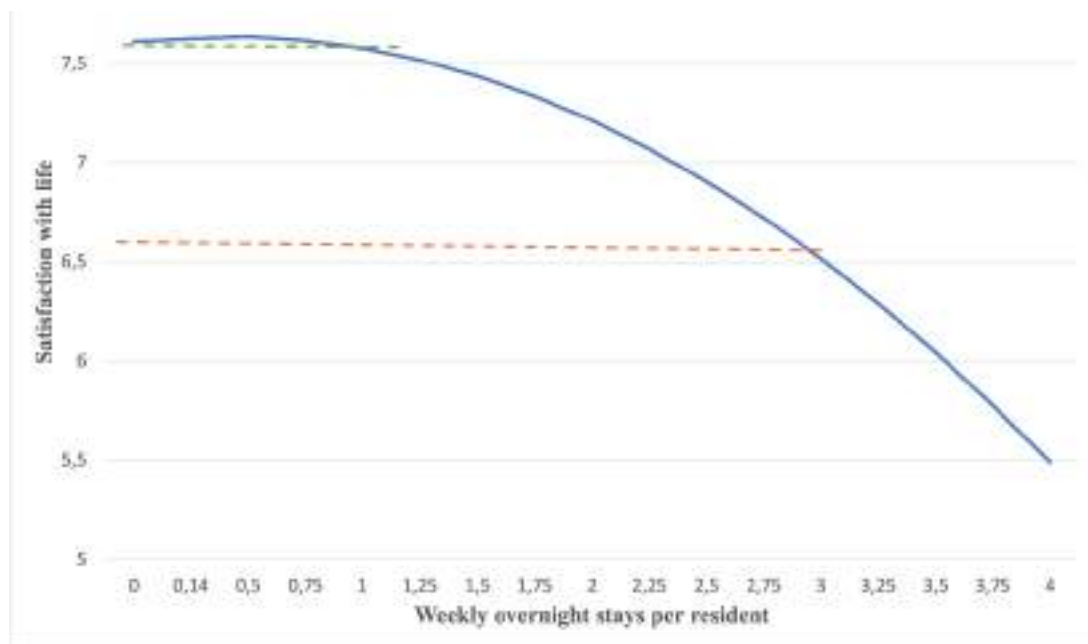
Table 2. Regression results of the Oprobit and fixed effect model on a subsample of "Tourism-Favorable". Dependent variable: Residents' satisfaction with life given the level of tourism intensity during the week

Variables	Oprobit model	Fixed effects panel model
Tourist intensity (quadratic)	-0.096**	-0.147**
Tourist intensity (linear)	0.01*	0.05*
Dummy_Riva	0.461*	0.637**
Observations	568	568

*** $p < 0.01$, ** $p < 0.05$, * $p > 0.1$

We apply equation [3] to calculate tourism intensity that maximizes residents' satisfaction with life. This value corresponds to 0,40 overnight stays per resident in the municipality. Only Arco registered a tourism intensity value similar to this in October, with 0,54 weekly overnight stays per resident. Figure 2 represents graphically the relationship between residents' satisfaction with life and tourism intensity. Given that only Arco and Riva del Garda inhabitants are included in the group "Tourism-Favorable", the range of tourism intensity corresponds to the values observed in these areas.

Figure 2. Graphical representation of the relationship between residents' satisfaction with life and tourism intensity for "Tourism-Favorable" group.



The definition of carrying capacity as “the maximum level of visitor use and related infrastructure that an area can absorb before place values are reduced to an unacceptable level” (World Tourism Organization, 2014, page 20) leaves space for the arbitrary definition of what is “unacceptable.” Analysis of Figure 2 demonstrates that life satisfaction values around the optimum are similar. One can define the optimum carrying capacity corresponding to the value of tourism intensity for which residents’ satisfaction with life is not lower than a total absence of tourism. This situation is represented in Figure 2 with a green dotted line. In this case, the weekly tourism capacity that residents can accommodate equals 0,75 weekly overnight stays per resident. This value includes tourism intensity registered in Arco in October.

An alternative definition of “acceptable” can be the level of tourism intensity that reduces satisfaction with residents’ life no more than one point. This case is represented in Figure 2 by the orange dotted line. In this case, a maximum level of weekly overnight stays per resident equals 3. This definition of carrying capacity includes all the analyzed periods in Arco and most period in Riva del Garda except for the peak season starting at the end of July and August.

Table 3. Regression results of the Oprobit and fixed effect model on a subsample of “Tourism-Averse”. Dependent variable: Residents’ satisfaction with life given the level of tourism intensity during the week

Variables	Oprobit model	Fixed effects panel model
Tourist intensity (linear)	-0.211***	-0.291***
Dummy_Riva	0.352	0.523
Dummy_Nago	1.476 ***	2.169***
Observations	400	400

*** $p < 0.01$, ** $p < 0.05$, * $p > 0.1$

Finally, the estimation of models [1] and [2] for “Tourism-Averse” group was performed. As for the whole sample, this estimation leads to the nonsignificant coefficients related to quadratic terms of tourism intensity. Thus, Table 3 reports the estimation results of a linear relationship. The coefficient corresponding to tourism intensity is statistically significant and negative. This indicates that any increase in the visitation level within the range observed in the present study negatively influences satisfaction with residents’ life of this group. This result suggests that for this group the unacceptable level of tourism intensity has been surpassed.

Research limitations. While the present study offers valuable insights into measuring tourism carrying capacity from the residents' perspective, it is essential to acknowledge its limitations, particularly as a pilot study. Firstly, the sample size needs to be increased, which may impact the generalizability of the findings. Despite efforts to ensure representativeness, the sample may only partially capture the diversity of resident perspectives within the destination. Additionally, the study focuses solely on one destination, limiting the scope of the analysis and potentially overlooking variations in tourism impacts across different destinations. As such, the findings may not apply to other destinations with distinct characteristics or tourism dynamics. Furthermore, as a pilot study, there may be methodological challenges or uncertainties that could affect the accuracy or reliability of the results. Future research should address these limitations

by expanding the sample size, considering multiple destinations, and refining the methodology to enhance the robustness of the findings.

Managerial implications. The present study develops a methodology that can be implemented by smaller-scale destinations needing more comprehensive data, whereas past measurements of carrying capacity were challenging due to data limitations. By constructing a representative panel of residents and utilizing straightforward questions, destination managers can obtain clear and actionable insights into residents' perceptions of tourism without extensive data collection or benchmarking methodologies. By revealing distinct resident groups and identifying optimal levels of tourist intensity for those more receptive to tourism, destination managers can tailor their strategies to specific resident preferences, thereby enhancing overall destination management effectiveness.

Moreover, the study emphasizes the subjective nature of defining an "acceptable" level of tourism, highlighting the importance of considering resident perspectives in destination management decisions. By enabling destinations to identify optimal thresholds and conduct cost-benefit analyses based on resident satisfaction and tourist intensity, the methodology provides valuable insights for decision-makers seeking to balance tourism development and resident well-being.

Originality of the paper. The study's originality lies in developing and applying an innovative method for measuring tourism carrying capacity from the residents' perspective. This method offers a novel approach that is relatively low in complexity and resource requirements. One key aspect of this method is its reliance on constructing a representative panel of residents, either over the year or based on seasonal variations in destination activity. The questions posed to residents are straightforward and designed to elicit clear and actionable responses. This approach contrasts with traditional methods that may require extensive data collection and benchmarking methodologies, which can be resource-intensive and impractical for smaller-scale destinations lacking comprehensive data.

The application of this methodology to a high-visitation destination where past measurements of carrying capacity were not feasible due to data limitations demonstrates its adaptability and relevance in real-world settings. Through analysis, the study reveals the presence of distinct groups within the resident population concerning their acceptance of tourism. For the group more receptive to tourism, the study identifies an optimal level of tourist intensity.

Furthermore, the study highlights the subjective nature of defining an "acceptable" level of tourism, underscoring the importance of considering resident perspectives in destination management. By enabling destinations to identify optimal thresholds and conduct cost-benefit analyses in terms of resident satisfaction and tourist intensity, this methodology provides valuable insights for decision-makers.

In addition to its practical applications for destination management, this method also contributes significantly to academic research in tourism. Providing a standardized approach to evaluating carrying capacity offers researchers a valuable tool for comparing and analyzing destinations of varying characteristics and levels of development.

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A sensitizing literature review for future research about overtourism in Milan

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Abstract

One kind of tourism that has grown faster than other forms, sometimes regardless of being governed and planned, is urban tourism, often causing problems related to the so-called overtourism. We can quote the case of Milan, the second largest city in Italy after the capital, Rome, with a typical industrial vocation, 1.4 million residents, and a constantly growing economy in all sectors. The latest figures show a real boom in tourists, with 900,000 tourists only in July 2023. The Milan case study could advance the theory dedicated to urban tourism, offering a new and replicable model for other cities. The role of local government in tourism development is well-known and studied by several authors. Booming tourism is often connected with appropriate mechanisms and processes put in place; these mechanisms should ensure development management, promotion, and monitoring and simultaneously avoid issues such as overtourism, infrastructure, accommodation, security, and gentrification. In this light, governance is vital to tourism development, as several factors should be managed and integrated. Local government also orchestrates a network of stakeholders, including residents, local communities, businesses, the tourism industry, and central government, to mention a number. Our research is divided into two parts. This first part is dedicated to developing a semi-structured questionnaire to collect data and information on how the local government of Milan is managing the constant growth in the number of tourists and its issues.

Key words: overtourism; local government; Milan; semi-structured interview; inductive research

Framing of the research. We reviewed the most relevant papers dedicated to urban tourism, trying to make emerge these concepts.

Tourism is a powerful economic driving force for urban contexts and regions as well (Garcia 2010; Calero and Turner, 2020). However, some recent factors linked especially to the so-called sharing economy have brought to light also some dark sides of urban tourism. A new era based on digital platforms has augmented potentialities for tourists, the tourism industry, and city councils; some stakeholders have maximized their value but with the sacrifice of others (Buhalis et al, 2020). Effective policies for tourism growth require an integrated and multi-faced approach to tourism policy development (Haxton, 2015, p. 3). The Organization for Economic Co-operation and Development (OECD) committee dedicated to tourism, through its reports, claimed that tourism policies should be long-term based, and so far, governments have put insufficient attention on policy inter-linkages with related policy areas. In the same tone, the United Nations World Tourism Organization (UNWTO, 2018) recommended a series of long-term strategies and policies to overcome most of the urban tourism growth problems along with measures to be implemented and monitored. OECD Tourism Committee identified seven key issues for sustainable growth in the long-term (Haxton, 2015); tourism and land use planning, competing demands for scarce resources, tourism and transport, tourism and emergency management, high value-added growth and tourism, SMEs and global value chains, and supporting effective policies for tourism growth. According to the OECD, these key issues can also challenge urban tourism.

Tourism and land use planning, combined with the competing demand for scarce resources, is probably one of the most studied issues for urban tourism, often ascribable to the overtourism phenomenon (Peeters et al., 2021). Dansero et al. (2016) analyzed the Italian city of Turin and the social phenomenon of urban land use connected with the integration between urbanism and tourism. The authors highlighted the difficulties for policymakers in integrating context territory, typical of existing activities, and project territory, a new territory allocated for events or leisure activities, sometimes temporary. Richards (2017) demonstrated how urban zoning schemes are outdated and unsuitable for new situations where dynamism is the key. A typical mistake in local government planning and development is the creation of delimited event zoning. This stems from traditional urban zoning policy, where specific parameters and demarcations for each zone are established (Page and Duignan, 2023). However, Page and Duignan (2023, p. 6) debated how blending tourism and event enterprise could be integrated into the city without creating delimited zones and modifying the traditional internal

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geography of postmodern cities. According to the authors, the simple research question for this debate is: who belongs and who owns the keys of the city? The answer is not that simple, and from the literature, it seems there are different emerging approaches. Concurrent and local factors such as land ownership, political choices, social classes, and others can differently shape the space of the city and urban tourism. For instance, Ong and Smith (2021), analyzing the development of Bangkok and Jakarta, proposed a model where tourism is an early feature for the expansion of the cities and overtourism is not a big issue like in other cities. Apparently, these big cities have created separate and sometimes overlapping areas for tourism. However, the authors concluded that this model could not be generalized to smaller cities, and factors such as Airbnb could also change in the future the geography of the two mega-cities; as we later discuss, this has happened in several other cities. Bouchon and Rauscher (2019) corroborated different results for smaller cities by studying typical European ones of different sizes, but certainly not classifiable as mega cities. The authors showed how Paris, Barcelona, Berlin, Munich, Paris, Regensburg, and Venice have been troubled by overtourism problems, even if they have tried to improve the issue in different ways. Bouchon and Rauscher (2019) analyzed these cities through the lens of the UNWTO study (2018). The latter, indeed, proposed one of the most deepened studies related to sustainable tourism growth in cities and overtourism. The study was carried out in eight European cities: Amsterdam, Barcelona, Berlin, Copenhagen, Lisbon, Munich, Salzburg and Tallinn. In this document, eleven strategies and sixty-eight measures are considered. In summary, the strategies deal with the dispersal of tourists within the city, time-based dispersal, stimulating new itineraries in the city, reviewing regulations, enhancing visiting segmentation, ensuring benefits for residents, tourists, and communities, improving infrastructure and facilities, communicating with and engaging local stakeholders and tourists, and set monitoring and response measures. The most negative impacts of overtourism perceived by residents are an increase in house prices, an increase in private and public transport prices, and a general increase in shopping and food prices. By contrast, the UNWTO research also highlighted that residents perceived positive impacts from tourism, such as an international atmosphere, more events, and protection and restoration of traditional architecture. The UNWTO study stressed the concepts of adopting long-term policies and key policy measures as well. Confirmation of overtourism issues in European cities came directly from the European Parliament (Peeters et al., 2018) which defined a set of indicators to measure and control overtourism: tourism density and intensity, the share of Airbnb and Booking.com bed capacity, the share of tourism in local GDP, air travel intensity, closeness to airport and cruise port and UNESCO World Heritage Sites. Bouchon and Rauscher's paper (2019) discussed, for instance, how Barcelona established the Barcelona Tourism Board, which is dedicated to communicating the city as a quality cultural and creative destination enhancing high-value tourism segmentation and shifting from a cheap image perception. Barcelona and Berlin are struggling to integrate the needs and expectations of tourists and residents towards "quality before growth" (Bouchon and Rauscher, 2019, p. 612). A different scenario can be described for Munich; here, over-tourism has produced limited discontentment (Buchwald, 2019), as the local government has leveraged a dispersal of tourists within the city and enforced laws against the abuse of residential houses used for short rental through digital platforms. Munich also represents an interesting case study where, due to the high cost of living, there is a scarce gap between residents' and tourists' lifestyles. Specifically, UNWTO (2018) suggested that tourism strategies and policies should take the tourists into consideration among the stakeholders. The tourist becomes a temporary resident and is not seen as a complete stranger who steals spaces but rather an integrated invitee (Bouchon and Rauscher, 2019). Kagermeyer and Erdmenger (2019) affirmed that integration problems arise when there is a large gap between the lifestyles of locals and tourists. The gap in lifestyle has been more felt in cities like Berlin and Venice; in the latter case, the phenomenon has been so exacerbated that the city center has been gradually left by residents who now live outside and often rent their houses, profiting from it and, to some degree, living with it (Oriani, 2022). Finally, Bouchon and Rauscher (2019) presented the Paris case study, where, without any planned strategy, a more time-based dispersal of tourists is occurring since many residents leave the city during summer.

Other authors, instead, analyzed different contexts where spaces for tourism are more blended with city spaces, sometimes creating contrasts and social conflicts. For instance, del Romeo Renau (2018) proposed the case study of Valencia. The authors claimed that digital platforms and the sharing economy have changed urban planning, bringing urban conflicts due to the "touristification" of urban areas.

Gutiérrez et al. (2017) studied how Airbnb is increasing tourism pressure in the city center of Barcelona, asserting that the phenomenon can be generalized to many other European cities. The rise of Airbnb and its impacts are so debated in the literature that Page and Duignan (2023) claimed that an astonishing 1100 papers have focused on it since 2011. For instance, Horn and Merante (2017) studied the short-term effects of Airbnb on the housing market in the city of Boston, arguing that policymakers were not able to make weighted decisions. Chang (2020) demonstrated how the room-sharing model of Airbnb in Taiwan has a positive effect on house rental and sales prices, while tax policies can reduce the number of Airbnb offers. Calzada (2020) shifted focus to data and algorithms owned by digital platforms like Airbnb and Booking.com, highlighting the need for different strategies for transforming the tourism model in Europe and reassessing tourism policy and planning, especially for cities. According to the author, new social models like cooperative platforms should be implemented for a more sustainable and democratic tourism model. Tourism "extractivist" platforms should not just be owned and managed by big digital corporations but rather by a European city-regional networked federation; this represents a multi-stakeholders framework made up of local and regional authorities, the private sector, including SMEs, and most importantly, citizens. This should improve the interactions between visitors and residents, where ultimately citizens decide their own future without external disruptive influences (Calzada, 2020, p. 83).

The OECD Tourism Committee, as well as the UNWTO, identified transport and mobility as another relevant issue for urban tourism. Tourism intensity is a demand-enhancing factor in urban public transport (Albalade and Bel, 2010),

and if mobility is hampered by an inefficient transport system, this could result in issues for tourists and residents. Nevertheless, the authors concluded that in 2010, the growth in tourism numbers seemed not to be addressed in several European cities by a sufficient extension of transport service supply. Domènech et al. (2023), investigated tourists' transport in Barcelona, a city that has had problems in terms of mobility for decades (Nieuwenhuijsen, 2020). Domènech et al. (2023) claimed how mobility and transport are embroiled directly or indirectly with overcrowding of public spaces, unruly behavior of visitors, impacts on urban spaces, and environmental issues. They concluded that tourist cities should adopt strategies for the use of different modes of transport in relation to the different profiles of tourists. Anton Clavé (2019) confirmed how tourists' mobility affects the planning and management of urban spaces, tourism activities as well as the quality of life of the different stakeholders involved, including residents. Several authors studied the negative effects of transport and mobility in terms of visitors' experience (Becken et al., 2017), city reputation, and rejection of tourism activities by local communities (Martín Martín et al., 2018).

On the subject of Milan and its local governance, some authors started analyzing how the city is trying to deal with the growth of tourists and visitors, in general, sharing its spaces and services. Rabbiosi (2016) was one of the first scholars who explored the initiatives of Milan as opportunities to meet and hybridize residents and tourists. Two specific initiatives have been managed since 2011 to change the relationships between these two stakeholders, legitimizing new urban geographies. The first one consisted of Milan residents inviting tourists for dinner, while the second was the establishment of a MigrantTour as part of a European network that supported intercultural tourist itinerary exchanges. The author concluded this was just the beginning of a more integrated process, calling for broader urban policies. Bernardi and Diamantini, (2018) studied the urban governance of a tentative "sharing city" in Milan, developing a three-dimensional model and comparing it with Seoul's. Both local governments in 2018 were trying to work along technological, economic, and human dimensions to develop a sharing city avoiding a purely neoliberal logic of profit or a technocratic orientation. Even if the authors stressed the concept of cooperation between urban governance and the involved stakeholders, such as residents, businesses, third sector, digital platforms, and research centers, they concluded that both municipalities lacked institutionalized mechanisms of collaboration (Bernardi and Diamantini, 2018, p. 30). Furthermore, while the models pinpointed the involvement of local authorities and residents, there is neither a trace of tourists and their representatives among the stakeholders nor a discussion of the sharing city and its effect on tourism issues. Only some mentions of the well-known potential issues of gentrification connected with Airbnb rentals are alluded to. Investigating the impacts of Airbnb in Milan, Amore et al. (2022) criticized the Milan trajectory where, starting from the previous decade, private and business stakeholders favored a *laisses-faire* on short-term rental local legislation, favoring Airbnb which boomed in 2015 during the Expo event. The city council and the region tried to adopt legislation to limit the phenomenon, but Airbnb and other platforms have been meanwhile legitimized and often appreciated by residents. Aguilera et al. (2019) compared the responses to local legislation policies in Milan, Paris and Barcelona arguing that is difficult to completely enforce legislation to mediate digital platform effects on short-term rentals. We can conclude our literature review by stating that Milan probably is still in a transition from more than two decades of a market and liberal oriented governance, towards a more social and shared model (Costa et al., 2016), and in this narrative it is not clear what the plans and processes put in place for tourism management are.

Purpose of the paper. Our research is divided into two parts. This first part is dedicated to developing a semi-structured questionnaire to collect data and information on how the local government of Milan is managing the constant growth in the number of tourists and its issues. In this light, our research is twofold. First, we inductively developed semi-structured questionnaire to collect data and information. Then we analyzed the collected data to construct a theoretical framework addressing questions connected with the assumptions for urban tourism growth.

Methodology. In order to develop the semi-structured questionnaire, we found some sensitizing concepts through the previous framework of literature review. Sensitizing concepts give the researcher an overall sense of direction and guidance in approaching inductive research, suggesting preparatory concepts to develop (Bowen, 2006). Sensitizing concepts are starting elements in data grouping, about which the researcher usually has no distinct idea. In this way, we reviewed the most relevant papers dedicated to urban tourism, trying to make these concepts emerge.

Results. We developed a first interview protocol, which is a semi-structured questionnaire, to collect data and information about the sensitizing concepts. Following the open questions forming the questionnaire to be administered to important policymakers of Milan.

- Is the growth in tourists connected to precise planning?
- Or is it more the result of different synergic actions not always connected with each other?
- Talking about overtourism, what are the most significant impacts (e.g., land competition, gentrification, prices on the rise, B&Bs and residents, traffic congestion, micro-criminality, public disturbance, etc.)?
- In what way are you dealing with such issues (in the short and long term)?
- Or are you tolerating these problems because you think they are intrinsically rooted in the growth?

Research limitations. This part of the research has limitations mainly linked to its aim of developing a semi-structured questionnaire and the possibility of not collecting relevant data for inductive theory construction.

Managerial implications. We discussed how Milan's local government intends to plan and manage the issues involved with the growth. In this way, we provide practitioners such as tourism planners, policymakers, and other managers within local governments with a framework that can be implemented and adapted in similar contexts. Milan is classified as a medium-large-sized European city like several others around Europe, and our results could be generalized

for a range of cities in a similar context. In the broad debate on urban tourism, this research also brings new theoretical elements to fill the gaps mentioned in the need for more structured approaches and future directions.

Originality of the paper. To the knowledge of the authors, this is the first attempt to develop a questionnaire for this aim.

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La formazione degli ecosistemi digitali tra strategie deliberate e processi spontanei

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Abstract

Questo studio affronta il tema della formazione degli ecosistemi digitali intorno ad una piattaforma digitale, che rappresenta il contesto in cui le interazioni tra i diversi attori avvengono. La fase di avvio di tali ecosistemi è particolarmente critica e necessita di una gestione attenta da parte degli orchestratori, dal momento che in questa fase occorre porre le basi per innescare efficaci effetti di rete che consentano la sopravvivenza e lo sviluppo successivo dell'ecosistema.

La ricerca, in particolare, prende in esame l'interazione tra le strategie deliberatamente messe in atto dall'impresa guida per gestire la creazione e l'espansione dell'ecosistema ed i meccanismi di sviluppo che emergono in modo spontaneo nell'ecosistema.

Il lavoro analizza il caso studio di izi.TRAVEL, una piattaforma digitale che mira a favorire la democratizzazione della cultura e che utilizza lo storytelling per la creazione dei contenuti culturali. Lo storytelling, attraverso un linguaggio semplice e di facile comprensione per tutti, consente infatti una più facile partecipazione sia a coloro i quali intendano creare e condividere contenuti culturali tramite la piattaforma digitale, sia ai fruitori degli stessi.

I risultati sottolineano il ruolo delle strategie attuate deliberatamente da izi.TRAVEL per espandere la popolazione dell'ecosistema in termini sia di numerosità che di varietà degli attori, al fine di creare valore e di favorire lo sviluppo dell'ecosistema. Il lavoro evidenzia altresì l'importanza di alcuni meccanismi di sviluppo che si realizzano in modo spontaneo e non controllato dall'impresa guida, contribuendo positivamente allo sviluppo dell'ecosistema anche attraverso l'attrazione di nuove tipologie di attori. L'analisi condotta evidenzia come tali meccanismi spontanei possano essere in qualche modo stimolati dalle strategie messe in atto dai gestori dell'ecosistema, consentendo così di riconoscere un'interazione positiva tra scelte deliberate e meccanismi emergenti nello sviluppo dell'ecosistema.

Il lavoro offre sia contributi teorici, che arricchiscono il dibattito sui processi di avvio degli ecosistemi digitali, sia implicazioni pratiche per i manager coinvolti nella loro gestione.

Parole chiave: ecosistema digitale; creazione dell'ecosistema; strategia; storytelling; processi emergenti; meccanismi di cambiamento.

Inquadramento della ricerca. Gli ecosistemi digitali sono contesti virtuali in cui, attraverso piattaforme digitali, i diversi partecipanti possono scambiare informazioni, esperienze, servizi e contenuti, in modo tale da generare valore sfruttando le loro complementarità (Alaimo et al., 2020; Cennamo, 2021; Gawer, 2014; Jacobides et al., 2018; Tan et al., 2015).

Tali ecosistemi sono stati analizzati dagli studiosi prendendo in prestito la metafora degli ecosistemi naturali, seppur con alcune differenze (Evans, 1956; Marton, 2022). Infatti, diversamente dagli ecosistemi naturali, un ecosistema digitale non si forma in modo del tutto spontaneo, avendo bisogno di una infrastruttura tecnologica, che rappresenta l'“habitat” in cui l'ecosistema ha origine ed in cui i suoi diversi attori interagiscono. Esso dunque si caratterizza per l'intenzionalità della sua creazione e della sua gestione (Cennamo, Santalò, 2019; De Reuver et al., 2018; Iansiti, Levien, 2004a; Jha et al., 2016; Kapoor, 2018; Moore, 1993). Per queste ragioni, alcuni studiosi contestano l'applicabilità della metafora ecologica agli ecosistemi digitali (Mars et al., 2012; Oh et al., 2016). Gli ecosistemi digitali sono più facilmente accostabili metaforicamente agli ecosistemi artificiali (come ad esempio un lago artificiale), che vengono creati e gestiti deliberatamente dall'uomo, ma nei quali è possibile che alcune dinamiche evolutive spontanee si realizzino portando, ad esempio, alla creazione di nuove specie (Clifford, Hefferman, 2018; Meyerhoff et al., 2019). Analogamente, anche negli ecosistemi digitali possono crearsi delle dinamiche di tipo spontaneo, che possono dare vita a processi generativi di cambiamento che contribuiscono all'evoluzione dell'ecosistema, seppur non precedentemente deliberati dall'impresa guida (Cennamo, Santalò, 2019). Tali processi emergenti, che si possono realizzare anche come conseguenza indiretta e

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non intenzionale di strategie implementate dai gestori dell'ecosistema, sono stati ad oggi poco osservati dagli studiosi, ma meritano una maggiore attenzione, dal momento che possono contribuire in modo positivo allo sviluppo dell'ecosistema.

Quanto premesso evidenzia l'importanza delle strategie adottate per l'avvio e lo sviluppo degli ecosistemi digitali, nella prospettiva della creazione del valore, nonché dell'osservazione delle dinamiche di sviluppo che da esse possono scaturire nell'ecosistema.

Gli studi condotti hanno preso in considerazione diverse tipologie di decisioni strategiche, che devono essere opportunamente coordinate tra loro per ottenere l'efficace funzionamento dell'ecosistema: da quelle relative alla progettazione dell'infrastruttura tecnologica, per consentire ai diversi attori di interagire efficacemente attraverso la piattaforma digitale (Hanseth, Lyytinen, 2010; Tilson et al., 2010; Tiwana et al., 2010) o a diverse piattaforme di interagire tra loro (Ondrus et al., 2015); a quelle di tipo organizzativo, relative alle modalità per disciplinare l'accesso all'ecosistema e per regolare, incentivare e controllare la partecipazione ed il comportamento degli attori, al fine di valorizzare le complementarità dei partecipanti (De Reuver et al., 2018; Feller et al., 2012; Gawer, Cusumano, 2014; Huber et al., 2017; Jacobides et al., 2018; Wareham et al., 2014); alle strategie messe in atto per lo sviluppo dell'ecosistema (Alaimo et al., 2020; Li, Agarwal, 2017; McIntyre, Srinivasan, 2017; Parker et al., 2017; Tan et al., 2015).

Obiettivo del paper. Questo lavoro esplora le prime fasi di vita degli ecosistemi digitali, attraverso l'analisi delle strategie implementate per la loro formazione e delle dinamiche di cambiamento che ne influenzano lo sviluppo (Adner, 2017; Jacobides et al., 2018; Dushnitsky et al., 2022).

Lo studio della formazione di un ecosistema digitale risulta particolarmente interessante e critico per l'elevata probabilità di fallimento proprio nelle fasi iniziali del suo ciclo di vita (Yoffie et al., 2019).

Il lavoro si concentra sugli ecosistemi governati da un'impresa leader, che generalmente è anche proprietaria della piattaforma digitale (Furr, Shiplov, 2018; Iansiti, Levien, 2004b; Williamson, De Meyer, 2012; Weill, Woerner, 2015).

Esso mira a comprendere le strategie deliberatamente messe in atto per popolare ed indirizzare lo sviluppo dell'ecosistema al fine di innescare i desiderati effetti di rete e creare valore. In particolare, vengono investigate le strategie dell'impresa guida orientate all'espansione della popolazione dell'ecosistema, in termini sia di numero che di varietà degli attori coinvolti (Adner, 2017).

Lo studio include altresì l'analisi delle implicazioni delle strategie implementate sul cambiamento nell'ecosistema, evidenziando in particolare come alcune dinamiche di sviluppo possano emergere in modo spontaneo, come conseguenze indirette, non previste né cercate, delle strategie attuate. Ciò che si intende evidenziare è, in particolare, come lo sviluppo dell'ecosistema nel tempo possa essere la conseguenza dell'interazione tra scelte deliberate e meccanismi spontanei di cambiamento.

Metodologia. Per indagare la formazione e lo sviluppo dell'ecosistema digitale, è stata condotta un'analisi in profondità del caso studio di izi.TRAVEL, una piattaforma digitale per la condivisione e fruizione di contenuti culturali, come audioguide e audiotour, lanciata nel 2013 e cresciuta velocemente negli anni seguenti in termini di numero e varietà degli attori coinvolti. Si ritiene che questo caso (Eisenhardt, 1989; Yin, 1994), in cui un'impresa guida ha messo in atto specifiche strategie miranti allo sviluppo dell'ecosistema, possa rappresentare un contesto di analisi e un esempio particolarmente utile per studiare l'interazione tra le traiettorie di sviluppo deliberate e quelle emergenti in modo spontaneo nell'ecosistema.

La piattaforma digitale izi.TRAVEL è stata lanciata al fine di favorire la democratizzazione della cultura. Pertanto, essa rappresenta un contesto virtuale tramite il quale ciascun individuo o organizzazione può esprimere la propria partecipazione culturale attraverso la condivisione di contenuti di vario tipo (per esempio audio, video, fotografici) o la libera fruizione di audioguide o audiotour creati e condivisi nella piattaforma da altri soggetti. La gratuità della fruizione dei contenuti, così come la libertà di pubblicare le storie create, evidenziano l'intento di democratizzare l'accesso alla cultura, favorendo la più ampia partecipazione di residenti, turisti e istituzioni culturali. L'intento di rendere la cultura accessibile e comprensibile ai più è reso efficace dall'individuazione dello storytelling (Bonacini, 2019, 2020) come strumento per la creazione dei contenuti audio, attraverso l'utilizzo di un linguaggio semplice, diretto e tale da essere facilmente compreso anche dai soggetti meno colti.

Coerentemente con l'obiettivo evidenziato, il management di izi.TRAVEL, sin dal lancio della piattaforma, ha favorito la ampia e libera partecipazione di tutti i soggetti interessati senza porre specifiche regole e limitazioni per l'accesso e per la condivisione e fruizione dei contenuti. La scelta di non sottoporre i contenuti da pubblicare ad una preventiva approvazione da parte del management di izi.TRAVEL, al fine di accertare la correttezza delle informazioni, è in linea con il rispetto della libera espressione culturale. Tuttavia, resta salva l'attivazione di un meccanismo spontaneo di controllo sociale tale per cui, i soggetti che dovessero notare inesattezze o informazioni errate nei contenuti pubblicati, possono segnalarlo consentendo così agli autori di rettificarli.

La progettazione ed il lancio della piattaforma digitale sono stati possibili grazie ad un cospicuo investimento iniziale effettuato dalla proprietà di izi.TRAVEL, che si è fatta carico nel tempo anche della copertura dei costi di gestione fino alla fine del 2016, quando la proprietà fu ceduta ad altri investitori. Attualmente, i costi correnti sono coperti in parte dalla proprietà ed in parte attraverso fonti di ricavo esterne, che includono: le percentuali incassate da izi.TRAVEL sui ricavi generati dalla vendita di contenuti a pagamento (che rappresentano comunque una quota residuale rispetto ai contenuti generalmente offerti in modo gratuito tramite la piattaforma); le sottoscrizioni volontarie effettuate annualmente dagli utilizzatori, a fronte delle quali è rimossa la visione di messaggi pubblicitari sul web e sull'app; le somme pagate da altre piattaforme distributrici dei contenuti a pagamento di izi.TRAVEL, in percentuale rispetto

all'ammontare complessivo delle somme corrisposte per i contenuti venduti.

Al fine di studiare il caso, sono stati raccolti diversi tipi di documenti tramite il web e l'azienda stessa, relativi al periodo dal 2015 al 2022. In particolare, sono stati consultati diversi white paper redatti da izi.TRAVEL, articoli sulle iniziative di promozione e divulgazione di izi.TRAVEL, video ed altri materiali disponibili sul web e relativi, ad esempio, ad aspetti operativi e didattici sul funzionamento della piattaforma, o ad attività promozionali per diffondere la conoscenza di izi.TRAVEL e le sue funzionalità. Sono stati inoltre consultati report, statistiche e dati messi a disposizione dalla stessa azienda.

Oltre all'utilizzo di queste fonti secondarie, lo svolgimento di interviste semi-strutturate ha consentito una chiara ricostruzione delle strategie e delle dinamiche di avvio e sviluppo dell'ecosistema di izi.TRAVEL. Tra il 2021 ed il 2023 sono state condotte 20 interviste a diverse tipologie di attori dell'ecosistema, tra cui: produttori di contenuti (ad esempio istituzioni culturali come musei o associazioni culturali); fruitori di storie pubblicate su izi.TRAVEL (ad esempio residenti, turisti, organizzazioni); promotori dei contenuti di izi.TRAVEL (ad esempio organizzazioni come alberghi o uffici turistici, che, pur non creando direttamente contenuti, favoriscono la conoscenza della piattaforma izi.TRAVEL tra residenti e turisti, incoraggiandone l'utilizzo); distributori di contenuti (ad esempio altre piattaforme digitali tramite cui gli utenti possono collegarsi e raggiungere i contenuti di izi.TRAVEL); fornitori indipendenti di servizi (ad esempio esperti nella creazione di contenuti digitali tramite la piattaforma e nello storytelling che offrono le proprie competenze professionali, attraverso attività di formazione, collaborazione e consulenza, a beneficio delle istituzioni culturali interessate a pubblicare contenuti culturali su izi.TRAVEL).

Le interviste sono state trascritte e sono state poi esaminate al fine di identificare le strategie messe in atto dal management di izi.TRAVEL. Partendo dalle risposte degli intervistati, sono stati individuati dei codici aperti (Gioia et al., 2013), classificati successivamente in categorie più astratte e riferite agli obiettivi e alle scelte strategiche perseguiti dal management di izi.TRAVEL nel tempo. In questo modo è stato possibile ricostruire i cambiamenti negli obiettivi e nelle azioni strategiche messe in atto al fine di costituire e sviluppare l'ecosistema; al contempo, l'analisi ha consentito anche di osservare chiaramente alcune dinamiche di cambiamento emergenti nell'ecosistema.

Risultati. L'analisi dei documenti e delle interviste condotte ha portato a ricostruire il percorso evolutivo dell'ecosistema di izi.TRAVEL dal suo avvio.

Inizialmente, il principale obiettivo del management di izi.TRAVEL era popolare la piattaforma digitale attraendo soggetti disposti a condividere storie e soggetti interessati alla loro fruizione, in modo da creare adeguati effetti di rete e risolvere il cosiddetto dilemma dell'"uovo e della gallina" (Caillaud, Jullien, 2003; Gallagher, Wang, 2002). Infatti, la presenza di un limitato numero di storie disponibili può rendere la piattaforma poco attrattiva per i potenziali fruitori e, allo stesso modo, la presenza di pochi fruitori può scoraggiare la creazione e condivisione di storie. In questa prima fase, pertanto, il management ha mirato ad attrarre da una parte, le istituzioni culturali come potenziali produttori di contenuti, dall'altra i soggetti potenzialmente fruitori di audioguide e audiotour.

Questo obiettivo è stato raggiunto mettendo in campo tre diverse strategie: 1) l'ingaggio diretto delle istituzioni culturali, in primis i musei, attraverso un gruppo di collaboratori - composto da account manager alle dirette dipendenze di izi.TRAVEL o operanti come agenti esterni - chiamati ad informare ed istruire le istituzioni culturali su izi.TRAVEL e le sue funzionalità, al fine di rendere questi soggetti capaci di creare storie e gestire il proprio profilo sulla piattaforma; 2) la creazione di campagne di comunicazione sui social network, miranti ad accrescere la consapevolezza degli individui sull'esistenza di izi.TRAVEL e sulle opportunità di fruizione e creazione di contenuti; 3) l'avvio di progetti di fertilizzazione a livello locale, uno dei quali svolto in Sicilia, condotti da manager dedicati e miranti ad ampliare la creazione di contenuti su izi.TRAVEL, attraverso il coinvolgimento di numerosi attori locali, tra cui musei, uffici turistici, siti archeologici, scuole. Responsabilità del manager era dunque attrarre, collegare, istruire e coordinare gli attori coinvolti nelle attività proposte nel progetto. Tali iniziative hanno consentito sia di divulgare la cultura dello storytelling come modalità di comunicazione culturale tra i più giovani, sia di diffondere le competenze legate alla creazione di contenuti digitali, favorendo la produzione di numerose storie tramite izi.TRAVEL. A titolo esemplificativo, in Sicilia la manager locale ha affermato che durante l'anno in cui il progetto di fertilizzazione è stato condotto (tra il 2016 ed il 2017) sono state create oltre 350 audioguide e più di 3200 storie geolocalizzate.

Avendo le strategie attuate mostrato la loro efficacia nell'iniziare a popolare la piattaforma di izi.TRAVEL attraendo produttori e fruitori di contenuti, ed innescando i desiderati effetti di rete, alla fine del 2016 il management cominciò ad avere una visione più chiara dell'ecosistema che si stava formando. In questa direzione, furono messe in atto ulteriori strategie miranti non soltanto a continuare ad espandere numericamente, ma anche ad incrementare la varietà degli attori coinvolti nell'ecosistema.

In questa direzione, vennero implementate strategie di ingaggio collettivo, attraverso la realizzazione di conferenze, workshop e incontri miranti a coinvolgere diverse tipologie di operatori del turismo, come hotel, fornitori di servizi turistici (ad esempio noleggio auto, trasporti locali, ecc.), uffici turistici, al fine di far loro conoscere izi.TRAVEL e di incoraggiarli a promuoverne l'utilizzo tra i loro clienti.

La strategia di espansione dell'ecosistema, attraverso l'incremento della varietà degli attori coinvolti, portò anche, a partire dal 2019, alla scelta di stabilire partnership con altre piattaforme digitali attraverso le quali rendere accessibili i contenuti di izi.TRAVEL. Tra queste vi è, ad esempio, Road.travel, una piattaforma tramite la quale vengono proposti itinerari di viaggio in auto. Così le piattaforme partner diventano attori dell'ecosistema, svolgendo il ruolo di "distributori" dei contenuti di izi.TRAVEL.

Quanto finora evidenziato mostra come le strategie messe deliberatamente in atto dal management di izi.TRAVEL

abbiano prodotto gli effetti desiderati, delineando l'assestamento e la legittimazione da parte del mercato dell'ecosistema di izi.TRAVEL. (Garud et al., 2022)

La nostra analisi ha inoltre consentito di identificare alcuni processi di cambiamento non deliberati da izi.TRAVEL, ma innescati indirettamente dalle strategie implementate. Mentre l'ecosistema si stava sviluppando, sorsero alcuni problemi legati ad un cambio del vertice proprietario ed alla improvvisa riduzione delle risorse finanziarie per supportare lo sviluppo dell'ecosistema. A seguito di tale criticità improvvisa, il management, all'inizio del 2017, dovette ridurre drasticamente la rete di account managers diffusi nel territorio.

Questa scelta necessaria per far fronte alle difficoltà economiche sopraggiunte, sorprendentemente non generò gli effetti negativi temuti sull'attività di izi.TRAVEL. Anzi, a seguito del licenziamento degli account manager, si attivarono in modo spontaneo ed inatteso dei meccanismi che diedero origine all'emergere di una nuova tipologia di attori nell'ecosistema, rivelatasi proficua per l'ulteriore sviluppo dell'ecosistema. In particolare, diversi ex account manager, una volta interrotta la collaborazione con izi.TRAVEL, decisero spontaneamente di restare ad operare nell'ecosistema, ma a diverso titolo, come fornitori indipendenti di servizi. Essi infatti decisero di offrire le loro specifiche competenze professionali direttamente alle istituzioni culturali, attraverso attività di formazione, di consulenza o di realizzazione dei contenuti da pubblicare su izi.TRAVEL. Questo meccanismo trasformativo spontaneo, attraverso cui soggetti prima sotto il controllo di izi.TRAVEL, iniziano a partecipare in modo indipendente nell'ecosistema, è stato da noi denominato "meccanismo di gemmazione". Esso ha dato origine alla formazione di una nuova tipologia di attori, appunto i fornitori indipendenti di servizi, che hanno dato un ulteriore impulso allo sviluppo dell'ecosistema favorendo le connessioni tra vecchi e nuovi attori. Un simile processo trasformativo è stato notato anche con riferimento al ruolo dell'ex manager del progetto di fertilizzazione locale in Sicilia che, conclusasi l'attività progettuale annuale finanziata da izi.TRAVEL, ha continuato, in modo del tutto spontaneo e indipendente, a sviluppare la rete di relazioni con e tra le istituzioni culturali del territorio siciliano, e ad avviare progetti volti a promuovere l'utilizzo della piattaforma izi.TRAVEL e a formare nuove professionalità nel campo dello storytelling digitale.

Limiti della ricerca. Sebbene consapevoli che l'uso di un singolo caso studio possa rappresentare un limite in termini di generalizzabilità dei risultati, riteniamo che il caso preso in considerazione possa comunque offrire interessanti spunti per l'analisi e la comprensione delle dinamiche di cambiamento anche di altri contesti di ecosistemi digitali, attraverso l'osservazione dell'interazione tra scelte deliberate e meccanismi spontanei di cambiamento e sviluppo.

Ricerche future potrebbero ulteriormente studiare i processi di formazione ed espansione degli ecosistemi digitali, investigando altre tipologie di meccanismi di sviluppo, gli elementi scatenanti e le implicazioni per lo sviluppo dell'ecosistema.

Implicazioni manageriali. Questa ricerca fornisce alcuni spunti per i manager, evidenziando come una appropriata orchestrazione della formazione e gestione degli ecosistemi digitali debba considerare l'importanza dell'interazione tra scelte strategiche deliberate e i meccanismi di sviluppo spontanei e pertanto difficilmente prevedibili. Tali processi, come ad esempio il meccanismo di gemmazione individuato dall'analisi del caso esaminato, dovrebbero essere accuratamente osservati e valorizzati, attraverso specifiche decisioni strategiche, al fine di ottimizzarne gli effetti a vantaggio dello sviluppo complessivo dell'ecosistema.

Lo studio inoltre evidenzia come anche risorse, che non sono direttamente controllate dall'impresa guida, possano contribuire allo sviluppo dell'ecosistema generando sinergie al suo interno. La consapevolezza di ciò potrebbe stimolare i manager a trovare le giuste modalità per beneficiare dell'azione degli attori indipendenti, realizzando efficaci sinergie per lo sviluppo dell'ecosistema.

Originalità del paper. Questo lavoro ha affrontato il tema degli ecosistemi digitali, focalizzandosi in particolare sulle prime e delicate fasi di avvio, ed analizzando l'interazione tra le strategie deliberatamente attuate da parte dell'impresa guida e le dinamiche di cambiamento emergenti in modo spontaneo nell'ecosistema.

I risultati dello studio evidenziano come processi di cambiamento spontanei nell'ecosistema, definiti come meccanismi di gemmazione, passano essere innescati, seppur indirettamente e senza una specifica intenzionalità, dalle strategie implementate.

In particolare, il meccanismo di gemmazione osservato nel caso di izi.TRAVEL ha determinato l'emergere di una nuova tipologia di attori nell'ecosistema, specificamente i fornitori indipendenti di servizi, che contribuiscono allo sviluppo dell'ecosistema, ad esempio, supportando e istruendo le istituzioni culturali nella creazione di contenuti su izi.TRAVEL, collaborando alla co-creazione di contenuti, formando i nuovi esperti nella produzione di contenuti digitali attraverso l'uso dello storytelling.

Questa ricerca offre alcuni interessanti contributi al dibattito scientifico sulle dinamiche di avvio e sviluppo degli ecosistemi digitali.

In primis, diversamente da precedenti ricerche che considerano la formazione dell'ecosistema come conseguenza di strategie deliberate dall'impresa guida (Adner 2017; Murthy, Madhok, 2021; Randhawa et al., 2022; Dushnitsky et al., 2022), questo studio pone l'attenzione anche sui processi di cambiamento spontanei che si possono verificare nell'ecosistema e che sono in grado di influenzarne lo sviluppo. In particolare, il lavoro identifica un meccanismo di sviluppo spontaneo denominato "meccanismo di gemmazione".

La ricerca evidenzia altresì come nessun attore dell'ecosistema, nemmeno l'impresa guida, possa avere il controllo completo sull'intero ecosistema (Marton, 2022), soprattutto nella fase di avvio in cui la proposta di valore stessa e il sistema delle relazioni tra gli attori sono in divenire. Tuttavia, diversamente da quanto evidenziato da studi precedenti, secondo cui la mancanza di controllo su risorse cruciali, controllate da altri attori, indebolisce l'impresa guida nel raggiungimento degli obiettivi strategici (Gawer 2014; Staub, 2021), il nostro caso mostra, attraverso il meccanismo di

gemmazione, come *izi.TRAVEL* abbia comunque potuto trarre un importante beneficio della presenza, nell'ecosistema, di risorse appartenenti ad attori indipendenti. Nello specifico, le competenze dei fornitori indipendenti di servizi, non più controllate da *izi.TRAVEL*, hanno generato un effetto sinergico nell'ecosistema, contribuendo di fatto al perseguimento dell'obiettivo di *izi.TRAVEL* di espandere l'ecosistema ed incrementare il valore creato. (Cennamo et al., 2023; Presenza et al., 2021; Reinsberg et al., 2023)

Inoltre, rispetto ad altre ricerche che hanno esplorato la formazione degli ecosistemi digitali (Alaimo et al., 2020; Cennamo, Santalò, 2013; Dushnitsky et al. 2022; Eisenmann et al., 2011; Gawer, Cusumano, 2008, 2014; Karhu et al., 2020; Kretschmer et al., 2022; Tan et al., 2015), questo lavoro pone l'accento in particolare sugli attori che partecipano all'ecosistema, consentendone il funzionamento efficace. A questo proposito, mentre precedenti studi hanno considerato specificamente le strategie rivolte agli attori principali dell'ecosistema, come ad esempio i produttori e fruitori di contenuti (Adner, 2017), il nostro lavoro sottolinea l'importanza di comprendere e valorizzare il ruolo che diverse categorie di attori possono svolgere, a vario titolo, nell'ecosistema, al fine di definire strategie miranti a coinvolgerli attivamente per la creazione di valore.

Infine, questa ricerca mostra come nuovi attori possano emergere ad un certo punto della vita dell'ecosistema (Murthy, Madhok, 2021), coesistere con gli attori già presenti, e operare in modo sinergico con essi contribuendo allo sviluppo complessivo dell'ecosistema. Ciò è in linea con le recenti ricerche nel contesto degli ecosistemi dell'innovazione, che evidenziano il ruolo degli attori non chiave, ossia gli intermediari dell'innovazione, che contribuiscono alla co-creazione dell'innovazione e alla facilitazione della formazione dell'ecosistema (Randhawa et al., 2018; Nenonen, Storbacka, 2020).

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Metaverse in social innovation: developing trends to support marginal areas sustainable growing

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Abstract

This study aims to illuminate several aspects linked to metaverse and social innovation within marginal areas growing. First, it underscores the collaborative relationship between the host community and the guest. Second, it demonstrates the presence of strategic bridging as a mediator. Third, it reveals how the metaverse can serve as both a strategy and a means of strategic bridging to facilitate relations between the host community and the guest.

Our initial analysis urges scholars and professionals to acknowledge the existing connection between guests and host communities. Within this framework, the metaverse concept is considered a strategic intermediary between these two parties. As suggested emphasized, within the metaverse context, a host community comprises the individuals or entities responsible for creating and overseeing virtual spaces, platforms, or environments. At the same time, guests are the users who interact with and explore these digital realms. Nonetheless, it is essential to note that there are numerous ways in which the metaverse can facilitate a connection between host communities and guests that warrant further exploration and validation.

Keywords: metaverse; social innovation; marginal areas; sustainable growing.

Framing of the research. *The rising importance of the ecosystem in the last decades has pushed different scholars and practitioners to analyse the conditions that create the existing bonds on which it is developed (Granstrand & Holgersson, 2020). The relevant literature argues that the ecosystem is: “a network of interconnected organizations, organized around a focal firm or a platform, and incorporating both production and use side participants, and focusing on the development of new value through innovation” (Autio & Thomas, 2014). This ecosystem term was born in biological studies that justified the “eco” feature with the impacts of this complex model characterised by People and Planet.*

On these bases, an ecosystem will be considered an interconnected network of individuals, organizations, resources, and institutions that collectively contribute to developing, adopting, and diffusing new ideas, technologies, and processes, producing solutions to economic, social and environmental needs. The importance of this ecosystem form lies in its ability to foster creativity, collaboration, and the overall advancement of society (Ritala & Almpantopoulou, 2017). First, the ecosystem sets the basis for structuring competitive advantage. Nations, regions, and organizations with solid innovation ecosystems gain a competitive edge in the global marketplace. Therefore, continuously innovating allows entities to stay ahead of the competition and respond effectively to changing market dynamics (Autio & Thomas, 2021). Secondly, knowledge-sharing and collaboration processes are boosted by the innovation ecosystem. Compared to the business ecosystem form, this model is prevalently based on an open innovation approach focused on exchanging knowledge and ideas among diverse stakeholders, such as entrepreneurs, researchers, educators, policymakers, and end-users (Vargo et al., 2015). Thirdly, entrepreneurship and startup growth are strongly promoted thanks to the development of the innovation ecosystem.

A supportive ecosystem provides an environment conducive to entrepreneurship. It encourages the formation of startups and enables them to access mentorship, funding, and resources essential for their growth and success (Granstrand & Holgersson, 2020). On the same line, it is clear that an ecosystem certainly sustains adaptability and resilience. Entities within the ecosystem are more likely to embrace change, respond to challenges, and pivot when necessary, ensuring long-term sustainability (Han et al., 2022); furthermore, these constant knowledge exchanges support SMEs in the innovation processes, reducing the innovation risks. At the same time, talent development can benefit

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from the reinforcement of the innovation ecosystem. Innovation ecosystems attract and retain a pool of diverse and talented components in different fields and diverse business sectors. The availability of skilled workers, researchers, and professionals contributes to the overall vibrancy and success of the ecosystem (Aarikka-Stenroos & Ritala, 2017).

Therefore, academics sustain that the ecosystem's real importance is that it plays a role as a catalyst for economic growth in developed, developing and underdeveloped areas (Autio & Thomas, 2021; Cobben et al., 2022). Innovation drives economic growth by creating new industries, generating employment opportunities, and increasing productivity (Izadi et al., 2020; Sartipi et al., 2021; Yousaf & Palazzo, 2023). Consequently, a vibrant ecosystem attracts investments and enables the development of a knowledge-based economy (Oh et al., 2016; Ritala & Almpantopoulou, 2017).

Starting from these premises, a thriving innovation ecosystem is essential for fostering creativity, driving economic growth, and addressing global challenges. It catalyses progress and ensures that societies and economies remain dynamic and resilient despite rapid technological and societal changes.

However, it is necessary to analyse how the ecosystem can apply its processes using strategic bridging to reach these goals. In this regard, stakeholder theory researchers consider the strategic bridge to be the ability to negotiate and build such social networks. This role, which could occur by a focal part or a platform, refers to situations in which one party links diverse constituencies to address some problem domain, such as corporate environmentalism (Stafford et al., 2000). Developing strategic bridging can involve aligning various goals and objectives within an organization or an entire ecosystem. This ensures that different actors share a mutual commitment towards common objectives, reducing silos and promoting collaboration and cooperation (Polonsky, 2001).

Moreover, academics highlight that strategic bridging can help integrate different stakeholders' needs and requirements, allowing for a more holistic approach to decision-making and resource allocation, especially when these resources are scarce (Park & Kohler, 2019). Besides, strategic bridging fosters adaptation to change in the subjects involved in the innovation ecosystems. In a rapidly changing business environment, strategic bridging can enable organizations/individuals/stakeholders to adapt more effectively. By connecting various elements of the business, leaders can respond to changes in the market, technology, or regulatory landscape in a coordinated and strategic manner (Shah, 2011). In addition, strategic bridging improves the decision-making procedures. It supports informed decision-making by providing a comprehensive landscape view, reducing complexity using reductionistic activities (Golinelli et al., 2012; 2015). This helps leaders/managers make decisions by considering broader implications and aligning them with the overall strategic direction (Stafford et al., 2000; Polonsky, 2001).

Having supported the relevance of strategic bridging in the development of an ecosystem, the effectiveness of this tool depends on the specific context and how well it is implemented within a particular scenario.

Regarding that, WEF (2023) claimed: "(...) The transformative power of technology cannot be denied, yet its application has both opportunities and challenges. At its core, the impact of technology, and thus the metaverse, is not solely defined by its capabilities but rather by collective behaviours, attitudes and approaches to its implementation. With the potential for significant disruption across industries, it is important to consider the implications of the metaverse on individual and collective well-being..." (<https://www.weforum.org/publications/social-implications-of-the-metaverse/>).

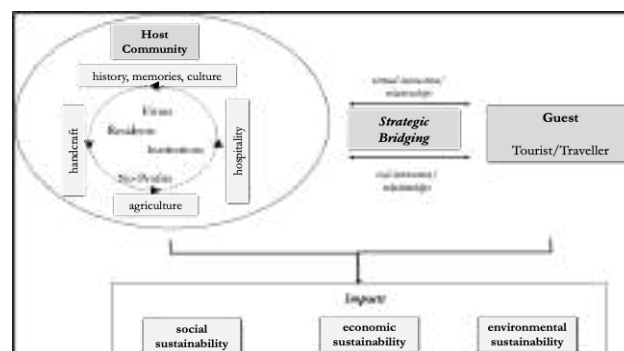
Consequently, the scope of this study is to deepen the role played by new digital dimensions and the metaverse, both as a strategic bridge supporting the social innovation phenomenon and as a strategy that can be implemented in different innovation ecosystems to foster economic, social and environmental impacts.

Purpose of the paper. The present research will shed light on different items: (i) first of all, it will highlight the existence of a positive relation between the host community and guest; (ii) secondly, it presents the existence of the mediating role of strategic bridging; (iii) thirdly, it shows that metaverse can be considered both a strategy and a strategic bridge to mediate the relations between the host community and guest.

This paper has the following structure: We present a brief review of related literature and hypotheses regarding strategic bridging, innovation ecosystem, and the new role that the metaverse can attain. Next, we describe the method. Afterwards, a case study is described to test the research hypotheses, followed by discussions, managerial implications, theoretical contributions, conclusions, limitations, and potential research directions.

The following sections describe the nexuses between the selected concepts, and the research hypotheses are shown in a conceptual model (see Figure 1).

Fig. 1 Conceptual framework. Analysing the role of metaverse as a strategy of strategic bridging



Source: Elaboration of Basile et al., (2021a)

Methodology. The present research analyses the Albaredo per San Marco case study to support the conceptual purpose. Albaredo is a mountainous little village in the Lombardia Region (Italy), with almost 300 inhabitants. The village has been depopulated and aged in the last decades, and the welfare and economic conditions have decreased.

The Albaredo per San Marco's project is associated with the area or community of Albaredo per San Marco. This could be a specific initiative, development plan, or undertaking to improve or enhance various aspects of the locality or its surroundings. The nature and scope of the project would depend on the specific goals and objectives set forth by the community or relevant stakeholders.

Albaredo per San Marco's project aims to introduce tourists to the village through a cultural entertainment game, "immersing" them in scenes of daily life, which tell of traditions, historical moments, habits and customs of the place, creating the relation between host and guest. The project is articulated in 12 stages, which can be activated via QR Code, which will lead the visitor to discover the secrets of the ancient village with quizzes and puzzles in a beautiful "journey" between present, past and future. An important push, therefore, for relaunching internal areas little known to tourists. Through the metaverse, considered in its mediating role, the territorial agents can promote places of great beauty, steeped in centuries-old traditions but unknown to most. This allows us to conserve traditions, historical culture, food, and wine identity. With this new technology, it is possible to plan territorial strategies of social innovation in growing economic sectors by involving visitors in peer-to-peer processes of "living a like local" projects, creating an attraction that directs tourist flows towards these unknown destinations (Basile et al., 2021a; Vrontis et al., 2021).

Results. Social and environmental problems are complex, and many potential ecosystem participants lack the necessary know-how to integrate appropriate environmental and social behaviours with their objectives; for these reasons, strategic bridging is increasingly becoming useful to support the ecosystem's emerging steps (Basile et al., 2022).

The strategic bridging agents forward their ends while connecting all stakeholders (Westley and Vredenburg 1991). Park and Kohler (2019) argued that within the sustainable tourism field, innovative value co-creation models are based on stakeholder theory and knowledge management using crowdsourcing platforms in their application.

In recent years, the most studied case has been the travel2change platform, which aims to connect travellers with the local community to create a positive impact (<https://travel2change.org/about/>).

On this wave, tourism destinations and service providers are increasingly embracing, supported by new technologies, open innovation, crowdsourcing, and crowdfunding models to develop new attractions and services, allowing the process of value co-creation among local community, tourists, and other stakeholders (Egger et al., 2016; Hjalager & Nordin, 2011; Lalicic & Dickinger, 2017). Within these peer-to-peer marketplaces, residents, tourists, traditional suppliers, platform providers, and policymakers are increasingly co-creating the tourism experiences, and in so doing, they transform and redefine the values, motives, reasons, and ways in which people travel and experience tourism (Sigala, 2015).

Therefore, the tourist model, proposed in Figure 1, is considered a way for travellers to feel like a local, becoming a component of the local community and a social and environmental solution seeker before the travel experience (McCool and Martin, 1994; Basile et al., 2021b).

The model reflects the growing practice of collaborative consumption and contextualizes this view (Belk 2014). Collaborative consumption implies various forms of resource redistribution among individuals and is viewed as an alternative consumption mode that offers value with less cost (Botsman and Rogers 2010; Gansky 2010; Lamberton and Rose 2012; Sacks 2011).

Regarding this trend, UNWTO claims the "Engage, Share, Collaborate!" model in SDGs implementation regarding collaborative relations and sustainable tourism. Four points characterize this model: 1) shape better tourism policies; 2) foster partnership and improve resource allocation; 3) increase tourism competitiveness; and 4) be a better and responsible traveller (<https://tourism4sdgs.org/> last access 18 August 2023).

This approach, considering also the travel2change example, highlights the role of platform and/or agents considered in stakeholder theory as a strategic bridging aimed to stimulate co-creation and cooperation and to provide a viable environmental solution when diverse stakeholders are unable to negotiate or cooperate freely due to mistrust, tradition, or logistic problems or when there is a need for a third party to restore a balance of power, resources, and expertise.

This evolution in the relations between the local community and guests finds its starting point and final goal in increasing tourists' use of peer-to-peer solutions, such as accommodation rentals, as a low-cost alternative to hotels. This scenario characterizes the sharing economy, where collaborative consumption allows people to create and maintain social connections by directly interacting with hosts (i.e., residents) and connecting with local communities by exchanging reciprocal cultural traits (Guttentag 2013).

Research limitations. The conceptual model must be tested in different sectors and countries to enhance the findings' generalizability. To enhance comprehension regarding the context-specific challenges faced by organisations across various industries and business environments, quantitative and qualitative methods can be employed for testing the framework.

Managerial implications. Our findings push academics and practitioners to consider the existing link between guest and the host community. In this scenario, following Autio & Thomas (2014), the metaverse concept is a strategic bridge, a platform, between these two players. As highlighted before, in the context of the metaverse, a host community refers to the individuals or entities that create and manage virtual spaces, platforms, or environments. At the same time, guests are the users who engage with and navigate these virtual realms (Park & Kim, 2022). However, it must be highlighted

that there are several ways in which the metaverse can act, or just is acting, as a bridge between host communities and guests that still need to be explored and tested.

Originality of the paper. This work proposes an initial research agenda that can guide future researchers and scholars in this area of research.

First, it is important to analyse whether the metaverse can foster cultural exchange (Koo et al., 2023). The metaverse allows for the creation of diverse and immersive virtual environments representing different cultures, traditions, and communities. Therefore, there is a need to explore how users (guests) can use and engage with these virtual spaces, leading to cultural exchange and understanding.

Secondly, the metaverse implies new economic opportunities (Kye et al., 2021). Host communities can leverage the metaverse for economic activities like virtual commerce, real estate, and services. Thus, future research should focus on how guests can participate in these virtual economies, contributing to the prosperity of host communities and fostering economic collaboration.

Thirdly, the metaverse completely redefines the spread of social interaction (Park & Kim, 2022). The metaverse provides a platform for social interaction and collaboration, enabling individuals from different geographic locations to connect. Indeed, managers and scholars need to expand their knowledge about how host communities can facilitate events, gatherings, and activities within this virtual space, creating opportunities for guests to socialize and build relationships.

Finally, the upsurge of the metaverse raises the problem of analysing how practitioners and academics can bridge physical and virtual worlds (Koo et al., 2023). It is very well known that Augmented reality (AR) and virtual reality (VR) technologies can be used to integrate elements of the metaverse into the physical world. However, it is still being determined how this seamless integration enhances the connection between host communities and guests, creating a fluid transition between the physical and virtual realms.

Following the agenda, future research will address issues facing metaverse growth and its important role in strategic bridging. Moreover, recommendations for coordinating the two sides of the same coin (host community-guest) must be further developed.

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Harnessing Digital Technologies for Knowledge Management in Luxury Hospitality: the cases of Grand Hotel et de Milan and STRAFhotel&bar

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Abstract

Organizations that recognize the value of knowledge as a strategic asset and invest in knowledge management processes (KPMs) are better positioned to succeed in today's dynamic and competitive business environment. Knowledge fuels innovation, enables organizations to adapt to market conditions, and encourages creativity and problem-solving, driving continuous improvement and growth. Digital technologies (DTs) are crucial in supporting knowledge management (KM) initiatives by providing tools and platforms to facilitate knowledge acquisition, creation, storage, sharing, and application. Nevertheless, scant research has focused on the role of DTs in enhancing and facilitating KPMs in hospitality studies, which have prioritized the consumer perspective on digitalization, focusing on travellers' knowledge acquisition and sharing through digital tools facilitating their information search and decision-making.

This ongoing research aims to contribute to the academic debate on digital transformation and KM in the hospitality industry, adopting the organization's perspective. The focus is on deepening the understanding of the role of DTs in facilitating KPMs, giving an answer to this research question: How and to what extent do DTs facilitate organizational KPMs?

To address this research question, a qualitative exploratory study is carried out. Two luxury international hotels in Milan (Italy), owned by the Bertazzoni family, are currently under investigation: Grand Hotel et de Milan and the STRAFhotel&bar. Luxury hotels (LHs) present several peculiarities that support investigating these cases. Luxury represents a significant segment of the general hospitality industry with increasing growth in occupancy, average daily rate, and nominal revenue per available room. Recent crises have significantly impacted the hospitality industry, with luxury hotels facing unprecedented challenges. However, these players have proven their resilience, adaptability, and commitment also in terms of the ability to redefine luxury in the face of adversity. LHs are also recognized as better equipped to adopt innovative practices and invest in digitalization.

A case study method is adopted to achieve an extensive and in-depth exploration towards theory building. The collection of primary and secondary data began in December 2023. An interviewing process will involve top and middle managers at the two hotels and is expected to conclude in May 2024.

Preliminary findings give interesting insights revealing that the two luxury hotels remain human-centred organizations, and the "human touch" and human purposes mediate the role of the adopted digital tools (i.e., a business intelligence platform and a digital twin). The research reveals that human and organizational factors mediate the role of DTs in facilitating KPMs despite their potential disruptive role per se. In the last section, some preliminary reasonings are proposed, integrating key aspects hospitality researchers have neglected and that can address future research avenues on exploiting DTs for KM in luxury hospitality.

Keywords: digital technologies; knowledge management; knowledge management processes; knowledge sharing; luxury hotel.

Framing of the research. Digital transformation has become a hot topic and a priority for researchers and practitioners (Vial et al., 2019). All the sectors, including the hospitality industry, are "experiencing a wave of digital disruption that threatens to restructure some traditional business models and make others obsolete" (OECD, 2018, p. 9). Academics, practitioners, and industries have mythologized technology as an all-encompassing approach and solution

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for business challenges and societal imbalances undervalue the pitfalls of a myopic technology-isolated vision (Pasquinelli and Trunfio, 2023). Although digitalization and digital transformation represent consolidated areas of investigation and research underlined technologies' role in business, several dark sides of digital transformation and areas of improvement remain unexplored in academic investigation (Trunfio et al., 2022; Ozdemir et al., 2023).

Vial (2019, p. 118) maintains that digital transformation "creates disruptions triggering strategic responses from organizations that seek to alter their value creation paths while managing the structural changes and organizational barriers that affect the positive and negative outcomes of this process". The breadth with which this phenomenon manifests itself is expressed in different ways, such as the power of advancing traditional services and creating new business models (Tajeddini et al., 2017; Alford and Duan, 2018).

This deep change requires all organizations to exploit DTs, defined as "combinations of information, communication, computing, and connectivity technologies that are fundamentally transforming business capabilities" (Bharadwaj et al., 2013, p. 471).

At the same time, creating a robust new digital business model requires the combination of DTs and supporting capabilities. In fact, focusing only on the ICT adoption process without considering business model adjustments and organizational re-structuring and re-design can even lead to an overall decrease in productivity. As the notion of transformation states, digital transformation is about change management, defined as "the process of continually renewing an organization's direction, structure, and capabilities to serve the ever-changing needs of external and internal customers" (Moran and Brightman, 2001, pp. 111). Transforming the organization to benefit from smart technologies implies changing the organizational culture, introducing new ways of thinking and working, and building capabilities not only to match the changes in the marketplace (Parviainen et al., 2017).

Therefore, knowledge is a critical asset for organizations when dealing with fast and continuous change. Knowledge impacts innovative behaviours and creativity, the ability to personalize and the staff's reactivity to guests' needs and requests (Lim et al., 2021). KM is made by the different processes that create value from organizations' intangible assets, improving firms' performances and competitiveness (Leoni et al., 2022; Zaim et al., 2019; Liebowitz, 2004).

Looking at the specific hospitality context, recent literature devoted increasing attention to the disruptive power of DTs, focusing on their impact on consumers (e.g. experiences and behaviours) and highlighting the need to expand insights into the organizations' functioning (e.g. strategic responses, leadership, and processes).

Companies must continuously improve their competencies by absorbing and generating new knowledge to address the digital transformation to gain and maintain a competitive advantage (Ghasemzadeh et al., 2022). The digital revolution has dramatically changed the operation and management of hotels, and the applications of DTs are deeply transforming how hotels manage their operations and value chains (Mingotto et al., 2021) to achieve better financial performance, competitiveness, quality of service, resource utilization, flexibility, and innovation (Ivanov et al., 2020; Lenuwat and Boon-itt, 2021). Consequently, they are recognized as the primary sources of efficiency and competitive advantage in the hotel sector (Shin et al., 2019).

Various theoretical and empirical studies have elaborated on the applications of DTs in the hotel sector (Ivanov et al., 2020). Accordingly, there are contributions of a wide range of DTs, such as big data analytics (Antonio et al., 2019), social media (Gupta, 2019), self-service technologies and robots (Liu and Hung, 2020), virtual reality (Leung et al., 2020), front desk technologies (Shin et al., 2019), and mobile apps (Lee, 2018). However, there is a lack of understanding of their critical role in the hotel's KMPs (Geisler and Wickramasinghe, 2015), such as knowledge acquisition, creation, storage, sharing, and application (Alavi and Leidner, 2001; Heisig, 2009; Schiuma et al., 2012).

As stressed by Gürlek and Koseoglu (2023), hospitality researchers have neglected the role of DTs in enhancing the value of the KMPs. A recent bibliometric review of KM in hospitality (Fauzi, 2023) revealed that studies on DTs from a consumer perspective largely prevail, focusing on travellers' knowledge acquisition and sharing through digital tools facilitating their information search and decision-making. Thus, limited scholars' attention to the DTs' impacts on the organization and its KMPs emerged.

Furthermore, previous research has focused predominantly on knowledge sharing - considered at the core of organizations' success, growth, and innovation (Lim et al., 2021; Yang et al., 2022) - ignoring the other KM processes and, therefore, providing a limited understanding of the overall phenomenon.

In the hospitality context, knowledge sharing was proved to directly impact performance, learning, adaptability, radical innovation, and employee satisfaction. While scholars dedicated significant attention to the outcomes and consequences of knowledge sharing, less clarity was reached about the factors facilitating knowledge sharing at the employee and organizational levels (Lim et al., 2021). Not only employees' characteristics (such as skills, existing knowledge, motivation, and interpersonal relationships) but also the organization's effort to boost knowledge-sharing behaviours (such as the building of shared goals, trust, organization climate and culture, and leadership) are predictors of knowledge sharing (Lim et al., 2021). Interestingly, digital technology investments, adoption, and the underpinning of a digital transformation process at the organizational or ecosystem level did not emerge among the investigated factors.

Purpose of the paper. This ongoing research aims to contribute to the academic debate on digital transformation and KM by adopting the hotel organization's perspective, which is an under-investigated area of research. It addresses this research question: How and to what extent do DTs facilitate organizational KMPs? As an exploratory study, it sheds light on how and to what extent hotel organizations are exploiting DTs to enhance the value of the KMPs.

The paper focuses on the context of luxury hotels upon which "sporadic research could be found" (Chu et al., 2016, p. 2). A luxury hotel can be defined as "a hotel that is unique and superior in quality and that provides excellent service, symbolizing the wealth and status of its patrons" (Peng & Chen, 2019, p. 1375).

We decided to focus on this sector because it represents a pivotal element of the tourism business system. The luxury travel market is the fastest-growing segment of the travel industry worldwide (Demir & Saribas, 2014), and luxury hospitality has the third largest market share in the global luxury goods industry (Amatulli et al., 2021).

Methodology. A qualitative approach based on two case studies is adopted in this study. It draws on a qualitative inquiry because it is consistent with the exploratory nature of the case study and well suited to answering “how” questions (Yin, 2018). Hence, it provides an extensive and in-depth exploration (Christou et al., 2019) as well as a better understanding of a scarcely researched topic with no clear theoretical basis (Rodell et al., 2020), allowing for theory building (Eisenhardt and Graebner, 2007).

The study focuses on two international luxury hotels in Milan (Italy) owned by the Bertazzoni family: Grand Hotel et de Milan and its sister property, STRAFhotel&bar. The two selected cases allow an in-depth understanding of two distinct organizations while providing the opportunity to trace connections and synergies in digitalization and KM under the same proprietary umbrella. This group has been selected for the innovative vision that reconciles the luxury hotels’ human touch and guest attention with the exploitation of DTs for strategic, organizational, and managerial changes.

The Grand Hotel et de Milan, a luxury five-stars hotel, is a member of The Leading Hotels of the World. Located in the Montenapoleone district, it is an iconic building that has preserved Milan’s cultural history since 23rd May 1863. Several of the greatest artists sojourned for a long time in this hotel, such as Verdi, Caruso, Callas, Hemingway, D’Annunzio and Nureyev. The STRAFhotel&bar is a Design Hotels member located close to Duomo square. It shows its innovative character, combining art, creativity, design, and fashion.

The collection of primary and secondary data began in December 2023. To collect primary data, the authors are performing semi-structured interviews, which are the right compromise between formality and informality (Qu and Dumay, 2011). An interviewing process will involve top and middle managers at the two hotels, and it is expected to conclude in May 2024. The semi-structured interview protocol is organized into five parts (Castillo-Montoya, 2016):

- i) participants are informed about the study’s aim;
- ii) authors interview respondents starting with profiling questions (e.g., their specific job role, the year of experience in the hotel and the industry);
- iii) the interviews shift towards more study-objective specific questions. After a round of open questions concerning KMPs and the adoption of DTs, leaving the interviewees free to elicit and prioritize salient information from their perspectives, a structured theory-based grid intersecting KMPs and DTs is shared with the interviewees to fully map and discuss tools and processes. This procedure helps avoid introducing researchers’ biases in the interviewer-interviewee relation during the interview while helping the interviewees consider all tools and processes considered by the academic conceptualizations of the object of analysis;
- iv) participants are encouraged to provide examples;
- v) participants are invited to provide additional comments.

A verbatim transcription process is carried out for all the interviews to improve the research’s reliability, validity, and trustworthiness (MacLean et al., 2004). The analysis of transcripts - and the triangulation with other sources - is conducted through a mixed thematic method (Braun and Clarke, 2006).

Results. This exploratory research proposes fresh knowledge in the academic debate on digital transformation and KM by adopting the perspective of hotel organizations that have been under-investigated. Findings suggest some preliminary insights integrating key aspects that have been neglected in hospitality research and can address future research avenues on exploiting digital technologies for KM in hospitality.

The case study sheds light on how and to what extent an innovative Italian hotel group is introducing a business intelligence platform and a digital twin to deploy KMPs that enhance organization coordination, transparency, and efficiency and, then, improve the individual performance of employees and managers, as well as the overall organization.

Firstly, the research suggests the business intelligence platform as a knowledge-integrated architecture that exploits the power of digital technology to enhance the value of knowledge processes and address organizational changes. As preliminary findings suggested, the adoption of a business intelligence platform drives organizational changes, such as developing a shared culture of innovation, redefining strategic priorities, and defining decision-making processes based on an up-to-date dashboard for forecasting and monitoring.

In an early implementation stage, the business intelligence platform in the two hotels has demonstrated its role in internal and external knowledge acquisition, creation, storage, sharing and application for decision-making. As the case revealed, the business intelligence platform exploits information systems to enhance the value of KMPs.

Secondly, findings revealed insights that can advance research on hotel organizations’ shared culture of innovation and leadership in innovation. The key aspect is the human resources involvement (bottom-up co-creation) in building the business intelligence platform. As emerged in the study, the leadership of the innovative projects (the Chief Financial Officer and Chief Operating Officer) addressed the digital platform building through human resources training and involvement in the ICT architecture definition and adoption.

Thirdly, digital innovation has entered the Grand Hotel et de Milan through a recent investment in digital twin technology. Mapping all areas of the hotel (front-office and back-office) in 3D and visualizing every object in real-time (respecting human privacy) allows indoor navigation to inventory all historical furniture and artwork, preserving the hotel’s cultural heritage.

As the case suggested, hotels can enhance operation efficiency with the use of the digital twin, exploit monitoring of several operations through specific dashboards and acting preventive maintenance and saving expenses (e.g. energy consumption of the rooms by enhancing the staffing efficiency, reducing lighting and temperature during specific days and hours, etc.). After the dashboard visualizes specific insights, the physical object's parameters, procedures, or maintenance plans can be modified automatically or with human support.

Digital twins create value for property and managers. Within the digital threat, innovation involves operations processes and capitalizes on KM. The virtual environment becomes a significant source of data, which are stored, shared, extracted, and used for several purposes to support operations in real-time. Human resources and managers can draw massive amounts of in-hole data from virtual environments and correlated dashboards to increase the efficiency and efficacy of the internal process and control operations in real-time.

Last but not least, as the interviews underlined, the LH remains a human-centred organization in Italy, and human touch and human purposes mediate the role of specific digital tools. The research reveals the mediated role of digital technologies in hospitality management, confirming that the luxury hospitality industry remains human-centred despite the disruptive role of innovative technologies in other sectors (e.g., online experiences and immersive museum experiences). Organizational changes such as leadership, culture of innovation and human resources management (e.g. training, motivation, and involvement) drive the disruptive role of digital transformation.

As the interviews suggested, investing in digital transformation allows addressing work-life balance by saving time and enhancing motivation. By enhancing effectiveness, the virtual environment and other DTs facilitate management processes and the achievement of operational performance goals, boosting revenue and maximizing employee efficiency and motivation. This approach enhances the awareness of knowledge value for organizational innovation, competitiveness, and well-being, as well as the diffused attitude to create and use the knowledge for decision-making. Besides, it creates a learning process that continuously improves new competencies to capitalize on organizational knowledge and drive changes.

Research limitations. Its greatest limitation consists in its still immature nature. Being a work-in-progress project, it still manifests all its weaknesses, including an incomplete theoretical framework and limited primary data. Despite that, the case is promising for the ongoing technology investments the group is making and for the empirical feasibility due to the management's interest in collaborating with the research group. The expected challenge in the empirical analysis is to maintain a clear-cut separation between the actual KM processes (and the role of DTs) and the expectations that the interviewees - involved in the digitalization process - have about these. This issue will be addressed by involving staff members in different hotel positions to achieve diverse observation angles on KM.

Managerial implications. This exploratory inquiry contributes to a research agenda with a high potential in terms of managerial implications. Hotels can capitalize on digital transformation to drive organizational changes, which will impact efficiency and operational performances and facilitate processes, boosting revenue and competitive advantages.

Besides, DTs can enhance the value of the KMPs, employee efficiency and motivation. This research results will give direction to future research testing the role of DTs in KMPs and open further scholars' engagement with the tensions and pitfalls that digitalizing KMPs may face in practice.

Originality of the paper. Although KM has been a crucial concern in the hospitality industry for decades and the pandemic made its adoption even more urgent, the academic research on KMPs and the development of a KM perspective on the hospitality research agenda is still lacking (Fauzi, 2023). In contrast, it may contribute to diverse relevant tourism agendas, such as innovation, sustainability, and digitalization (Fauzi, 2023), potentially playing a pivotal role in explaining their intertwining mechanisms. In this vein, this is the first study that simultaneously addresses DT adoption within KMPs in the hospitality context by adopting the perspective of hotel organizations and human resources that have been under-investigated. It offers preliminary results on digital transformation for KM and decision-making (Fauzi, 2023; Gürlek and Koseoglu, 2023) in the hospitality industry, complementing consumer perspective studies, which focus on digital transformation for guest relations, experiences, engagement, and satisfaction. The study offers insights into KM value for organizational innovation, competitiveness, and well-being.

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Cultural Heritage Management in Museums: The Open Culture Dilemma

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Abstract

This study sheds light on the notion and practice of open culture in museums and, particularly, the management of the open culture dilemma that arises when cultural heritage institutions tackle copyright law in their decision-making and practices regarding the access and use of their collections in the digital era. Following a two-step research design including a systematic literature review and focus group discussion and validation, this study provides a matrix of museums' open culture management that, ultimately, can represent a benchmark for practitioners to assess their positions in the open culture environment and make informed decisions and actions. Such insights can also enhance scholars' interest and understanding of the open culture dilemma as an emerging research area in museum management literature.

Key words: Museums; cultural heritage management; open culture dilemma; matrix; scale; benchmark

Framing of the research. Museums are prominent and permanent cultural heritage institutions that constantly deal with cultural heritage management (CHM), defined as “the art, vocation, and practice of managing cultural heritage resources” (Styliadis, 2009, p. 296), to perform their mission of serving society (Barrio-Tellado et al., 2023; Roussos & Stamatoudi, 2022). This mission has undergone a striking evolution, reflecting new scenarios and evolving needs. Museums have become agents of social change (Cameron, 2019; Sandell, 2003; Watson et al., 2021) who provide a venue for all (ICOM, 2011) and advocate human rights (Blumer, 2015; Carter, 2019), including the universal right to access culture and participate in cultural life. Increasingly, they strive to reach a broader audience (Palumbo, 2023) by offering an active physical and digital learning environment (Hooper-Greenhill, 2013; Palumbo, 2022) and exploring market-service opportunities (Camarero & Garrido, 2012; Ekström, 2019), while also seeking sustainability (social, environmental, and economic) goals and participatory governance (UNESCO, 2021; Ubertaini, 2022).

Performing such a pivotal role, museums steadily use advanced digital technologies (Falomo Bernarduzzi et al., 2021; Markopoulos et al., 2021) reinforcing their potential endeavours in Open Culture (OC), defined as “the freedom to access, use, and modify culture, subject, at most, to measure that preserve provenance and openness” (opendefinition.org) and endorsed by widespread initiatives such as the OpenGlam movement (openglam.org). However, several factors hinder museums from embracing these principles, shaping an open cultural dilemma on whether and to what extent they should open up. Notably, they often face a lack of technical skills (Not & Petrelli, 2019), managerial capabilities (Komarac et al., 2015) and legal awareness (Markellou, 2023), particularly on copyright issues (Purday, 2010; Terras, 2015), which could otherwise support museums in their drive towards openness.

While recognising that the concept of open culture management is still evolving, it is noteworthy that the literature on this topic still needs to be fully explored. Additionally, it often reflects a predominantly Western perspective (du Cros, 2021; Onyemechal & Ugwuanyi, 2021). This gap underscores the need for a comprehensive approach to open cultural management, addressing its social (Fatorić & Daly, 2023), cultural (Li et al., 2020), and economic (Bonioti, 2021) implications.

Purpose of the paper. To address this literary void, this study takes an interdisciplinary perspective intersecting management and copyright to shed light on the notion and practice of open culture in museum management and contribute to managing the open culture dilemma that arises when museums tackle copyright law in their decision-making and practices regarding the access and use of their collections in the digital era.

Methodology. Our research design is based on two interconnected steps combining a systematic literature review (SLR) and an exploratory focus group discussion and validation of the theoretical constructs around open culture management in relation to copyright.

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Systematic literature review. The SLR on managing the open culture dilemma was conducted on the Web of Science (WoS) and Scopus databases. WoS domains included management, law, hospitality, art and sport, leisure and tourism, anthropology, social psychology, and sustainability science. In Scopus, we selected business, management, social sciences, and accounting domains. We only included peer-reviewed articles written in English and published before the end of April 2023. Going through the standard steps in the PRISMA framework (Moher et al., 2009), the final sample included 124 studies. We performed descriptive statistics (Siemieniako et al., 2021), keyword co-occurrence analysis (Mariani et al., 2023), and content analysis (Cruz-Cárdenas et al., 2021) on the sample. Descriptive statistics were calculated on an Excel spreadsheet of data to provide an overview of current knowledge in the field and its evolution, including the domains of the articles, main concepts, trends and emerging themes, the author's country of origin, and country of analysis. Using VOSviewer 1.6.19 software and including terms with at least three co-occurrences, we depicted clusters of co-occurrence keywords. In manual content analysis, key issues related to the open culture dilemma in contemporary cultural heritage institutions were identified and assessed, whether they were related to culture management or copyright. Subsequently, issues were organised into a matrix based on their shared features.

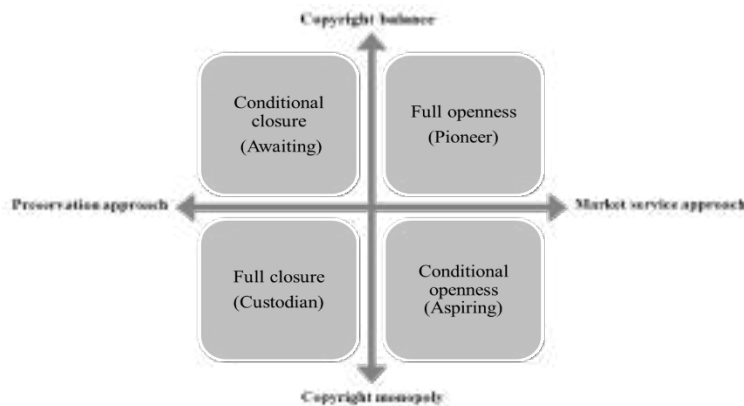
Focus group. The focus group is a qualitative research method widely used to promptly gather insights and opinions from a convenience or purposive sampling of informants on a specific topic or issue (Kitzinger, 2005; Maitiniyazi & Canavari, 2020). Rigorous focus group design and protocol (Stewart et al., 2007) ensure the validity and reliability of data collection and mitigate focus group reliance on non-probability sampling and the potential for moderators to influence participant responses (Prior, 2018). We adopted a semi-structured approach (Aitken et al., 2021) to focus group design combining structured questions with open unstructured discussions on the current conceptualisation of CHM in relation to copyright emerging from the previously performed SLR (Moher et al., 2009). We developed questions for facilitating focus group discussion, especially around what open culture means to the participants and how they propose to handle it. Questions include: To what extent are museum managers aware of the open culture dilemma? How can museums identify and solve the problems related to open culture? And how can a derived theoretical matrix be implemented to handle the open culture dilemma? The purposive sampling of participants (Stewart et al., 2007) included 8 experts on the topic investigated (Barbour, 2018) selected according to several criteria: (1) having at least 10 years of professional experience in open culture management; (2) being advocates of open culture, especially the museum sector; and (3) being broadly involved in the discussion of open culture dilemma. The focus group lasted 90 minutes and was audio recorded with participants' permission. By using Braun and Clarke (2006)' thematic qualitative methodology to interpret focus group content, the data collected were transcribed and independently analysed, and coded by the authors to extract research themes and items that were organised into clusters and patterns between items. Unlike other methods, this thematic analysis allows a deeper and applied understanding of research problems without requiring inter-coder reliability, coding frames, or theoretical frameworks (Braun & Clarke, 2021).

Results. Systematic literature review. The co-occurrence and content analyses of the body of literature revealed convergent-divergent managerial and legal approaches to OC management in relation to copyright, denoting areas of convergence, divergence and ambivalence to OC. Convergence occurs when both copyright and managerial approaches align to openness or closure. Instead, divergence occurs when they are unaligned, one inclined toward openness and the other toward closure (and vice versa) (Figure 1).

The convergence towards a “full openness approach” is defined by the combination of museums' market-service orientation in the physical and digital environments (Palumbo, 2022; Trunfio et al., 2021) and copyright balance (Senftleben, 2004; Zemer, 2006). In this case, the many can freely access, use, and modify culture with the least possible restrictions. Instead, the “full closure approach” is defined by cultural institutions' custodial preservation models (Gilmore & Rentschler, 2002) and copyright monopoly (Troy, 2017). In this case, museums and copyright law maintain control over culture and knowledge.

The divergence between legal and managerial perspectives identifies “conditional openness” and “conditional closure” approaches. Despite museums' market service orientation, copyright monopoly entails challenges that ultimately shape a “conditional openness” approach, leading, for instance, to opening only a limited part of their collections (Booth et al., 2021). On the contrary, the “conditional closure” approach occurs when museums opt for custodial preservation, despite copyright balance that would allow them to open. In this case, museums operate in a better copyright environment. However, they are still reluctant to open due to managerial reasons, e.g., reluctance to change and lack of skills (Bertacchini et al., 2018).

Figure 1: Matrix of Open Culture Management approaches in relation to copyright



Source: Authors' elaboration

Focus group. The focus group content analysis allowed us to validate and develop the approaches to OC in relation to copyright, providing themes and items describing museums' open culture management practices (Table 1) associated with these approaches (Figure 1) and identifying museums' OC management categories (pioneers, custodians, aspiring, and awaiting).

The museums adhering to a full openness approach, are "Pioneers" in adopting a market service orientation and aligning with copyright balance. They have an improved understanding of the open culture dilemma and adapt as much as possible to take advantage of OC opportunities. Thanks to their capabilities and skills, pioneers effectively manage and share digital content, encompassing aspects like building stakeholder relationships, ensuring transparency, developing digital skills, navigating copyright opportunities, and engaging with the open movement.

"Custodians" are museums adhering to a full closure approach, fastened to a preservation approach while also constrained by copyright monopoly. These museums focus on their conventional mission of preserving cultural heritage and identify themselves as gatekeepers. Due to the lack of managerial and technological skills, they have concerns over losing control over culture and face challenges in navigating the complex copyright laws including inadequate resources, conflicting rules, and uncertainty about the benefit of OC.

"Aspiring" are museums following a conditional openness approach featuring a market service orientation and copyright monopoly. In the effort to balance their traditional and contemporary roles, they seek transformation starting with small steps involving limited investments for marketing collections and engaging in revenue-producing activities. At the same time, they endorse the use of OC licences and advocate for legislative changes.

"Awaiting" are museums following a conditional closure approach that insists on a preservation-led managerial orientation despite a copyright balance occurrence. Due to the lack of managerial capacities and technological skills, they choose conservation and disregard the legal openings provided by copyright flexibilities, not taking advantage of OC opportunities.

Table 1: OC management categories

Categories	Themes	Codes
Pioneers	(a) Have good managerial capabilities	Strong relationship with stakeholders, collaboration with communities, capture benefits for sharing, transparency, risk assessment, low risk, breaking down the process into little steps, good knowledge about the collection status.
	(b) Have good technological skills	Digital skills, rights management information system, data management plan.
	(c) Have good legal awareness	Copyright opportunities, non-exclusive licences, rules for access, knowledge about what can be opened or not, ability to identify and release content, public domain, free licences, creative commons licensing, copyright exceptions, fair use.
	(d) Take full advantage of OC opportunities	Connect with the open movement, adapting open policy.
Custodians	(a) Focus on preservation	Traditional role, preserving cultural heritage, lack of time and capacity.
	(b) Consider themselves as gatekeepers	Gatekeepers, old-fashioned institutions as a safeguard, fear of losing control over collections, extra barriers.
	(c) Fear of copyright	Copyright laws, traditional licensing sanctions.
	(d) Are unsure/unaware of OC opportunities	Contradicting rules, lack of clear international instruments, non-conductive rules, lack of resources, unsure about benefits, open access disregarded.
Aspiring	(a) Seek transformation	Trying to balance traditional and modern roles, wish to market collections, seek revenue-producing activity.
	(b) Start with small steps	Start with a few items, small procedures, low investments.
	(c) Acknowledge legal inadequacy	Advocates for changes in legislation.
	(d) Are interested in OC opportunities	Wish to use open licences.
Awaiting	(a) Choose conservation	Ignore digital transformation, fears.
	(b) Lack managerial and technological skills	Lack of skills, lack of digitally competent employees, lack of defined goals.
	(c) Disregard legal openings	Lack of legal knowledge, definition of public domain, need for lawyers.
	(d) Refrain from OC opportunities	Grey areas, illegal areas, conditional public funding.

Research limitations. The narrow scope of the preliminary SLR (WoS and Scopus English literature) can be one of the reflected limitations of the study. Similarly, the focus group involving 8 participants limits the findings to a small population. Overall, the focus on museums limits the findings to a specific cultural heritage institution. Similarly, the study focuses on copyright, and it does not extend to other legal dimensions that can potentially affect open culture management. Additionally, only a qualitative evaluation supports museum positioning in the matrix. Given these limitations, authors aim at (a) running further focus groups to refine the matrix of museums' OC management models; (b) administering a survey with museums' managers to transform the matrix into a managerial dashboard guiding the progress to full openness; and (c) developing indicators to position museums in the matrix and monitor the effects of their decision-making/practices.

Managerial implications. The matrix of museums' open culture management has theoretical and managerial value. It combines managerial and legal knowledge in OC management in relation to copyright enhancing scholars' interest and understanding of the open culture dilemma as an emerging research area in cultural heritage management that has growing relevance in the digital era. Despite being exploratory, the matrix serves as a benchmark for practitioners to evaluate their stance within the open culture environment, enabling informed decision-making. Both management approaches and copyright laws play a pivotal role in OC management, indicating that museums' OC strategies for museums must consider several aspects to be feasible and require different capabilities and skills. Museums armed with improved legal comprehension and management capabilities can pioneer towards complete openness. Furthermore, our proposed matrix facilitates a clearer understanding of museum managers' current position within the open culture management matrix, thereby aiding in self-identification and performance enhancement within this environment.

Originality of the paper. This paper sheds light on the open culture dilemma in museums' cultural heritage management, an emerging and relevant field of research that is still evolving but poorly investigated. Taking an interdisciplinary perspective intersecting management and copyright law, we endeavoured to bridge a gap in the literature on highly topical research that draws together complex social, institutional, and technological elements. The novel matrix of OC management approaches in relation to copyright represents a comprehensive theoretical model advancing knowledge about museums' cultural heritage management in the digital era, laying the groundwork for future research in museum settings. From a practical perspective, our proposed matrix could help managers evaluate their position regarding openness and assess the effectiveness of strategies. Bridging theory and practice in OC management in museums can ultimately guide museums on their way to OC.

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Destination ambassador, authenticity and informal communication. Exploratory research on mountain professionals

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Abstract

The paper discusses the topic of the destination ambassador in relation to local stakeholders who are not participating in a destination ambassador program (DAP). The information given to tourists by such figures, as part of a process of informal communication, is based on the authentic personal experience of the local stakeholder: information and any advice given are communicated spontaneously by the local stakeholder who has no contractual relations or hierarchical ties with any particular tourism organisation. The paper presents the initial results of ongoing research aimed at investigating the role of mountain professionals as destination ambassadors, shedding light on a new paradigm of host-guest communication. In Alpine destinations ski instructors and mountain guides are recognised as trustworthy stakeholders with regard to the exercise of their profession. Our research examines whether or not these local stakeholders possess the characteristics associated with a destination ambassador and aims to answer three research questions: RQ1 - Do mountain professionals only teach their clients about the theory and practice of their sport/activity or do they also share their knowledge about the destination? RQ2 - Do mountain professionals feel to be part of the destination offer? RQ3 - Do mountain professionals consider important to acquire skills connected to knowledge of the places in which they operate? The area chosen for our field research is Trentino (Italy). 945 local ski instructors and mountain guides filled out and submitted valid questionnaires. Descriptive statistical analyses and ANOVA to test the equality of means by professions have been carried out. This is, to the best of our knowledge, one of the first studies to investigate the topic of the destination ambassador outside the framework of a DAP.

Key words: destination ambassador; authenticity; communication, alpine guide, ski instructor

Framing of the research. *There are numerous studies on authenticity as an element of a destination's tourist offer in the tourism management literature (Wang, 1999; Rickly, 2022) due to the notable implications that it has as a pull factor for tourist demand and hence for territorial competitiveness (Ferrari, 2005; Rickly and McCabe, 2017; Atzeni and Del Chiappa, 2022). Authenticity can be valorised through local stakeholder and community involvement in the design and promotion of the offer in order to a) foster relationships between locals and tourists which contribute to enabling the former to experience an immersive holiday (Deng, 2010; Forlani and Pencarelli, 2018), b) give tourists an opportunity to learn first-hand about the territory in which they are traveling (Wang et al., 2020), c) transmit an authentic image of the destination (Braun et al., 2013; Kavaratzis, 2004).*

If a territory can involve stakeholders and the community in its tourism offer, it increases its capacity to convey the values of the destination and thereby help to build both an authentic image of the territory, on the one hand, (Zhou et al., 2015), and, on the other, relationships with tourists which are likely to strengthen their sense of connection with the destination (Ap, 1992; Palmer et al., 2013). Stakeholders and the community become strategic players in the valorising and communication of the territory's authenticity. And, since they are directly in contact with tourists, they are perfectly positioned to act as destination ambassadors. "An ambassador is seen by coordinators as constituting a credible testimony of the distinctive character of the place and its attractiveness, and can through the word-of-mouth effect influence others through their networks and relationships." (Andersson and Ekman, 2009, p. 43). "For an event or destination, ambassadorship can be an example of a collaborative approach to exchange knowledge between stakeholders with a shared purpose (Bornhorst et al., 2010) and often includes training, campaigns, and programs." (Chancellor et al., 2021, p. 3). "Destination ambassadors directly contribute to a destination's identity by providing a consistent message of key identity elements. However, while brand ambassadors are typically endorsed celebrities, destination ambassadors are unendorsed local residents." (ibidem).

The topic of the destination ambassador remains relatively unexplored within tourism management studies. The study by Chancellor et al. (2021), among the most recent on the subject, gives a definition of this particular figure and provides

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some examples of destination ambassador programs (DAPs). Destination ambassadors are defined as “local stakeholders trained to provide consistent destination-specific information to tourists through friendly and positive interactions, to 1) enhance the visitor experience, and encourage 2) a positive brand image, 3) word-of-mouth advertising, whether face-to-face or via social media, and 4) increased visitation.” (Chancellor et al. 2021, p. 4). The feedback from some of the “destination ambassador programs” (DAPs) being offered to local stakeholders is interesting. Examples include the Aarhus resident ambassador program in Denmark (Trapp, 2020) and the DAPs in the USA studied by Chancellor et al. (2021). These programs are often designed to involve local residents as volunteers in the organisation of big events (Hopkins et al., 2012; Kim et al., 2010; Holmes et al., 2018).

The contributions cited above demonstrate the importance of the destination ambassador’s interaction and communication with tourists and emphasise the communication’s informality (whether online or off), but they deal almost exclusively with the figure of the ambassador within a DAP supported by a particular territorial entity (eg, local convention and visitors’ bureaux; hospitality associations; tourism offices) (see Chancellor et al., 2021).

Little research has been done to date on local stakeholders functioning as destination ambassadors outside a DAP but who - because of their professional activity - have the opportunity to interact with tourists and thus pass on their personal knowledge of the territory. A search in Scopus using the key word “destination ambassador” in March 2024 brought up only one study, by Ly and Tan (2023), which investigates the role of temple keepers in Macao as key players in religious tourism development. The study suggests that “temple keepers have four roles, which are temple attendant, temple representative, cultural knowledge broker, and destination ambassador” (Ly and Tan, 2023, p. 67).

From a managerial perspective, a focus on local key players who are not involved in a DAP is of particular interest. In such cases, in fact, the information given to the tourist is based on the local stakeholder’s authentic personal experience: information and any advice given are communicated spontaneously by the local stakeholder who does not claim to have any contractual relations or hierarchical ties with any particular tourism entity (such as a DMO). In this situation, the local stakeholder thus plays the role of a destination ambassador and also incorporates aspects of the influencer since they are in a position to guide tourists’ choices and behaviours while maintaining a neutral/independent stance in relation to third parties. On this, Chen and Šegota’s (2015) paper focusing on the role of residents in a tourist destination is interesting: the authors have written a conceptual paper which analyses the relationship between residents and destination brand building behaviours in order to investigate the links between place attachment and residents’ behavioural outcomes. The study highlights the importance of word of mouth: “WOM is more credible because the generator is not seen as having direct profit in selling the recommended product or service (Herr, Kardes and Kim 1991; Murray 1991, Silverman 2001).” (Chen and Šegota, 2015, pp. 148-149).

The role of residents as potential ambassadors is also considered in a study by Griffin and Guttentag (2020). The research, however, looks specifically at the role of locals in relation to the travel decisions of visiting friends and relatives. And so, in this case, too, the role of the local as a stakeholder with a particular profession which contributes to the destination’s tourist offer is not focused upon.

With regard to mountain tourist destinations the scientific literature reveals the significance of local stakeholders such as ski instructors and mountain guides due to their role as companions and mentors to tourists engaged in a range of outdoor sporting activities (Beedie, 2003; Clivaz and Langenbach, 2020). Their roles bring them into direct - indeed often close - contact with tourists, whether introducing them to a new sport, or enabling them to increase their prowess on the slopes, or guiding and mentoring hikers and climbers as they explore unknown places and terrains. To date, however, no study has been done on whether these mountain professionals can be considered destination ambassadors with the capacity to valorise the authenticity of the territory, transmit their knowledge of it and influence tourists’ decision-making. The ongoing study presented in this paper is situated within this research frame and describes the initial results of an investigation involving more than 900 local stakeholders.

Purpose of the paper. To analyse the activities and perceptions of so-called mountain professionals (ski instructors, mountain guides, local guides/mountain leader) in order to investigate whether or not these local stakeholders possess the characteristics associated with a destination ambassador although they are not part of a specific DAP.

The research aims to answer three questions:

RQ1: Do mountain professionals only teach their clients about the theory and practice of their sport/activity or do they also share their knowledge about the destination?

RQ2 - Do mountain professionals feel to be part of the destination offer?

RQ3 - Do mountain professionals consider important to acquire skills connected to knowledge of the places in which they operate?

The evidence that emerged from the research allowed us to analyse whether or not the trust that tourists invest in mountain professionals when they are operating in their own particular field of expertise leads tourists to also trust the information that such local stakeholders give about the territory and any advice that they may provide relating to someone’s stay in the area.

Methodology. The area chosen for our case study field research is Trentino (Italy), where ski and mountaineering schools were first opened more than a century ago. In 1872, in Madonna di Campiglio, the Società Alpina del Trentino, now the Società degli Alpinisti Tridentini, popularly known as the SAT (www.sat.tn.it) was founded. The first ski school opened in 1916 on Monte Bondone, just outside the city of Trento (www.skimontebondone.it). (For an account of the history of the development of mountaineering in the Dolomites, see the website of the Guide Alpine Italiane - Collegio nazionale (www.guidealpine.it/), and Torchio and Decarli, 2014).

Our research objects are ski instructors (including downhill and cross-country skiing, and snowboarding) and/or mountain guides (mountain guides, local guides, trainee mountain guides). Within the province of Trento, at the time of our research (2022), 2,675 people were enrolled on the professional register of ski instructors and 453 on the mountain guide register.

Between May 9th and July 26th 2022, questionnaires were sent out to the ski instructors and mountain guides listed on the professional register: 31.3% of the ski instructors and 23.8% of the mountain guides operating in the province responded to the questionnaire. Of the 978 professionals who provided feedback, 33 questionnaires were incomplete or did not allow us to clearly identify the main focus of their profession. We retained 945 valid questionnaires: 837 from ski instructors and 108 from mountain guides (henceforth, we will simply use the terms “ski instructor” and “mountain guide”).

All (945) of the respondents live in Trentino, most are male (74.4%), and they span all age groups, the biggest cohort is that of 50-59 year olds (24.1%).

The questionnaire, administered online, included yes/no questions and questions that used a qualitative rating scale. The topics investigated were:

- a) Ski instructors'/mountain guides' clients' range of interests: analysis of the instructors'/guides' perceptions of the interest their clients show: whether exclusively in their chosen sport/activity, or also in the area's landscape and natural features (flora and fauna, environment/ecology, geology, etc), and/or its history and culture.
- b) An assessment of relations between the territory's stakeholders: analysis of a) the opinions expressed by the instructors/guides with regard to collaboration between actors and b) how they see their personal engagement in the destination's overall tourist offer.
- c) Ski instructors'/mountain guides' participation in joint activities and events related to their profession: analysis of the regularity with which the instructors and guides take part in work-related events (meetings, assemblies, committees, project presentations...).
- d) Skills required by ski instructors/mountain guides: analysis of the competencies (over and above their specialist training) that ski instructors/mountain guides need in order to improve their professional capacity, i.e., marketing and social media management, relationship-building capacity with clients, time management and activity planning, knowledge of foreign languages, knowledge of the culture, environment and landscape of the territory.

These topics were subjected to descriptive statistical analyses (frequencies and cross tabulations) and to ANOVA to test the equality of means by profession. The main purpose of this paper is to ascertain if the ski instructors and mountain guides possess the attributes of a destination ambassador. The principal results of the study follow and we describe the multiple lines of the (in progress) analysis which are being adopted in order to examine in detail the role of ski instructors/mountain guides as destination ambassadors.

Results.

- a) Clients' interest in sport/activity, clients' interest in the territory itself - Analysis of the aggregate data shows that in general clients are very interested in aspects other than the simple technicalities of their chosen sport/activity. The majority of respondents report that their clients are interested in the landscape (91.6%), in the area's natural features (flora and fauna, environment/ecology, geology, etc) (76.6%), in curious facts about the places they visit (76.5%) and in the history and culture of the area (62.8%). The interest that clients show in information other than that related simply to their chosen sport/activity resonates with the ski instructors'/mountain guides' perceptions of their own roles. Almost all respondents believe that their clients see them as experts, fully qualified to give advice about the sport/activity in which they specialise, as well as on the equipment required (97.0%); someone trustworthy, who can keep you safe and with whom you are able to do something that you would not dare to do alone (97.4%).
In addition to these observations, and linked to the professionalism and expertise with which the respondents do their work, ski instructors and mountain guides perceive that their clients see them as locals who can be trusted to give honest advice about the area's products, services and tourist shops/businesses (86.5%), and as a reliable voice on the territory's culture (history and traditions), its natural environment and how it has changed over the years (76.9%). The relationships that form between clients and instructors/guides are seen positively by the latter: they say that they find their work satisfying because they see that their clients value what they do (99.7%) and are enthusiastic about the activities proposed to them (98.3%).
- b) The opinions expressed by the instructors/guides with regard to their relationship with other local stakeholders can be divided between those who assess it positively (48.5%: 22.4% “very positive”; 26.1% “positive”) and those who feel it could be improved (43.2%). According to 8.5% of respondents, it is irrelevant.
- c) About 40% of respondents occasionally attend meetings or events of possible relevance to their profession (e.g. meetings, assemblies, project presentations) and about 33% participate regularly. However, 19.5% report not being interested and 8% have never been involved in any such activity.
- d) Almost all respondents say that in order to develop professionally they need to gain further competences in marketing, promotion and social media management (74.3%), and to improve their foreign language(s) (77.0%). About half of the respondents (54.1%) consider it would be beneficial to increase their relationship-building capacity and their time management/activity planning skills. 52.9% said that they thought it would be helpful to learn more about the territory's culture, natural environment and landscape.

A preliminary analysis of the results obtained deploying ANOVA revealed that mountain guides clients are more inclined to show interest in landscape, cultural and environmental aspects than ski instructors. However, there are no statistically significant differences between mountain guides and ski instructors regarding their need for training in landscape, cultural, and environmental aspects related to their territory. Ski instructors declare that they are perceived as experts (i.e. providing suggestions about technical issues of their activity) more frequently than mountain guides do. In contrast, the latter declare to be perceived as witnesses of the area and its heritage more frequently than ski instructors, all these differences being statistically significant.

Research limitations. The research is based on an analysis of the perceptions of ski instructors and mountain guides and does not, therefore, allow for a direct comparison with the opinions of the tourists themselves.

Managerial implications. The destination ambassador is a strategic player in destination communication: if they are perceived by the tourist as trustworthy, the information that they share will be accepted as very probably credible.

The acquisition of management and marketing skills by key players in the destination's tourist offer can contribute to valorising the territory's authentic elements. Direct communication between locals and guests (ski instructors/mountain guides and tourists) unmediated by the hierarchical ties between destination management organisations and mountain guides/ski instructors can be expected to be experienced by the client as an authentic, trustworthy exchange.

The research results could become a starting point for studies in other destinations where ski instructors and mountain guides are key players in the destination's tourist offer. Such analysis would allow for the comparison of results and the identification of possible best practices for the enhancement of key players who can then take on the role of destination ambassador.

Originality of the paper. This is, to the best of our knowledge, one of the first studies to investigate the topic of the destination ambassador outside the framework of a DAP; it examines the role played by key players in the destination's tourist offer, assessing their capacity to act as destination ambassadors.

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Acknowledgements. *The data on which the paper is based derive from research conducted by the Trentino School of Management - Accademia della Montagna in collaboration with the Collegio delle Guide Alpine, the Associazione Accompagnatori di Territorio, the Collegio dei Maestri di Sci and the Associazione Maestri di Sci of Trentino. The authors would like to thank Dott. Gianluca Cepollaro and Dott.ssa Ilaria Perusin for their contribution to the research.*

Track 15

**Examining the social and environmental relevance
of sustainable digital business models:
Impact on business practices and consumers –
Special Track**

Good Governance for Smart Villages: A Bibliometric Review

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Key words: smart village ; rural area ; smart development ; good governance; bibliometric analysis

Framing of the research. Smart villages refer to rural areas and communities that strive to achieve various development goals by harnessing accessible resources using new information technologies, collaborative networks, and amenities. This approach fosters new opportunities for residents, organizations, and nearby residents (Juan and Mceldowney, 2021; European Commission, 2018).

While a single definition of smart villages remains elusive, researchers advocate considering specific attributes such as demography, location, human geography, and social and physical resources (Heap and Hirmer, 2020). The ESPON collaborative project highlights the importance of good governance, public participation, and efforts to improve human capital, capacity, and community. Contrary to common perception, digitalization is not a prerequisite for Smart Village status. Still, it is seen as a tool to achieve broader goals, emphasizing that using digital technologies alone does not define Smart Villages (EPRS, 2021).

Rural areas in the EU, which cover 44.6% of the EU territory and are home to 93.1 million people (20.8% of the total EU population), are multifunctional spaces facing different challenges and opportunities. Many international, regional, and national initiatives are dedicated to promoting smart villages. The Smart Villages portal on the ENRD website provides access to case studies and publications on topics such as digital and social innovation in rural services, revitalizing rural services, the European Green Deal, rural digitalization transformation, rural energy communities and rural mobility (EPRS, 2021).

Initiatives such as the IEEE Smart Village initiative aim to improve education in off-grid communities and promote sustainability across the smart village energy value chain (Adesipo et al., 2020). In addition, several smart village initiatives have been launched globally under the Consultative Group on International Agricultural Research (CGIAR), many of which have been supported by international research organizations and have had a tangible impact in areas most vulnerable to climate change (Fujita et al., 2001).

Over time, the EU's smart village efforts have progressed since the 2016 Cork Declaration (Aziiza and Susanto, 2020), with the smart village concept now playing a central role in rural development planning processes (Bokun and Nazarko, 2023)

Purpose of the paper. Previous bibliometric analyses have shed light on various aspects of smart villages. In particular, Bokun and Nazarko (2023) recently outlined the current knowledge on smart villages and introduced the concept of smart governance based on its operational functions. However, their study stopped short of highlighting the essential role of good governance within the smart village discourse. Wang et al. (2022) provided a bibliometric assessment that highlighted a prevailing focus on technology-centric initiatives in smart village research, often at the

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expense of societal, service-oriented and cultural considerations. Our study aims to examine the role of good governance in the context of smart villages. Based on the UNDP (1997) definition, good governance is understood as “the exercise of political, economic and administrative authority in the management of a country’s affairs at all levels”, enriched by eight main attributes: Participation, the rule of law, transparency, responsiveness, consensus orientation, accountability, equity and inclusiveness (Madhu, 2005).

We argue for a future research trajectory that prioritizes collaboration through these governance principles (EPRS, 2021), thereby enhancing the integration of good governance within smart village studies. To this end, we examine a significant bibliometric corpus to address the following research questions:

- 1) What overarching insights and conclusions emerge from existing smart village research?
- 2) How is the concept of good governance relevant to smart village studies?
- 3) How can this study refine the current intellectual framework of smart village knowledge?

Methodology. For our data collection, we chose Scopus as our primary database, as it is recognized worldwide for its extensive, accurate, and high-quality research content (Elsevier, 2024). This choice was driven by the database’s alignment with our research objectives. To identify relevant literature, we employed a targeted search strategy using specific keywords such as “smart village”, “rural area”, “smart development”, “smart countryside”, “climate-smart village”, “smart global village”, and “smart tourist village” in the title, abstract and keyword fields. Our search strategy included the Boolean operators ‘OR’ and ‘AND’ to broaden the search scope. It used fuzzy search techniques, denoted by asterisks (*), to capture different word forms within the selected keywords.

The search was restricted to articles, reviews, and conference papers published in English to ensure a comprehensive literature review. The final literature search was completed on 20 February 2024.

Our analytical approach consisted of two main components: 1) performance analysis and 2) science mapping. The performance analysis component aimed to evaluate the contributions within the selected literature, focusing on bibliometric assessments characterized by a descriptive analysis approach (Ramos et al., 2004; Donthu et al., 2021). Following the methodology outlined by Combo et al. (2011), the science mapping component sought to elucidate the relationships and intellectual interactions between studies, highlighting the structural connections between the research materials collected.

We manually screened documents in the initial data collection phase, evaluating titles and abstracts to filter out non-relevant papers. This screening process resulted in a dataset of 1456 papers. After removing duplicates and non-related papers with the main topic, the dataset was refined to 329 articles. Our bibliometric analysis was carried out using tools such as Excel, R packages, and VOSviewer, which allowed a comprehensive exploration and visualization of the research landscape in the context of smart villages.

Results.

Performance analysis.

In our study, we specifically use performance analysis to explore the scientific landscape of smart village research. This approach includes techniques such as citation analysis and counting publications by various criteria such as country, institution, research teams, or individual authors. The rationale for using citations and publication counts is to assess the impact and influence of research, with the common understanding that more frequently cited papers are more significant (Thelwall, 2008). Our results show that a global community of 1140 authors has contributed 329 scholarly papers to the field of smart villages. This comprehensive dataset, extracted from the Scopus database without any date or geographical restrictions, includes 55 conference papers, 6 book chapters, and 151 journal articles from 214 sources. There were 47 cases of single authorship and 1039 cases of co-authorship, clearly indicating a predominant trend towards collaborative research in this field. With 2379 citations attributed to these publications, the average citation rate is 7.23 per journal article and 2.0 per author. This citation level reflects the academic community’s commitment to and recognition of Smart Village research and demonstrates the field’s ongoing efforts to advance understanding and foster innovation.

Tab1: Descriptive statistics for Publication and citation of smart villages research.

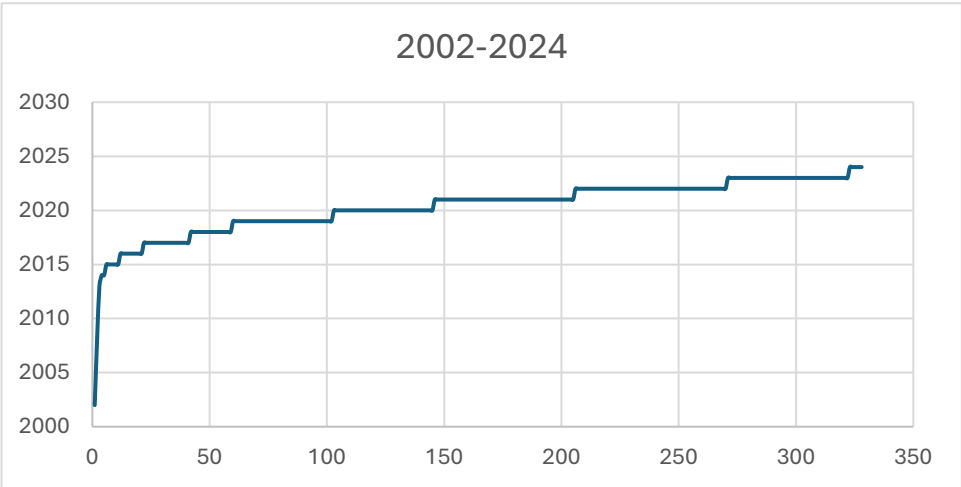
Metric	Frequency
Publication metrics	
Total publications (TP)	329
Numbers of contributing authors (NCA)	1140
Sole authored publications (SA)	47
Co-authored publications (CA)	1093
Citation metrics	
Total citations (TC)	2379
Average citation (AC) for journals	7.23
Average citation (AC) for authors	2.0

Source: own elaboration (2024)

Figure 1 shows the number of active years of publication (NAY) in the field of smart villages, tracing the publication trend from 2002 to the beginning of 2024. The line graph vividly illustrates a significant increase in publications on smart villages, particularly noticeable from 2015 to early 2024. This period marks a crescendo of scholarly interest and output,

reflecting a rising wave that gains momentum as it approaches the shore. This trend underlines the growing academic and practical interest in the concept of smart villages, reflecting the dynamic evolution of the field and its increasing relevance in addressing contemporary challenges in rural development and sustainability.

Figure 1: Number of active years publications (NAY)



Source: own elaboration (2024)

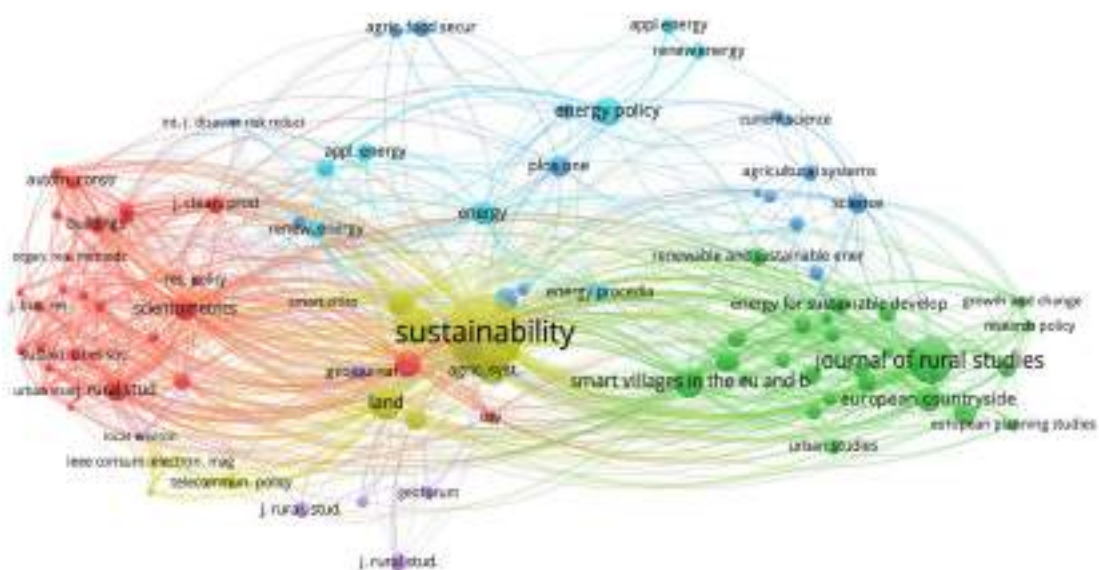
Science mapping.

Science mapping is a methodology that aims to elucidate the structures and dynamics inherent in scientific fields (Zupic & Čater, 2015). In this section, we present findings from four distinct but interrelated analytical approaches: 1) citation analysis, 2) co-citation analysis, 3) co-authorship analysis, and 4) co-word analysis, including keyword analysis and clustering methods.

Citation Analysis

To answer our second research question, we undertook a citation analysis. Figure 2, generated using VOSviewer, provides a visual representation of the citation networks between journals, highlighting the patterns of intellectual influence and connectivity. The quantitative aspects and further details related to this visualization are presented in Table 2.

Figure 2: Citation Analysis. Each node in a figure represents a journal, and the node's size indicates the journal's citation. The bigger the node, the larger the citation. The link between the nodes represents the co-occurrence between journals.



Source: own elaboration (2024)

Table 2: Top 6 influential journals in smart village research

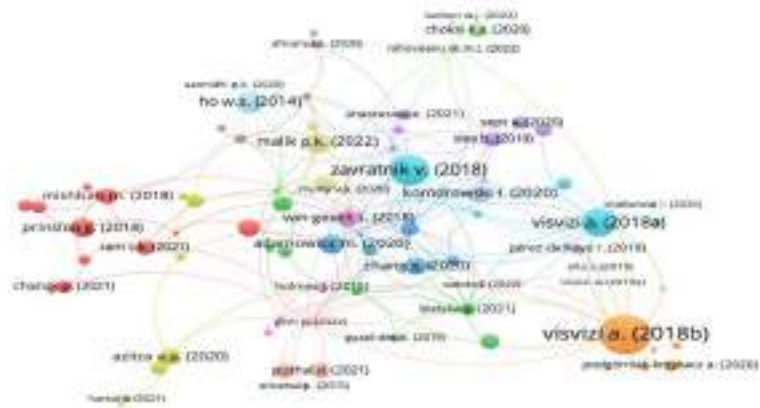
Journal	Publications	Citations	Total link strength	Reference
Sustainability (Switzerland)	19	557	27	Adamowicz et al. (2020); Putri, et al.(2023)
Smart Villages in the EU and Beyond	13	129	11	Szanyi, (2019)
European Countryside	6	112	19	Sept, A. (2020)
IEEE Communications Magazine	4	90	1	Han, et al.(2023)
Land	6	68	10	Ariyaningsih & Shaw, (2023)
Energies	5	45	1	Satoła & Milewska, (2022)

Table 2 shows the top 6 prominent publications that contribute significantly to the intellectual structure of the knowledge base on Smart Villages. The journal Sustainability (Switzerland) is the most influential with 19 publications and 557 citations, followed by the journal Smart Villages in the EU and Beyond, with 13 publications and 129 citations. European Countryside with 6 publications and 112 citations. IEEE Communications Magazine with 4 publications and 90 citations. Land Journal with 6 publications and 68 citations, and Energies Journal with 5 publications and 45 citations. European Rural Journal and IEEE Communications Magazine received significant citations but had fewer publications. The total link column shows the intensity of the links seen in Figure 2.

Co-citation analysis.

Co-citation analysis serves as a tool to reveal the intellectual architecture of a research topic, showing how two publications are connected within a co-citation network when both are cited by a third publication (Rossetto et al., 2018). This method allows researchers to identify key publications and thematic clusters, illuminating the core contributions and discussions within a field (Hjørland, 2013). By applying co-citation analysis to our study of smart villages, we have identified key articles that have played a significant role in developing the knowledge base of the field. These articles have provided theoretical and empirical insights, introducing assumptions, conceptual frameworks, and preliminary findings that lay the foundation for further exploration and validation within the smart villages research field.

Figure 3: Co-citations analysis. Each node in a picture represents a publication, and two publications are linked if they co-occur in the reference lists of the papers selected by our review. The node's size shows the citation frequency, with larger nodes representing more citations. The connection between the nodes symbolizes the presence of the related articles together.



Source: own elaboration (2024)

Table 3: Top 7 Influential articles in smart village research.

Title	Author	Journal	Citation	Total link strength
Rescaling and refocusing smart cities research: From mega cities to smart villages.	Visvizi et al., 2018.(b)	Journal of Science and Technology Policy Management	246	97.05
Smart villages: Comprehensive review of initiatives and practices.	Zavratnik et al., 2018	Sustainability	228	90.59
It's not a fad: Smart cities and smart villages research in European and global contexts	Visvizi and Lytras 2018 (a)	Sustainability	140	52.55
The "Smart Village" as a way to achieve sustainable development in rural areas of Poland	Adamowicz & Zwolińska (2020).	Sustainability	124	45.00
Achieving universal energy access and rural development through smart villages	van Gevelt et al., (2018)	Energy for Sustainable Development	97	37.65
Integrated biomass and solar town concept for a smart eco-village in Iskandar Malaysia	Ho et al., (2014)	Renewable Energy	84	24.60
How do smart villages become a way to achieve sustainable development in rural areas? Smart village planning and practices in China	Zhang & Zhang 2020.	Sustainability	80	19.79

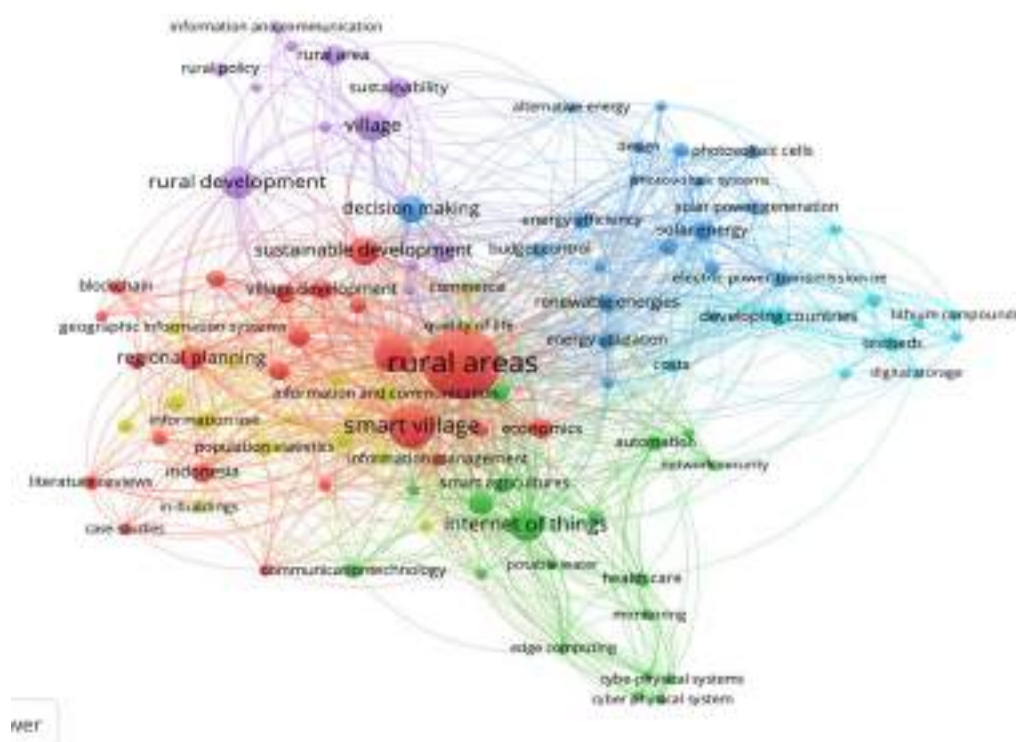
Source: own elaboration (2024)

Co-word analysis

Co-word analysis serves as a central tool for delving into the content of publications, primarily by examining “author keywords.” This method allows researchers to dissect and understand the nuances of each thematic cluster within the literature, providing valuable insights into the core topics under investigation. Furthermore, co-word analysis has the potential to predict future research trajectories by analyzing significant terms from sections discussing implications and future directions within publications.

Using this methodology, we have identified 31 keywords that form the basis for defining thematic clusters within the Smart Villages research domain. Figure 5 provides a visual representation of these clusters, distinguished by the colors red, green, blue, purple, and yellow. Each color delineates a specific thematic cluster, which together provide a nuanced representation of the current intellectual landscape of smart village research. This categorization into five distinct clusters aligns with our aim to encapsulate the multifaceted intellectual structure that characterizes the smart village research field (Angioni, 2016).

Figure 4: Co-word (keyword co-occurrence) involves examining the co-occurrence of keywords. The node's size reflects the frequency of the keyword. The connection between the nodes symbolizes the correlation between keywords. Each color represents a thematic cluster, where the nodes and linkages within that cluster may elucidate the coverage of subjects related to the theme.



Clustering

Clustering is an important enhancement strategy in bibliometric analysis, which aims to generate thematic clusters and monitor their evolution. This technique facilitates a deeper understanding of the emergence and development of a research field (Zupic & Čater, 2015). To this end, we conducted a detailed content analysis of the top 20 articles using NVivo 12 software. This process allowed us to comprehensively delineate the themes and gain in-depth insights into their interrelationships. In addition, we provide concise summaries for each cluster identified, together with a preview of potential directions for future research.

Table 4: Top 7 Influential articles in smart village research.

Cluster	Theme	Articles
Cluster one	Sustainable development	Zhang & Zhang (2020), Wang et al., (2022), Adamowicz et al., (2020)
Cluster two	Agriculture	Visvizi & Lytras, (2018) Adamowicz et al., (2020) Aggarwal et al., (2018)
Cluster three	Policy	Aziiza et al., (2020) Philip & Williams (2019) Naldi et al., (2015)
Cluster four	Energy	Schnitzer et al.,(2014) Prinsloo et al., (2016) Somwanshi et al., (2016)
Cluster five	Information communication technology (ICT)	Stojanova, et al., (2021) Pěluha et al., (2019). Patnaik et al., (2020)

Cluster 1, named ‘sustainable development’, is characterized by the highest number of citations and significant depth of content. It explores the direct link between the Sustainable Development Goals (SDGs) and their critical role in

addressing emerging challenges in rural areas, such as poor governance (Dahlman, 2016). Cluster 2, identified as 'Agriculture', focuses on climate-smart agriculture (CSA) as a dominant and frequently cited theme in smart village research. This cluster highlights the urgent need for effective agricultural management practices that address climate change through adaptation, resilience, and mitigation (Agarwal et al., 2018). Cluster 3, Information and Communication Technology (ICT) is recognized for improving services in rural areas. ICT facilitates simpler and more efficient rural operations, contributing to the overall improvement of rural communities (Pélucha, 2019). Cluster 4, 'Energy,' indicates a growing interest in energy issues related to smart villages. Studies within this cluster have shown that energy management plays a central role in the success or failure of electrification efforts in off-grid rural areas (Schnitzer et al., 2014). Cluster 5, referred to as 'Policy', brings together a series of policy briefs and proposals to develop smart villages. The European Union's launch of the EU Action for Smart Villages in 2017 is an important strategy to promote rural development.



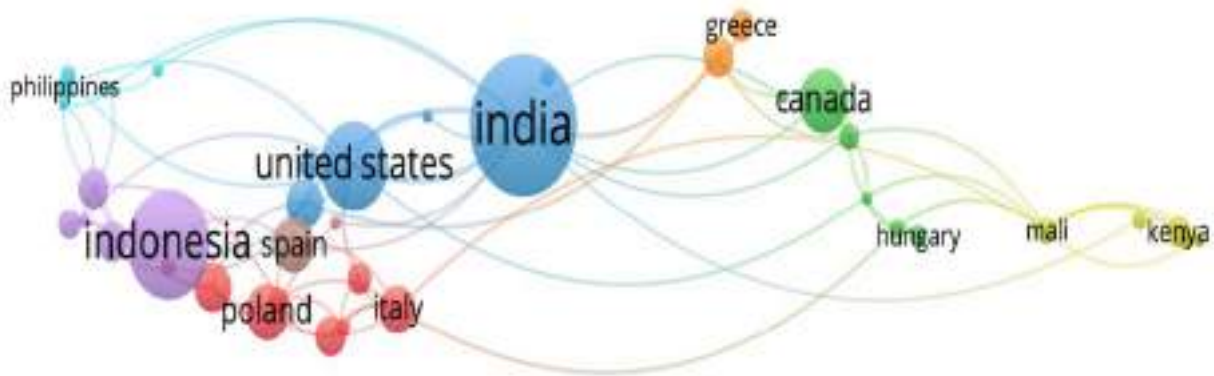
The findings from developing these thematic clusters offer promising directions for further research. Studies, including those by Wang et al. (2022), emphasize the importance of achieving sustainable development goals at the community level as a cornerstone for the effective realization of smart village initiatives. This aligns with Cluster 1, 'Sustainable Development', which highlights the critical intersection between sustainable development and addressing rural challenges. It also reinforces the concept of smart villages as a valuable approach to increasing agricultural output through climate-smart agriculture (CSA), as identified in research by Adamowicz et al. (2020). This finding complements the discussions in Cluster 2, 'Agriculture', highlighting the need for adaptation, resilience, and mitigation strategies in agriculture to address the impacts of climate change. It also recognizes the role of regional or national rural development policies in supporting various aspects of smart village development. These include promoting alternative energy sources and improving internet connectivity in rural areas (Philip & Williams, 2019; Schnitzer et al., 2014; Stojanova et al., 2021). This perspective is reflected in Cluster 5, 'Policy', which gathers proposals and strategies to promote the development of smart villages, and Cluster 4, 'Energy', which focuses on the importance of energy management in rural electrification projects.

Co-authorship analysis

Our results show that India has a prominent position in Smart Village research, with notable contributions from Indonesia, Canada, Poland, Spain, and Italy. Despite these countries' active engagement in the field, there remains a significant opportunity to broaden the scope of their co-authorship networks. Expanding these collaborations is essential

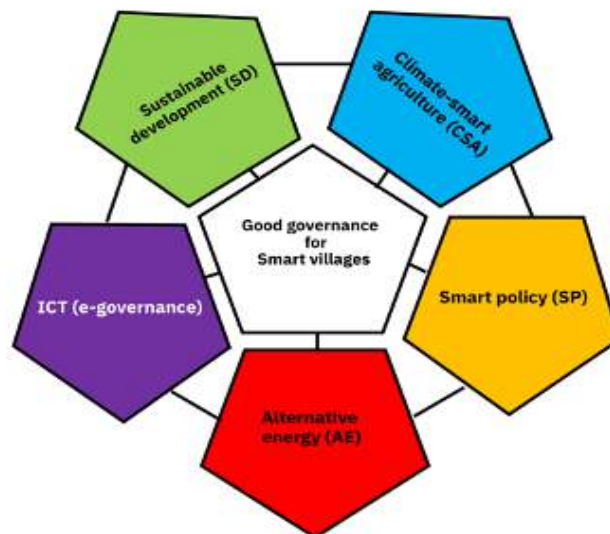
to increase the depth and diversity of research in smart villages, potentially leading to innovative solutions and approaches that address the unique challenges rural communities face worldwide. This analysis not only maps the current landscape of co-authorship within smart village research but also highlights the potential for increased international collaboration to enrich the field further.

Figure 6: Co-authorship involves examining the scholar's collaboration with each other. The node's size reflects the frequency of collaboration. The connection between the nodes symbolizes the correlation between authors and other countries.



Our findings culminate in a conceptual model that highlights the critical link between key themes in smart village research and the concept of good governance. This model serves as a springboard for further exploration in subsequent studies (see Figure 7).

Fig 7: Conceptual Model emerges from findings. **Note(s):** boxes represent themes. Lines indicate the linkage between themes and the concept of Good governance.



Source: own elaboration (2024)

Research limitations. Our study used performance analysis and science mapping techniques to explore the convergence of good governance and smart village research. However, it's important to acknowledge that our exploration did not encompass the full range of empirical methods available for such investigations. We encourage future research efforts to broaden the scope of our conceptual framework, potentially revealing more nuanced aspects of this relationship. First, we suggest further research into the relationship between sustainable development and good governance in the context of smart villages. Given the complexities of smart village development, a deeper investigation into the implications of good governance principles for achieving sustainable development goals is warranted. Second, the importance of good governance and smallholder institutions has been highlighted by the Paris Climate Agreement (2015). However, existing research has mainly focused on the scientific and technological dimensions of climate-smart agriculture (CSA) practices. We argue that future research should delve deeper into bridging knowledge gaps on socio-political issues in the context of smart villages and examine the effectiveness of good governance in addressing CSA challenges. Third, smart villages encompass various conceptual dimensions such as smart people, smart mobility, smart

environment, smart governance, smart living, and smart economy. Building on these foundations, we suggest that New Public Management (NPM) researchers focus on formulating smart policies to address the phenomenon of ‘smartness’ in smart village research. Finally, although rural governance can provide residents with government services that are appropriate, methodical, and transparent, there is still a lack of research on smart communities. Therefore, we recommend that future studies investigate the role of information and communication technology (ICT) from an e-government perspective in achieving good governance in smart villages. In the area of co-word analysis, our focus was limited to an in-depth examination of 27 selected articles to delineate thematic clusters and their interrelationships within smart village research. Acknowledging this limitation, subsequent research could benefit from expanding the corpus of full-text articles analyzed. Such an expansion would improve the understanding of the smart village knowledge base’s intellectual structure and thematic development, thereby facilitating a more comprehensive mapping of this research field. This approach would deepen insights into existing thematic patterns and identify emerging trends and gaps in the literature, thus guiding future scholarly endeavors in this area.

Managerial implications. Our research highlights the contributions of prominent authors, institutions, and regions, as well as the importance of strategic partnerships and efficient resource allocation in advancing smart village efforts. The delineation of five primary research themes within the smart village domain provides a clear roadmap for prioritizing research efforts, allocating funding, and forming multidisciplinary teams. In addition, our examination of collaborative networks highlights the potential for cultivating international partnerships, thereby fostering global collaboration and advocating for a more holistic approach to smart village development. This finding is particularly relevant for policymakers seeking to strengthen cross-border relationships and academics seeking to increase their research impact through international collaborations. Identifying the most influential publications in our study serves to help managers and academics select effective channels for disseminating information and keeping abreast of emerging trends in smart village research. This understanding is crucial for adapting to the evolving landscape and ensuring a flexible allocation of resources. For policymakers, the insights gained from this bibliometric analysis can inform the development of policies supporting smart village efforts’ sustainability and effectiveness. Incorporating these findings into policy formulation can lead to more informed decision-making processes that support the success of smart village initiatives. In summary, our bibliometric analysis lays the groundwork for fostering collaboration, guiding funding decisions, and promoting multidisciplinary engagement among managers, policymakers, and academics. This collaborative effort is essential for smart village projects’ sustainable growth and viability worldwide.

Originality of the paper. This study contributes to the understanding of the interplay between good governance and smart village initiatives through an innovative combination of bibliometric and content analysis. It highlights the central role of good governance in the prosperity of smart villages, delineates the scholarly terrain, and identifies areas for future research. By delineating specific areas for further scholarly investigation, this study facilitates a more in-depth examination of efficient governance frameworks within smart village development, providing a new perspective for both scholars and policymakers.

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The Paradox of Sustainability in Crowdfunding: Lessons from the Food Industry

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Abstract

This study delves into the complex interplay between crowdfunding success and sustainability orientations within the food sector, utilizing a dataset from Kickstarter campaigns between 2013 and 2020. At the intersection of digital business, sustainability, and the food industry, this research explores how environmental and social impact narratives influence the likelihood of crowdfunding achievements. Through content analysis, the study quantitatively assesses the presence of Environmental Impact Orientation (EIO) and Social Impact Orientation (SIO) in campaign narratives, culminating in the creation of a Sustainable Impact Score (SIS) to measure the overall commitment to sustainability. Logistic regression analysis reveals a paradoxical finding: campaigns with a higher emphasis on sustainability tend to experience lower success rates. Despite the growing consumer demand for sustainable practices, this inverse relationship highlights a nuanced challenge in communicating sustainability within crowdfunding contexts. The study contributes to the academic debate by providing methodological innovation through the SIS and offering practical insights for campaigners and platforms seeking to navigate the complexities of sustainability in crowdfunding. By bridging the gap between theoretical understanding and practical application, this research illuminates the pathways for leveraging digital platforms in support of sustainable initiatives within the food sector, encouraging further exploration into the determinants of crowdfunding success.

Keywords: Crowdfunding, Sustainable Digital Business Model, Environmental Impact Orientation, Social Impact Orientation, Food Sector.

Framing of the research. *The framing of this research is positioned at the confluence of three critical and contemporary streams: the evolving landscape of crowdfunding as a pivotal mechanism for raising capital, the increasing integration of sustainability into business models, and the unique context of the food sector, which stands at the intersection of environmental, social, and economic concerns. This multidimensional approach reflects an understanding that the dynamics of crowdfunding success cannot be fully appreciated without considering the broader societal shifts towards sustainability and the specific challenges and opportunities inherent in the food industry (Cillo et al., 2019; Li et al., 2020; Pronti and Pagliarino, 2019).*

At its core, the research seeks to decode the nuanced ways in which environmental and social impact orientations influence the success of crowdfunding campaigns within the food sector. This sector is uniquely impacted by and contributes to sustainability issues, from resource consumption and waste production to health and social equity. As such, it provides a fertile ground for investigating how the growing consumer demand for sustainability is mirrored in the crowdfunding domain, where backers invest in ideas and projects that align with their values and concerns.

Crowdfunding, traditionally viewed through the lens of financial metrics and project characteristics, is re-examined in this study through a sustainability lens, considering how environmental and social narratives embedded within campaign descriptions might affect their appeal and, consequently, their funding outcomes (Moss et al., 2018). This approach acknowledges the role of digital platforms in not only facilitating the exchange of capital but also in reflecting and shaping societal values, particularly regarding sustainability (Bhattacharya et al., 2008, Carroll, 1991).

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Moreover, the research is framed to contribute to the discourse on digital business models, particularly how these models can be leveraged to support and promote sustainable development within the food sector. It aims to bridge the gap between theoretical insights on sustainability and practical outcomes in the crowdfunding sphere, offering a comprehensive analysis that extends beyond the traditional focus on project or backer characteristics.

Purpose of the paper. The paper sets out on an exploratory journey to disentangle the complex dynamics underpinning crowdfunding success within the food sector, particularly through the lens of environmental and social impact orientations. At the heart of this investigation lies the premise that the explicit commitment to sustainability—encompassing both environmental and social dimensions—plays a critical role in influencing the perceptions of backers and, by extension, the success of crowdfunding campaigns on platforms such as Kickstarter. This exploration is timely and significant, given the escalating emphasis on sustainability in business practices and consumer behavior, alongside the rapid digital transformation of business and fundraising mechanisms.

Through rigorous content analysis, this study aims to quantitatively measure the extent to which sustainability concerns are articulated in the narratives of food-related crowdfunding campaigns. This methodological approach is designed to objectively assess how environmental and social impacts are communicated to potential backers, thereby laying a foundation for a deeper understanding of the narrative strategies employed by campaigners.

A focal point of the paper is the investigation of the correlation between these sustainability orientations and the achievement of crowdfunding goals. It analyzes whether an emphasis on environmental and social impact, as communicated through campaign narratives, bears a significant relationship with the ability of these initiatives to meet or exceed their funding targets. This study is vital for discerning the nuanced ways in which sustainability messaging influences crowdfunding outcomes.

Moreover, the paper introduces an innovative methodological contribution through the development of the SIS, a composite measure that synthesizes environmental and social impact orientations into a singular metric. This approach allows for a comprehensive evaluation of a campaign's sustainability commitment and its potential impact on crowdfunding success, offering a novel lens through which to examine these dynamics.

Beyond its theoretical ambitions, the paper also seeks to furnish practical insights for campaigners and crowdfunding platforms. By elucidating the complex interplay between sustainability communication and crowdfunding success, the study provides strategic guidance for crafting compelling campaign narratives and suggests avenues through which platforms can better accommodate and promote sustainability-focused projects.

Lastly, the study aspires to act as a catalyst for further research in this growing field, encouraging scholars to delve deeper into the intersections of sustainability, digital crowdfunding, and consumer behavior. It highlights the need for a broadened inquiry into the determinants of crowdfunding success and invites an exploration of these phenomena across various sectors and crowdfunding models.

Methodology. The methodology section delineates the structured approach employed to dissect the relationship between crowdfunding success and environmental and social impact orientations within the food sector, utilizing a dataset collected from Kickstarter campaigns between 2013 and 2020. Kickstarter, a leading reward-based crowdfunding platform recognized for its comprehensive project visibility and “all-or-nothing” funding model, served as the exclusive data source, aligning with the precedent set by seminal studies in the crowdfunding domain (Hu et al., 2015; Kim et al., 2016; Mollick, 2014; Zhou et al., 2018). The choice of Kickstarter was motivated by its significant footprint in the crowdfunding landscape and the opportunity to benchmark this study's findings against an extensive body of existing research.

Focusing specifically on the food category, the study acknowledges the sector's pivotal role in environmental sustainability and public health, as well as its cultural and social significance. This focus is driven by the sector's substantial impact on land use, biodiversity, water resources, and its direct linkage to consumer health trends and cultural practices. The manual compilation and verification of data culminated in a refined dataset comprising 397 projects, carefully screened for language consistency and completeness.

Crowdfunding success is operationalized as a binary outcome, reflecting whether a project meets or exceeds its funding target, in line with established methodologies (Hildebrand et al., 2017; Moritz and Block, 2016; Shneor and Vik, 2020). This study employs content analysis to quantitatively assess the presence and intensity of SIO and EIO within project narratives, building upon the linguistic categorization introduced by Moss and colleagues (2018). Each campaign's narrative was systematically analyzed to quantify the prevalence of categorized terms reflective of SIO and EIO, resulting in a scoring system that captures the emphasis on these orientations.

Further, the introduction of the SIS represents a methodological innovation, synthesizing the EIO and SIO scores into a composite measure of a project's sustainability orientation. This balanced metric facilitates a comprehensive evaluation of a campaign's commitment to sustainability.

To ensure the robustness of the content analysis, a rigorous validation process involving inter-rater reliability checks via Cohen's Kappa statistics was implemented, confirming the objectivity and consistency of the evaluative approach (Fleiss et al., 2003). The econometric analysis incorporated a range of control variables, including the number of backers,

project goal, campaign duration, and visual elements of the project presentation, among others, to provide a holistic view of the factors influencing crowdfunding success.

Employing logistic regression, the study examines the impact of EIO, SIO, and SIS on CS, alongside these control variables, to elucidate the dynamics at play in determining crowdfunding outcomes in the food sector. This methodological choice is grounded in the binary nature of crowdfunding success and is supported by a body of literature that underscores the efficacy of logistic regression in exploring the determinants of crowdfunding achievements (Deng et al., 2022; Zhou et al., 2018).

Results. The results of the logistic regression analysis offer a nuanced understanding of the determinants influencing crowdfunding success within the food sector, specifically examining the roles of EIO, SIO, and a combined SIS.

In Model 1, which focused on the effect of EIO on crowdfunding success, a significant negative relationship was uncovered. The regression coefficient ($b = -.393$, $p < .05$; $SE = .169$) indicates that campaigns with a higher emphasis on environmental impacts tend to experience lower rates of crowdfunding success. This finding challenges the intuitive assumption that environmental promise would naturally attract more backers, suggesting that the appeal of environmental initiatives may be more complex.

Model 2 examined the influence of SIO on crowdfunding success, revealing a similar negative relationship ($b = -.416$, $p < .05$; $SE = .166$). This suggests that projects prioritizing social impact also face difficulties in achieving crowdfunding success. The consistency of this negative relationship across environmental and social dimensions highlights a broader challenge for projects emphasizing sustainability impacts in their campaigns.

In Model 3, the analysis extended to the composite SIS, which integrates both environmental and social orientations. The findings ($b = -.726$, $p < .01$; $SE = .231$) significantly reinforced the notion that a higher composite sustainability orientation correlates with diminished crowdfunding success, emphasizing the paradoxical nature of sustainability communication in crowdfunding contexts.

Across all models, the number of backers emerged as a consistently positive predictor of crowdfunding success ($b = .033$, $p < .001$; $SE = .006$), underscoring the critical role of broad-based support in crowdfunding achievements. Conversely, the logarithm of the project goal exhibited a significant negative impact across the board (b values ranging from -1.320 to -1.351 ; $p < .001$), indicating that higher funding targets are associated with lower success rates.

The readability score of project descriptions negatively influenced success in all models (b values from $-.037$ to $-.039$; $p < .05$), suggesting that more complex narratives might deter potential backers. Conversely, the number of updates and comments positively correlated with crowdfunding success (number of updates: b values ranging from $.151$ to $.166$; $p < .01$ and number of comments: b values from $.146$ to $.150$; $p < .01$), highlighting the importance of active engagement and community building in successful crowdfunding campaigns.

Other control variables, including the project duration, staff pick status, the proportion of US-based projects, the number of videos, and the number of images, did not demonstrate significant effects on crowdfunding success in any of the models.

Research limitations. The exploratory nature of this study into the relationship between environmental and social impact orientations and crowdfunding success in the food sector inherently comes with limitations that present opportunities for future research. A notable limitation is the exclusive analysis of campaigns from a single crowdfunding platform, which, despite its prominence and frequent citation in academic literature, may not fully encapsulate the diverse dynamics of crowdfunding activities across different contexts. The inclusion of multiple platforms in future studies, especially those catering specifically to the food sector or projects with a sustainability focus, could provide a more comprehensive understanding of crowdfunding behavior and success factors.

Moreover, the scope of determinants investigated in this research is primarily centered around social and environmental impact orientations. This focused approach leaves room for further exploration into additional factors that could significantly influence crowdfunding success. Investigating elements such as the language style or the tone of communication within campaign narratives could uncover deeper insights into effective crowdfunding strategies. These aspects may play a crucial role in engaging potential backers and influencing their decision-making processes.

Another specific area for future investigation arises from the methodology employed to assess the sustainability impact orientation of crowdfunding campaigns, where social and environmental impacts were assigned equal importance. This equal weighting approach might not align with the nuanced preferences or values of backers, who may prioritize one dimension over the other. Future studies could aim to refine the sustainability impact orientation indicator by exploring alternative weighting schemes that more accurately mirror the backers' perspectives. Empirical testing to identify the optimal balance between social and environmental components could enhance the indicator's utility, leading to more precise evaluations of campaign sustainability efforts.

Additionally, understanding how different target audiences perceive and value environmental versus social impact orientations could yield valuable insights. Tailoring campaign strategies to align more closely with the specific interests and motivations of various backer segments may improve campaign appeal and, ultimately, success rates.

Managerial implications. This research extends beyond theoretical insights, providing practical implications for both campaigners in the crowdfunding domain and crowdfunding platforms themselves. For campaigners, the essence of strategic communication cannot be overstated. The findings elucidate the delicate balance required in showcasing environmental and social impacts within campaign narratives. While these orientations are intrinsically valuable, their overemphasis could inadvertently impede crowdfunding success. Campaigners are thus encouraged to weave these messages into a broader narrative that encompasses the project's core value proposition, ensuring the sustainability message complements rather than dominates.

Understanding the diverse motivations of potential backers emerges as another crucial strategy. This study highlights the importance of distinguishing between backers drawn primarily to the project's utility and those motivated by its environmental or social implications. By tailoring marketing efforts to address these distinct interests, campaigners can enhance their appeal across a broader spectrum of potential supporters. This tailored approach not only speaks to the varied motivations of the crowdfunding audience but also optimizes engagement and support.

For crowdfunding platforms, the study suggests a shift towards features that enable a more nuanced evaluation of campaigns, particularly in terms of their sustainability impact. The introduction of tools or metrics akin to the sustainability impact orientation indicator can offer backers a deeper understanding of a project's environmental and social commitments. Platforms stand to benefit from incorporating such features, enhancing their ability to attract a diverse range of investors and enriching the crowdfunding ecosystem with a stronger focus on sustainability.

Moreover, platforms are advised to consider the implementation of enhanced categorization methods and visibility features for sustainability-focused projects. Such initiatives could improve the matchmaking process between projects and interested backers, thereby elevating the profile of campaigns with significant environmental and social impacts. Additionally, the adoption of visual indicators or scoring systems to reflect a project's sustainability orientation could further streamline the decision-making process for backers, offering quick and clear insights into the sustainable nature of projects.

Originality of the paper. This paper's originality lies in its multifaceted theoretical contributions to both the academic and practical understanding of crowdfunding in the context of sustainable digital business models, specifically within the food sector. Firstly, it advances the academic debate on the determinants of crowdfunding campaign success by dissecting campaign texts into specific orientations - environmental and social. This approach builds upon and extends the concept of social linguistic positioning as outlined by Moss and colleagues (2018). By differentiating between environmental and social narratives, this research enriches the literature on crowdfunding communication strategies, offering a nuanced view of how these orientations influence potential backers.

Secondly, this study addresses a significant gap in literature by focusing on crowdfunding within the food sector, a domain that, despite its importance, has received limited attention from scholars. The findings reveal a paradox where a strong emphasis on social and environmental issues may reduce a project's chances of crowdfunding success. This insight is critical as it challenges the prevailing assumption that such commitments universally enhance backer appeal, adding depth to our understanding of the dynamics at play in food sector crowdfunding.

Lastly, the development of a sustainability impact orientation indicator, the SIS, marks a significant methodological leap forward. This tool allows for a more effective assessment and communication of a campaign's sustainability efforts, potentially overcoming the perceptual barriers faced by projects that span multiple categories. Inspired by the challenges highlighted by Leahey and colleagues (2017) regarding audience perception, the SIS provides a concrete metric for evaluating and highlighting sustainability in crowdfunding campaigns. This advancement is not merely methodological but has profound implications for improving the communication strategies of crowdfunding campaigns, thus enhancing their success potential.

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Paradoxical Tensions and Paradoxical Mindset as Predictors of Managers' Behavioral Responses to AI-driven Healthcare Tools: A Preliminary Study

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Abstract

Artificial Intelligence (AI) may reshape healthcare by introducing new treatments and applications. As implementation of AI in medicine increases, understanding the responses of medical professionals to these technologies becomes crucial to improve AI's potential for the medical field. This study explores the impact of paradoxical tensions and the paradoxical mindset on medical staff reactions to AI uses. By leveraging on a quantitative research design with an experimental study involving 357 participants, the results show that the paradoxical mindset moderates the effects of paradoxical tension on performance, learning, and belonging influencing users' positive intention to use and satisfaction.

Importantly, investigating the interplay between paradoxical tensions and a paradoxical mindset as determinants of managers' inclination to adopt artificial intelligence tools contributes to understanding the dynamics of organizational decision-making, fostering sustainability in the evolving digital landscape.

Key words: artificial intelligence; paradoxical tensions; paradoxical mindset; intention to use; users' satisfaction; healthcare

Framing of the research. The examination of healthcare managers' intention to adopt artificial intelligence (AI)-based tools require a sophisticated understanding of the paradoxical tensions inherent in decision-making processes, especially its relevance for data-driven decision-making processes (Irgang et al., 2023; Sestino et al., 2023).

Paradoxical tensions, characterized by the simultaneous existence of conflicting demands or goals, play a pivotal role in shaping organizational behavior and decision-making (e.g., as in Miron-Spektor et al., 2018; Smith & Lewis, 2011). In the context of AI adoption in healthcare management, managers often deal with the tension between embracing technological advancements for improved patient outcomes and the apprehension surrounding the potential disruption and ethical implications of AI implementation. A paradoxical mindset becomes crucial in navigating these tensions, as it involves the ability to simultaneously hold and manage contradictory beliefs and attitudes (Boemelburg et al., 2023; Miron-Spektor et al., 2018). This mindset allows healthcare managers to recognize the dual nature of challenges and opportunities that AI presents in the healthcare sector. Consequently, investigating the role of paradoxical tensions and the cultivation of a paradoxical mindset is imperative for gaining insights into healthcare managers' intentions to embrace AI-based tools and enhancing the strategic decision-making processes within healthcare organizations.

The existing body of literature focuses on the adoption of data-driven technologies, specifically AI, in healthcare, employing a narrow technology-centric approach (Nilsen et al., 2022). This research often operates under the assumption that AI adoption occurs when individuals perceive algorithms as useful, reliable, and capable of producing fair and explainable outcomes (Choung et al., 2022; Shim, 2021; Wang et al., 2021), also accordingly a sustainable paradigm (Wilson et al., 2022). Previous studies have explored the attitudes and behavior of healthcare practitioners towards AI, addressing concerns such as performance anxiety, privacy issues, social influence, hedonic motivations, and anthropomorphism (e.g., as in Cabrera-Sánchez et al., 2021; Esmaeilzadeh, 2020; Lu et al., 2019). However, the inherent tensions arising in AI-related decision-making processes have yet to be thoroughly investigated, necessitating further research to unravel this complex phenomenon, especially as for a sustainable perspective (Aloisi et al., 2023).

The Paradox theory, within the context of technology adoption literature, provides a valuable theoretical framework for understanding three distinct types of tensions in AI clinical decision-making (Miron-Spektor et al., 2018; Schad et al., 2016) in terms of performing tensions, learning tensions, and belonging tensions. Performing tensions involve

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conflicts between the contradictory needs, interests, demands, outcomes, and requirements; To clarify, in clinical decision-making, healthcare practitioners grapple with conflicting interests from patients, their families, the healthcare system, and the hospital itself. The introduction of AI systems is believed to enhance performance, but it also raises expectations, leading to performing tensions. Similarly, learning tensions manifest over time as healthcare practitioners navigate between traditional practices and algorithmic recommendations that may contradict conventional conclusions regarding treatments and diagnoses (Hsiao et al., 2013). Balancing adherence to traditional methods against embracing unconventional algorithmic recommendations gives rise to learning tensions. Moreover, belonging tensions, also known as tensions of identity, stem from the complexity and plurality of individuals and groups seeking both homogeneity and distinction (Smith & Lewis, 2011). The integration of AI-based decision support systems may offer healthcare practitioners a sense of belonging by leveraging advanced technology for patient care. However, simultaneous concerns about AI replacing human tasks and decisions generate belonging tensions.

In the realm of healthcare, the consideration of paradoxical tensions and mindset proves to be pivotal in the construction of long-lasting “sustainable” digital business model, in its broader sense (Endregat & Pennik, 2021; van Bommel, 2018): Firstly, paradoxical tensions, arising from conflicting demands such as cost efficiency versus quality care, or innovation versus regulatory compliance, require adept navigation for effective decision-making. Embracing a mindset that acknowledges and strategically addresses these tensions fosters resilience and adaptability within the digital healthcare business model.

Moreover, a dynamic mindset facilitates the identification of synergies between seemingly contradictory elements, leading to innovative solutions that can enhance sustainability. In an academic context, recognizing and managing paradoxical tensions underscores the need for a nuanced understanding of the complex interplay between diverse factors in the healthcare ecosystem, ensuring the development of digital business models that are not only technologically advanced but also socially, economically, and ethically sustainable.

Purpose of the paper. Drawing upon the findings of recent research (Liu et al., 2020; Miron-Spektor et al., 2018; Schad et al., 2016), our study posits that the anticipation of managers' intention to use, and their satisfaction with Artificial Intelligence (AI)-based tools in healthcare can be effectively predicted through the examination of both paradoxical tensions and paradoxical mindset variables. We contend that a comprehensive understanding of these factors will contribute to a nuanced comprehension of the dynamics influencing the utilization and reception of AI technologies within the healthcare domain. Furthermore, our investigation underscores the pivotal role of paradoxical mindset as a potential mediator in this context, given its inherent nature to reconcile opposing tensions and foster a cohesive framework for the successful implementation and acceptance of AI tools in healthcare settings. This assertion is rooted in a synthesis of extant literature, which suggests that a mindful consideration of paradoxical mindset will significantly enhance our comprehension of the intricate relationships governing the integration of AI in healthcare management and end-user satisfaction.

Methodology. Through explorative research design, a survey-based study was conducted among of a sample of 357 managers operating in the healthcare sector and if, how, and to what extent they were using AI-based tools. The study focused on the role of a paradoxical mindset in mediating these effects.

To develop the questionnaire design, the researchers conducted online workshops with healthcare experts. The questionnaire consisted of four main sections. The first ensured participant anonymity and emphasized aggregate-level statistical analysis. The second provided a comprehensive scenario of AI applications in healthcare. In the third section, the participants declare both their intentions to use AI by leveraging the three-items scale proposed by Venkatesh et colleagues (2012) (e.g., “I intend to continue using AI systems/tools in the future”), and their perceived satisfaction by using the scale proposed by Shin et colleagues (2020) (e.g., “Largely, I am fairly pleased with AI systems/tools”, and so on). We then asked them to report possible paradoxical tension by using a scale adapted from Miron-Spekto et al. (2018), and Anicich et al. (2021) (e.g., “When using AI systems/tools, I need to be flexible while also complying with the company's tight rules”, “When using AI systems/tools, I need to gain new skills while relying on my existing skills”, “When using AI systems/tools, I need to compete and cooperate with others”, “When using AI systems/tools my perception of how much power I have in relation to others changes throughout the day”). Finally we collected their perceptions of their paradoxical mindset by using the scale drawn from Miron-Spektor et colleagues (2018) as well (e.g., “In contexts where I use AI systems/tools I am comfortable dealing with conflicting demands at the same time”, “In contexts where I use AI systems/tools I am comfortable dealing with conflicting demands at the same time , I often experience myself as simultaneously embracing conflicting demands”).

Finally, we asked them for sociodemographic information, including gender, age, education, occupation, organization type, and work experience.

Results. The survey has been distributed via email to 1,890 potential participants from a panel data source. Of the 557 respondents, 207 were excluded due to incomplete responses or lack of regular AI tool use within the last six months prior to the survey. The final sample comprised 357 participants, primarily male (61.90%), aged 35-44 (31.93%), and predominantly medical doctors (91.60%) with university degrees or Ph.D. qualifications. Most of them declared to work in public hospitals (54.34%) and had 1-10 years of experience (53.22%). Utilizing the conceptual framework illustrated in Figure 1 to underpin our rationale and hypotheses, we performed a straightforward analysis of a mediation model by employing Model 4 (Simple mediation model) as recommended by Hayes (2017).

The analysis utilized the PROCESS macro for SPSS: In this model, paradoxical tensions were defined as the independent variable (X), with the paradoxical mindset serving as a mediator (Me) to assess its impact on both individuals' intentions to use and satisfaction, which were considered as dependent variables. Following the approach

suggested by Hayes (2017), the analysis unfolded in two consecutive steps. First, we examined the influence of paradoxical tensions on the paradoxical mindset. Subsequently, in the second step, we scrutinized the effect of the paradoxical mindset on the dependent variables, namely intentions to use and users' satisfaction. This method allowed us to evaluate the hypothesized mediation effect of the paradoxical mindset between paradoxical tensions and both intentions to use and users' satisfaction, shedding light on whether the paradoxical mindset played a crucial role in explaining this relationship.

Preliminarily, our statistical analysis shed light on a direct effect of the paradoxical mindset on both intentions to use ($b = .343, t = 4.516, p = .000$) and users' satisfaction ($b = .286, t = 3.440, p = .000$). In the first step of the statistical analysis, we regressed paradoxical mindset on the independent variable, paradoxical tensions. Subsequently, in the second step, both intentions to use and users' satisfaction were regressed on both paradoxical mindset and paradoxical tensions. In the initial step, we observed a positive and significant effect of the paradoxical mindset regressed on paradoxical tensions ($b = .336, t = 6.149, p = .000$). In the second step, we found a positive and significant effect as the paradoxical mindset significantly and positively influenced the dependent variables—intentions to use ($b = .264, t = .070, p = .000$) and users' satisfaction ($b = .306, t = 3.977, p = .000$). Notably, the dependent variable, paradoxical tensions, also exerted a significant and positive effect on both intentions to use ($b = .343, t = 4.516, p = .000$) and users' satisfaction ($b = .286, t = 3.440, p = .000$).

Research limitations. Despite the promising results, our paper limits its examination to the healthcare sector, emphasizing the need for future research endeavors to broaden the scope of analysis to encompass diverse domains.

Additionally, the focal point on managerial behavior in our study suggests the potential for future investigations to elucidate the role of managers' personal characteristics or traits as moderator factors influencing their inclination to adopt specific practice, e.g., in terms of personality traits in terms of innovativeness, openness to change and so on; leadership style in terms of transformational vs. transactional, or autocratic vs democratic; decision making style in terms of risk tolerance vs. analytical thinking; their adaptability in terms of flexibility vs. problem-solving skills; motivations e.g., as for intrinsic vs. extrinsic motivations, or achievement orientation; time management, cultural sensitivity and so on).

Finally, the study does not deal with how the intention and quality of use differs whether the use is for the healthcare organization, or if it is individually oriented, e.g. whether all medical doctors within a specialization are to use AI, or if an individual doctor recognizes the usefulness of AI for his or her benefit.

Managerial implications. This preliminary research highlighting the significance of paradoxical tensions and mindset as predictors of managers' intention to use and satisfaction with AI-based tools in healthcare carries several managerial implications. Firstly, organizations in the healthcare sector need to recognize and understand the paradoxical tensions that may arise in the adoption of AI tools. Acknowledging the inherent contradictions and managing them effectively can enhance the acceptance and utilization of these tools among managers. This suggests a need for training programs and interventions that target the development of cognitive flexibility and adaptability in navigating paradoxes.

Secondly, the paper shed light on the importance of “cultivating” and “working” for a mindset conducive to embracing AI technologies in healthcare management. Managers should be encouraged to foster a forward-thinking attitude that embraces innovation and acknowledges the transformative potential of AI. Organizations may consider implementing educational initiatives and workshops to enhance the cognitive readiness of managers, promoting a positive mindset towards AI adoption.

Thirdly, managerial implications deriving from the study extend to the realm of developing sustainable digital business models with a social orientation. The research suggests that fostering a positive mindset towards AI in healthcare management is not only about individual readiness but also about creating a supportive organizational culture. To build sustainable digital business models, organizations must prioritize a social orientation, ensuring that the integration of AI aligns with societal values, ethical considerations, and broader healthcare goals. This necessitates a collaborative approach involving stakeholders, policymakers, and the community to shape digital transformations that prioritize societal well-being over purely commercial interests. Coherently, in building long-lasting sustainable digital business models, organizations should prioritize user experience and ensure that AI tools are designed to meet the specific needs and preferences of healthcare managers. User-centric design principles and continuous feedback mechanisms can contribute to the development of more user-friendly AI solutions, ultimately enhancing satisfaction levels among healthcare professionals.

Originality of the paper. This paper potentially contributes to the existing literature by examining the novel concept of paradoxical tensions and mindset as predictive factors influencing managers' intentions to utilize AI-based tools in healthcare. The exploration of these psychological dimensions offers a nuanced understanding of decision-making processes, shedding light on the complex interplay between cognitive dissonance and technology adoption within the healthcare managerial context. This innovative approach enhances the theoretical framework for comprehending satisfaction with AI tools and provides valuable insights for both academia and practitioners in healthcare management, and to build long-term business model since they are based on a careful behavioral analysis of its stakeholders.

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Development and Sustainability of Online Pharmacy Sales

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Abstract

This short paper aims to explore the relationship between the development of online sales of pharmaceutical products and sustainability. It is still in a preliminary version and merely presents the topic for which a keyword survey of the Scopus database shows a limited number of papers reporting a lack of research on the topic³. The advantages of pharmaceutical e-commerce, limited to drugs, cannot be attributed only to price, but can include others factors as confidentiality (the fact that online purchasing allows the consumer to maintain physical anonymity) or convenience of shopping (24 hours a day, seven days a week, without having to leave home). For some patients, however, there is a need to be able to rely on the advice and professionalism of the pharmacist, while e-commerce is an increasingly attractive channel when the patient knows exactly what he or she wants to buy. Rather than competing with each other, online and physical pharmacy should be integrated in the perspective of the customer, including sensitivity to aspects of sustainability. The paper contributes to the definition of the topic and concludes with a research agenda.

Key words: sustainability; pharmaceutical e-commerce; professionalism of the pharmacist; online pharmacy.

Framing of the research. Our research focuses on the sustainability implications of online drug sales, made possible through the development of digitization. Online sales can present relevance in a framework of strengthening the health care system, meeting needs and demands for additional services than those traditionally offered by the physical pharmacy. In the context of the United Nations Sustainable Development Goal (SDG) for 2030, human health is at the center of the SDG agenda (Konduri et al. 2018), so pharmacies, both physical and online, have also been asked to strengthen their contribution to sustainable health policies and thus contribute to the achievement of the three performance dimensions of sustainability: social, environmental and economic. The sustainable development goals place great responsibility on health care personnel, including pharmacists, because they require a great deal of professional development. It is precisely pharmacists who are required to have additional expertise to their professional skills. We refer to the ability of pharmacists to advise the patient-client when he or she has a choice between two or more drugs or when he or she has no indication from the doctor but still intends to initiate treatment and thus purchase drugs, in this case necessarily OTC or SOP. This additional skill is required of both in-person pharmacists and pharmacists in an online pharmacy. In both cases, it is a skill that can give the organization a competitive advantage. Sustainability can be defined as meeting the needs of the present without compromising future generations in meeting their own, sustainability that invests aspects of ecological, social, economic and governance environment, integrating triple bottom line (Wilson, 2015) and ESG (Rezaee 2021) models. Sustainability also encourages organizations to shift from a business-centered to a network-centered operational logic, as they have to deal with a plurality of actors (Pieroni, McAloone, and Pigosso 2019). In the triple bottom line, achieving the aforementioned dimensions-social, environmental, and economic-as well as being advisable from a purely ethical point of view because it greatly improves, and in some cases even creates, the organization's brand reputation, can also lead to the creation of a competitive advantage and generate shared value. In the case of the drug trade, an additional aspect concerns the nature of pharmacies seen as hybrid organizations (Cavicchi and Vagnoni, 2020) because they lie somewhere between the for-profit and nonprofit sectors. They are indeed business organizations that look at profit opportunities, but they are also health care providers who, by providing drugs, dispense advice in the form of care and counseling, so they contribute to social welfare.

The advent of digitization, as with other sectors has obviously affected all sectors of the economy, thus including the pharmaceutical sector by originating, for example, e-prescribing, with significant reductions in time and paper for activities dedicated to dispensing. But digitization has also originated online pharmacies, enriching the ways in which people can acquire the medicines they need. Specifically, digitization in pharmacy can be understood as a process of

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³ The Scopus database was queried with several keywords. For example, for a string that had several elements ("sustainab*" AND ["e-commerce" OR "online"] AND "pharma*") only 18 products were identified moreover only some of them centered on the theme.

using digital technology to bring about changes in value creation, business processes, and business models to provide new value opportunities for the enterprise and customers (Gobble 2018, Gong and Ribiere 2021). Digitization also provides the enterprise with tools to better evaluate its business partners, whether customers or suppliers. However, the exponential increase in data from digital technologies, such as data centers and servers, has contributed significantly to digital pollution by consuming nearly 7 percent of global electricity, an element that highlights aspects of digitization contrary to sustainability (Shashi 2023).

By integrating online sales activities, the pharmacy assumes new technologies with its traditional goals in the more overall context of digitization of the health care system, albeit within a regulatory framework to which compliance is required which we have mentioned (the online prices of OTC drugs are the same as in the physical store, the online channel must carry the logo of the pharmacy or “common,” the pharmacy is authorized to sell in e-commerce only the drugs purchased and in stock - IQVIA,). To make patients aware of the services that online pharmacy can offer, appropriate promotional campaigns are needed to highlight the skills and expertise that pharmacies can make available to patients. It would also be necessary to address the lack of participation by online pharmacists in their association's work within health policies, participation that is actually quite low for physical pharmacies as well. Patient-centered education should still be included in preparing pharmacists to manage their relationships with patients.

Purpose of the paper. Based on the main available literature, our study aims to analyze the ecological, social and environmental sustainability aspects of online pharmacy. In this analysis, we also focus on pharmaceutical logistics, the importance of which, in a market of undifferentiated products for which it is not possible to act on the price lever, at least for drugs, becomes the real way to gain a substantial and defensible competitive advantage. A special focus is reserved for the Italian pharmaceutical market, pointing out how the online drug trade is subject to strict control by the authorities and how this rigidity is also found in the sanction system.

Methodology. Our research analyzed the social, environmental, and economic sustainability of online pharmacies by defining a grid of elements on sustainability issues emergent from a content analysis on the websites of major pharmaceutical e-commerce chains. In addition to the three dimensions of sustainability mentioned above, our analysis also dwells on governance sustainability and crosswise on logistical aspects, relevant to online sales models but particularly to pharmaceutical sales, so as to provide a comprehensive view of the online pharmacy/sustainability relationship. Environmental sustainability can be best pursued by the pharmacy implementing online sales when activities (information, tutorials, etc.) can be carried out through the new model that help reduce pharmaceutical waste, educating consumers on the proper disposal of medicines and providing solutions to reduce pharmaceutical contamination. Environmental sustainability requires the ability to maintain an adequate and constant balance between the amount of resources withdrawn and consumed within the company and the ability to manage the waste subsequently released into the surrounding environment, waste that should have a limited environmental impact and a high degree of regeneration. Pharmacists can find in the digital environment support for a task that is that of environmental educators. Another way that pharmacies would have to reduce pharmaceutical waste would be to reduce their inventory and discourage patients from abusing drugs. This although would probably reduce pharmacy sales. However, pharmacists can, with regard to personal care, advise consumers on greener alternatives (Kreisberg 2007), making them aware of the environmental consequences of their choices. Pharmacies can act to make the supply chain as environmentally friendly as possible, through various alternatives (Xie and Breen 2012). They can choose to use contract distributors, who use environmentally friendly storage, transportation, and packaging methods and who have environmental certifications. They can in the presence of alternatives select the products of pharmaceutical companies in a way that encourages the design and production of greener drugs. Finally, they can provide facilities for home pickup programs for wasted drugs. All this would make the pharmacy environmentally sensitive and, at the same time, enable it to gain a competitive advantage over those competitors who do not have the same environmental sensitivity as they do. That is, customers prefer pharmacies that engage in drug take-back programs, so pharmacies that participate in these projects can help reduce the environmental impact of the pharmaceutical supply chain while increasing their customer base. To the sensitivity of customers and consumers, which has grown widely in recent years, must be added the pressures coming from regulatory and oversight bodies regarding environmental regulation and compliance, and the varying ability of suppliers to innovate along more sustainable parameters. Presence in digital media can support the achievement of these goals by making them visible to an audience that is not only neighborhood-based, but broader and reachable online. If we can comply with the above behaviors, we could certainly contribute to eco-pharmacovigilance, defined as “the science and activities concerning the detection, evaluation, understanding and prevention of adverse effects or other problems related to the presence of drugs in the environment, affecting both humans and other animal species” (Velo and Moretti 2010).

Social sustainability refers to the ability to ensure conditions of social and human well-being, not only in terms of health but also in terms of education and security. These fundamentals, taken together, go to form a corporate social responsibility that companies should pursue and implement. Limited to online pharmacies, at least those that are most attentive and sensitive to the issue, social sustainability is realized through the achievement of at least two objectives: pharmaceutical care and disease prevention. Pharmacy is not limited to dispensing pharmaceuticals as a mere intermediary, but one that follows the patient throughout the evolution of his or her treatment, pharmaceutical care being defined as the responsible administration of drug therapy in order to achieve defined outcomes that improve the patient's quality of life (Hepler and Strand 1990). This definition shows that the main role of pharmacists, and thus of pharmacy, is first and foremost to promote the safe and effective use of drugs and thus to prevent, or at least be prepared to deal with, problems that might arise while taking the drug. This activity of pharmaceutical care implies that the patient is not only followed during therapy but is constantly counseled, especially in the initial phase, but also afterwards, when adverse

effects due to taking the medication might be greater (Kehrer et al. 2013). Pharmacists, and here we come to the second goal represented by disease prevention, can play a crucial role within the health care system. That is, they can contribute to public health by providing patients with the right information on how to improve and maintain their health through disease prevention and healthy lifestyles. That is, by advising people to adopt a healthy diet, accompanied by physical activity and reduction of alcohol consumption and smoking, pharmacies can contribute to improving public health.

Economic sustainability includes the ability of the enterprise to generate income while being able to provide employment to sustain the population. The economic dimension of online pharmacies is explained in relation to managerial orientation and health orientation. As far as managerial orientation is concerned, the small number of portals regularly authorized in Italy for the online trade of drugs, particularly pharmacies, has not led to the decrease in margins caused by increasing competitiveness, which has happened for physical pharmacies (Schmidt and Pioch 2004), but it has nevertheless required the development of a managerial attitude based on creativity and innovation and oriented toward differentiating one's offerings. The role that should be played by the manager of an online pharmacy refers to the selection and motivation of human resources, layout management, warehouse and inventory management, and the proper use and management of information systems for the management control of the activities carried out consistent with the evolution of regulations and markets and the necessary skills (Ottewill, Jennings and Magirr 2000). The health orientation, on the other hand, refers to the already analyzed importance of online pharmacy not just being a distributor of drugs, but instead characterizing itself even more than the physical pharmacy for that information and counseling role that would contribute to social health care (Woodard et al. 2020). Thus, there is a need to shift from a product-oriented to a service-oriented business model and thus favor patients "receiving care" rather than "purchasing products" (Schommer, Olson, and Isetts 2019). The expansion of higher quality professional pharmacy services could be a source of competitive advantage (Singleton and Nissen 2014).

In pharmaceutical service delivery, there are several phases, including implementation and sustainability. These two phases have differences and common characteristics. The implementation phase occurs during the time between the adoption of a service and its integration, while the following definition of sustainability is proposed for pharmaceutical services: Sustainability intervenes in the design of the service as well as in its implementation, routinization and institutionalization over time to achieve and sustain the expected service outcomes (Crespo-Gonzales, Garcia-Cardenas and Benrimoj 2017). The purpose of the implementation phase is to incorporate new or evidence-based services into practice while achieving the expected benefits. The purpose of the sustainability phase, on the other hand, is to make services routine by seeking their continuous improvement, primarily through lessons learned. Some authors suggest that the sustainability phase is a concomitant phase with the implementation phase (Pluye, Potvin, and Denis 2004) and others suggest that it is independent (Moore et al. 2015) and thus begins when the implementation phase is over, being the last phase of the health services research process. The future role of all pharmacists will be to serve predominantly as service providers. The main challenge to date has been the implementation of these services. The next challenge, once implementation has occurred, is to make these services sustainable, that is, to maintain and improve patient care over time.

Results. The results achieved by our analysis show an increased attention of online pharmacies regarding sustainability issues. The growing awareness that customers and consumers have regarding sustainability, particularly environmental sustainability, has contributed greatly to this increased awareness. This awareness has grown significantly in recent years, fostered in part by the amplifying role exerted by digital media. In Italy the approach followed for online drug trading is extremely strict, given the special conditions required by the nature of a regulated market. The possibility of online sales of medicines in Italy is quite recent, having been enabled in 2014 recognizing the possibility of online sales of medicines for pharmacies, parapharmacies and pharmaceutical corners⁴. In contrast, the sale of prescription drugs is absolutely prohibited in Italy, differently than in other countries (for example in Germany), as a measure to prevent abuse and potential toxicity.

The protection towards the patient is also reflected in the penalty system, which affects the remote sale of prescription drugs, the illegal sale of drugs online, and the distribution of counterfeit drugs (Schramm 2015). A pharmacy owner interested in starting an e-commerce business must send an application for authorization to the relevant regional authority and, once obtained, must submit an application to the Ministry of Health for the granting of the National Identification Logo and the registration of the pharmacy and its website in the Ministry's portal, where the list of sites authorized for online sales can be found. The National Identification Logo constitutes a fundamental element for the sale of drugs online, because it allows the buyer to verify whether or not the pharmacy is authorized for sale⁵. All of these constraints could contribute to explain the small number of pharmacies operating online sales, which at the end of 2023, out of a total of nearly 20,000 pharmacies in Italy (to be precise, the figure is 19,997), numbered 1,088, while there were 1,446 portals regularly authorized in Italy for online drug trading. Internationally, pharmaceutical e-commerce is a fast-growing sector, although not yet comparable to other sectors of online commerce, first and foremost food. Italy has become the third largest market in Europe, behind Germany and France, Germany in which the development of pharmaceutical e-commerce is favored by the possibility of also selling prescription drugs online.

⁴ Legislative Decree No. 17 of February 19, 2014 that implemented Directive 2011/62/EU.

⁵ Consequently, it must be on all pages of the site, without any graphic changes, while it can be resized if there is a need to adapt it to the graphic requirements of the web page. On the other hand, it is not needed on web pages devoted to products, such as supplements and cosmetics, which are still saleable but different from drugs.

In Italy, the sale of drugs online is limited to drugs available in a special list that can be consulted on the AIFA website and includes OTC (Over The Counter) drugs and SOP (Senza Obbligo di Prescrizione) drugs (Cillo and Bernardini 2016). OTC drugs require no prescription, can be purchased without pharmacist intermediation, and can be freely advertised toward the public. SOP drugs also require no prescription and since May 2017 can be advertised toward the public but, limited to the point of sale, cannot be displayed over the counter because they require the pharmacist's intermediation. Therefore, it seems clear that for these drugs, online sales eliminate the pharmacist's intermediation requirement, which is necessary if one goes directly to a pharmacy. Parapharmaceutical and homeopathic products can also be purchased online, unless the manufacturer has specified that the medicine can only be sold with a prescription, a scenario in which it can only be purchased in physical outlets. Regulatory compliance then requires that the price of drugs sold online must mandatorily be the same as that charged within the pharmacy, so that physical outlets do not discriminate to the advantage of online pharmacies. However, this obligation does not affect the sale of all other products in the commercial sector, such as cosmetics or medical devices, whose online price may differ from the price charged in the pharmacy.

Research limitations. The research is at a still early stage and aims to frame the problem of sustainability for the development of online pharmacy sales preliminarily on the study of content analysis of secondary materials. The first limitation concerns the methodological approach, since subsequent steps of the research may also consider primary source data through both qualitative and quantitative surveys. In addition, the different forms of online sales are considered, focusing strictly on online pharmacies only, not considering the other portals authorized to trade drugs online, which at the end of 2023, there were 358 in Italy. In addition, our study does not deal with revealing whether the purchase of drugs is doctor-induced or results from the buyer's personal evaluations.

Managerial implications. Our study first provides useful insights into the relevance of sustainability issues for online drug sales companies. From a managerial perspective, it specifically examines the management aspects of pharmaceutical logistics arising from online sales for their impact on sustainability. All online pharmacy managers should give this phase the same importance as it is given by the buyer, especially with regard to delivery timing.

Pharmaceutical logistics, both for physical and online pharmacies, deals with the storage and distribution of medicines, active ingredients, and biological products from supplier to consumer (Pani 2015). The main features of pharmaceutical logistics can be found in maximum traceability and inventory control (a necessary preventive measure to detect batches of drugs affected by anomalies or irregularities), accurate quality control (proper storage of drugs requires the design of special areas in the warehouse designed to safely store drugs), temperature-controlled storage and special transport of products, and reduced delivery times (Ciulla 2021). Logistics is the critical success factor on which online pharmacies are being measured. If properly harnessed, it can prove to be a strategic strength for their success. Last-mile logistics refers to the last step in the logistics process that begins at the moment the goods leave the last level of the distribution network, which can be a warehouse, a sorting hub or the pharmacy itself, and ends with the ordered goods arriving at the final destination agreed upon with the buyer (Council 2017). Of all pharmaceutical logistics, this is the only stage that is truly visible to the consumer, not surprisingly, final delivery services are the most important aspect an online consumer considers after purchase. Therefore, punctuality, traceability and quality of delivery services are the drivers on which to leverage to improve the overall satisfaction level. Very often, customers demand that the order be delivered based on their needs, i.e., they would like to control and personalize the time of receipt. What makes the difference in a market of undifferentiated products, such as pharmaceuticals, is the manner in which delivery takes place. Competitors who want to remain competitive in the digital marketplace and attract new customers should develop a delivery model that includes same-day delivery and, if possible, delivery by appointment. How deliveries are handled also affects sustainability, both environmentally and economically. The operator responsible for final transportation must design deliveries by trying to unite customers living in the same area and thus reduce delivery time and also the number of stops. The customer, on the other hand, requires precise and narrow delivery windows at the expense of fewer customers served in a single delivery round. As a result, making very circumscribed and precise appointments available to the buyer generates an increase in the average distances dedicated to each order, a decrease in the number of stops per delivery round, and thus less sustainability. Among other things, the timeslots with the highest concentration of demand become those in the lunch break, second half of the afternoon and early evening. Thus, it turns out that customer density, i.e., the number of points visited by the delivery vehicle in a specific geographic area and in a specific time window, is crucial for the operator, resulting in higher or lower distribution costs and thus in different sustainability (Boyer, Prud'homme and Chung 2009).

Originality of the paper. Pharmacy takes on a significant role in terms of sustainability, for example at the social level. The phenomenon of digitization and the development of online sales also has peculiar characters due to the nature of regulation affecting the sector with its underlying purposes. An important area also for the study of economic and green sustainability is the logistical processes associated with the development of e-commerce in the pharmaceutical sector. In this area, a research agenda directed toward better understanding the impact of online pharmaceutical sales development on sustainability could involve (1) content analysis of online pharmacy and parapharmacy sites to identify issues related to sustainability; (2) case studies of pharmaceutical e-commerce and qualitative interviews with experts; (3) discussion of data emerging from the previous steps to build a set of hypotheses/models on the relationship between pharmaceutical e-commerce development and different types of sustainability; and (4) a survey directed toward testing the hypotheses they discuss.

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Track 16
Growing resilient Italian SMEs - Special Track

The resilience of family firms: exploring the role of collaborative response with supply chain partners

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Abstract

The scholarly understanding of organizational resilience has gained momentum recently, in light of the numerous adversities that firms have encountered over the last years, encompassing health, geopolitical, environmental, and economic challenges. Although family firms are renowned for their resilience, the extent to which they capitalize on their supply chain relationships to effectively respond to and recover from adversity remains underexplored. This oversight is notable given the interconnected and interdependent nature of modern supply chains, which suggest that a firm's resilience is a collective achievement, extending beyond individual efforts. Moreover, for family firms these relationships are especially crucial as they are not just strategic ties but also integral part of their socioemotional wealth (SEW) endowment. To fill this gap we develop an interpretive research based on six case studies of Italian family firms addressing multiple unanticipated adversities in the years 2021-2023. Through a process-based approach, we observe that family firms develop a collaborative response with their supply chain partners, blending co-protecting and co-adapting behaviors in the face of adversity. We also unveil the underlying determinants of this collaborative response and highlight its significant implications for the family firm, providing valuable insights into the mechanisms through which family businesses orchestrate their unique relational dynamics to enhance resilience.

Key words: family firms; supply chain; resilience; socioemotional wealth

Framing of the research. The academic debate on firm resilience has recently experienced significant growth, prompted by various global events that have severely impacted businesses over the last years. Notable examples include the Covid-19 pandemic, the financial crisis, the challenges of climate change and related natural disasters, as well as the more recent conflict in Ukraine. These occurrences have brought the concept of organizational resilience into sharp focus, as both researchers and practitioners seek to better understand how organizations can effectively withstand and recover from disruptive events (e.g. DesJardine et al., 2019; Branzei and Fathallah, 2023; Smith et al., 2023).

In this context, family firms, despite seemingly being more vulnerable to adversities due to resource constraints and the unique complexity arising from the overlap between family and business interests, are often found to exhibit superior resilience compared to non-family firms (e.g., Amann and Jassaud, 2012; Eckey and Memmel, 2023). Prior studies frequently interpret the resilience of family firms as a beneficial tendency to protect their socioemotional wealth (SEW) endowment by enduring hardships through their close family bonds and distinctive long-term orientation (e.g., Al-Tabbaa et al., 2023; Eckey and Memmel, 2023). The SEW theoretical perspective captures the impact of a family on the firm's management and strategic decisions and refers to "non-financial aspects of the firm that meet the family's affective needs, such as identity, the ability to exercise family influence, and the perpetuation of the family dynasty" (Gómez-Mejía et al., 2007, p. 106). SEW has been used as a broad theoretical framework that encompasses the non-financial benefits that family owners receive from their ownership position in the firm and that differentiate them from their non-family counterparts. The family firm's pursuit of SEW preservation is central to explaining the family's motivation to take every possible measure to survive when faced with severe adversities (Alonso dos Santos et al., 2019; Gomez-Mejia et al., 2018; Llanos-Contreras and Jabri, 2019). The unique sense of responsibility towards past generations along with the relentless commitment to pass the business to future ones make them do whatever it takes to make the firm survive in the face of adversities, as "if the firm fails to survive, SEW would be completely lost" (Gómez-Mejía et al., 2010, p. 232). The SEW preservation drives family businesses to prioritize the long-term health and well-being of the business, contributing substantially to their resilience during adverse times. Thus, the long-term orientation of family firms is considered the key differentiator that characterizes the resilience in family firm (e.g., Acquaah et al., 2011; Amann and Jaussaud, 2012; Beech et al., 2020; Calabrò et al., 2021).

This long-term extension of family priorities often manifests through socially extended priorities where the firm "manage for the long run" as well as "for the benefits of all stakeholders" (Le Breton Miller and Miller, 2022), building enduring bonds not exclusively limited to family members but extended to trusted individuals from different constituencies,

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including employees, customers, suppliers, and the local community (Gomez-Mejia et al., 2011; Gomez-Mejia et al., 2023). This approach distinguishes family firms adopting an extended SEW toward those instead focused on a restricted SEW. While family-related priorities are a common trait of family firms, some family firms conceive SEW preservation only around them (restricted SEW) like, for example, having family members dominate management and board membership regardless of qualifications, using business resources to settle family conflicts or engaging in unrequited altruism or nepotism. Conversely, other family firms include in their SEW preservation benefits that go beyond the family and include other stakeholders as well (extended SEW). The latter approach means that key priorities for family firms include “enhancing the family’s reputation with stakeholders, forming sustaining relationships with partners to increase the chances of firm survival, and investing in the community to ensure an abundance of goodwill toward the family and its business” (Miller and Le Breton Miller, 2014, 717).

Such an approach proves beneficial during challenging times. For example, Albuquerque, Koskinen, Yang, and Zhang (2020) demonstrated that family firms with strong reputations for social and environmental contributions towards their communities performed better during the last pandemic. Moreover, higher levels of loyalty from stakeholders and mutually beneficial relationships with them can create a ‘safety net’ during adversities and contributing to the firm’s overall resilience (Yilmaz et al., 2024). Despite its significance, most of empirical studies on family firm resilience under investigated this relational aspect. Even studies interested in understanding how the relational capabilities of family firms drive their resilience in times of crises have mainly focused on internal social capital (Engeset, 2020) rather than considering the importance of external relationship (Salvato et al., 2020). In other words, previous literature successfully captured the essence of restricted SEW as driver of family firms’ resilience but mostly neglected its extended side (Le Breton-Miller and Miller, 2022).

Purpose of the paper. To fill this gap, this study examines the relationships that family firms have with nonfamily stakeholders, investigating its role in generating resilience. Specifically, we aim to answer the following research question: how do family firms orchestrate their supply chain relationships to effectively respond to challenging times?. In times of unanticipated adversities, supply chains frequently face disruptions, compelling firms to search unprecedented types of resources and rely on collaborative strategies with their supply chain partners to successfully navigate through a challenging environment (Zhao et al., 2022).

Our aim is to investigate the role that relationships at the supply chain level have for family firms resilience by unveiling its dynamic evolution in times of adversity as well as their distinctive characteristics. This approach is in line with recent emphasis placed on the need to adopt a process-oriented perspective in studying family business resilience (Yilmaz et al., 2024). Although the mainstream literature on resilience in family business has clearly acknowledged that resilience is an ongoing process rather than a static feature (Brewton et al., 2010; Fisher et al., 2019), only a few recent studies have so far stood out for adopting a process-based perspective in the family business context. For example, Smith et al. (2023) explained through a representative case study the process by which individual, family, and business levels interact in developing organizational fortitude to cope with the challenges of multiple unexpected adversities. Azouz et al. (2022) examined the impact of family religiosity on firm resilience, identifying a “resistance phase” where faith and belief in destiny help families face challenges, leading to a proactive “rebound phase” where religious commitment drives resource mobilization and trust-building. Rather than solely focusing on qualities, a process-based approach allows consideration of trait, capacity, and outcome perspectives (Hartmann et al., 2022). It allows to capture the dynamic strategies characterized by learning and positively adapting in response to crises (Beech et al., 2020) that family businesses employ to navigate through challenges and disruptions (Anggadwita et al., 2022; Azouz et al., 2022; Fisher et al., 2019).

Methodology. To examine our research question, we adopted an interpretive research methodology (Mees-Buss et al., 2022; Glaser and Strauss, 1967) and conduct an in-depth analysis of six representative cases of family firms in the Italian food industry. We adopted a longitudinal research design, spanning three years from January 2021 till February 2023.

Since the beginning of 2020, the family firms faced unprecedented geopolitical, environmental, and economic challenges, necessitating crucial decisions to navigate disruptions in operations and supply chains (Wulandhari et al., 2023). During Covid-19 pandemic, food industry firms continued operating, even during lockdowns. However, they faced an unprecedented mix of spikes and falls in demand. This was especially challenging due to changing consumer habits, with preferences shifting towards certain foods and beverages over others. Besides, prolonged labor and material shortages impose them to reconsider their supply geography to diversify operational risks. While they were coping with these events, the Ukraine war presented further challenges, forcing a relocation of some supply sources (to offset geopolitical risks and find alternatives for disrupted relationships) and intensifying cost variability in energy and transportation. Furthermore, in 2023 several natural disasters disrupted the Italian food industry. In particular, a major flood in the Emilia Romagna region in May 2023 caused significant damage and disruption to farming activities, leading to repercussions at a national level. The sequence of these unforeseen events created an exceptionally challenging environment that tested the family firms’ resilience. Nonetheless, it currently offered an unprecedented context for research, providing a unique opportunity to “revisit the phenomenon” of family firm’s resilience by analysing multiple crises and enriching our interpretive model with detailed longitudinal insights, crucial for abduction (Timmermans and Tavory, 2012: 176).

Given that resilience is a process-based phenomenon, a multi-case exploratory approach is most suitable (Eisenhardt, 1989; De Massis and Kotlar, 2014), particularly with a longitudinal research design that captures “the temporal,

unfolding nature of crises” and shows patterns before and after an exogenous resilience triggering event (Doern et al., 2018, p. 403).

The selection of cases was not random and guided by three criteria. First, we identified case firms that fit the definition of family firms as provided by Chua et al. (1999). To account for the diversity among family firms (Kammerlander and Ganter, 2015), we included firms with both family and non-family CEOs, various governance structures (like family involvement in the supervisory board, advisory board, and/or family council), and different generations (from 1st to 4th generation) (Eisenhardt, 1989). Second, we chose family firms headquartered in Italy to ensure similar starting conditions and contextual factors. Third, we selected firms in the food industry that were genuinely interested in the research and could provide access to data and information over the research period. These criteria align with the standard case design approach of selecting “cases with common antecedents likely to influence the focal outcome and then studying the intervening process” (Eisenhardt, 2021, p. 149).

We focused on the food industry for three reasons: 1) most Italian companies in this sector are family businesses and play a vital role in promoting tradition and culture in the national economy; 2) given the complexity of food processing and their typically low level of vertical integration, these companies have extensive and varied supply relationships (ranging from raw material and ingredient suppliers to service providers), making them particularly relevant for our study; 3) the food industry faces unique challenges due to the perishability of food, variability in quality and availability of raw materials (Das et al, 2023), and risks associated with extreme weather induced by climate change (Zhao et al, 2023). These factors make the industry particularly vulnerable to disruptions and heavily reliant on supply chain coordination, making it an ideal context to study how family firms orchestrate their supply chain relationships to respond to and recover from disruptions.

Desk research was used to identify firms that met the criteria, resulting in a list of potential cases. We sent invitations to these firms, and if they responded positively, we arranged a follow-up call to address any questions and explain participation requirements. The final number of cases was not fixed initially but rather was shaped by theoretical considerations and practical factors like data availability. Initially, we started this research having eight cases, but two of them have been excluded after the first interview for different reasons: the first company, despite initial interest, did not provide in-depth data access; the second, while family-controlled, had no family members involved in management, making it less relevant to our study. Thus, we finalized with six cases, representative of the size, product categories, and supply chain complexity of the Italian food industry.

Results. Our research uncovers the pivotal transition that firms must navigate to showcase resilience, transitioning from a reactive phase to a proactive one. In the family business context, this evolution is marked by a shift from a prevention focus— aimed at avoiding losses in their relationships - to a promotion focus - which seeks to improve and enhance these relationships. In the face of adversity, family firms adeptly blend these two approaches by orchestrating their relationships with supply chain actors, leveraging the unique characteristics inherent to these connections. More precisely, we pinpoint three distinctive traits that foster the development of co-protective and co-adapting behaviors, leading to a collaborative response during crises. First, family firms share deep roots with most of the supply chain actors. These roots are frequently grounded in a common local origin that facilitates a deeper understanding of mutual needs, simplifies the communication and help supply chain actors better identify potential complementarities. Geographical proximity also reduces logistic complexities and improve coordination and responsiveness. Additionally, many of these relationships have inherited roots, being passed down from previous generations. The enduring nature of these bonds, coupled with a genuine sense of affection, yields multiple benefits. Family firms often receive priority treatment during challenging times, experience valuable forms of collaboration, and are shown significant levels of gratitude from their supply chain partners (which translates into lower costs and greater responsiveness).

Second, we observed that family firms tend to replicate the way they interact within the family also with external parties, creating family-like relationships that are frequently informal. Family firms and their suppliers sometimes operate even without formal contracts, valuing a handshake or one’s word holds more highly. This informal governance approach fosters spontaneous collaboration and seamless integration between the involved partners, strengthening trust and cooperation. Nonetheless, what make these relationships unique is also the family firm capability to intertwine personal and professional bonds. The human connection in these relationships is coupled with a reciprocal sense of loyalty, fostering respect and satisfaction that discourages considering offers from competitors, as sentiment shared by both parties.

Thirdly, a key facilitator of the collaborative response in the face of adversity is fast decision-making. Is not new to the literature that family firms often have centralized decision making power in a few family members and simplified decision making processes - where decisions are made at “the dinner table without the need to convene meeting”. The governance of relationships with supply chain actors mirrors this approach, often involving direct dialogue between the owners of both businesses. This owner-to-owner communication enables quicker decisions. And even in larger firms, where decision are more formalized and direct contacts between owners are limited to exceptional situations (or moments of socialization), supply chain actors feels that the family firm is really attentive and responsible in how treat their partners. The ability to make fast decisions also grants family businesses greater vision and quicker action. This happens because family firms exhibit a strong commitment to facing challenges head-on, leveraging personal responsibility and family (financial) resources. They also have privileged access to a series of information gathered through informal

contacts and can use that information to make more timely decisions. This approach has enabled family firms to find mutual solutions with supply chain actors and make rapid decisions, even amidst regulatory chaos.

Research limitations. This study focuses on the Italian food industry, thus it remains unclear whether these findings hold across different economies, industries, or regions, or whether they depend, for instance, on the cultural and economic environment in which our cases are grounded (e.g., the presence of industrial district effects cannot be excluded). A replication of our framework in other settings will increase the generalizability of our findings. Secondly, in our sample, we have only family firms in which family members are involved in management. Whilst these boundary conditions permit the development of in-depth insights regarding the research questions, they may limit insights regarding heterogeneity among family firms.

Originality of the paper. By introducing the concept of collaborative response, we contribute to the management literature by analyzing the behavioral and relational mechanisms that characterise the relationship between family businesses and their supply chain partners. Specifically, we demonstrate how these relationships adapt in the face of diverse and critical situations and how they differ from more traditional supply chain relationships when faced with disruptions. Further, this research contributes to the literature on organizational resilience by adopting a process-based approach that shows longitudinally how firms react and proactively respond to multiple adversities. Although it is conventional wisdom that resilience is a process that develops over time, studies analyzing this temporal development are still scarce. Lastly, while some studies indicate that the pursuit of SEW may be compromised when the firm performance is under hazard or, more broadly, in face of disruptive events, other studies emphasize the unique commitment it creates over the firm's long term survival and its pivotal role to explain the superior resilience of family firms. Our findings underscore its essential role in fostering unique connections of the family firm with the supply chain and establish norms of reciprocity which enable superior protection and adaptations mechanisms during adversities.

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Verso una Misura di Resilienza per le Piccole e Medie Imprese

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Abstract

La sempre maggiore frequenza e severità di shock di natura ambientale, economica, geopolitica e sanitaria, rendono centrale il concetto di resilienza organizzativa nella ricerca economico-manageriale, specialmente con riferimento alle piccole e medie imprese. Gli studi finora condotti hanno offerto una molteplicità di definizioni e concettualizzazioni della resilienza, rendendo il tema molto vago e pressoché privo di significatività sia a livello di ricerca empirica sia sul piano operativo. Per rispondere a tali criticità, il presente paper si pone l'obiettivo di concettualizzare un indice di resilienza testabile empiricamente. A tale fine, il nostro studio si propone di sviluppare un framework teorico finalizzato all'individuazione di un indice per le piccole e medie imprese, ma applicabile anche ad altre realtà produttive, che possa riflettere la duplice capacità di assorbire la volatilità derivante da shock esterni attraverso la loro struttura interna e di trasferirla ai propri stakeholders interni ed esterni.

Parole chiave: Resilienza organizzativa; PMI; Shock; Struttura interna; Trasferimento del rischio.

Inquadramento della ricerca. L'articolo si inquadra nell'ambito dell'ampio dibattito nella letteratura economico-manageriale sulla concettualizzazione e operazionalizzazione del concetto di resilienza organizzativa. La pandemia da Covid-19, le crescenti crisi climatiche, la guerra in Ucraina e il recentissimo conflitto in Medio-Oriente sono gli ultimi segnali della capacità di shock esterni di mettere alla prova la sopravvivenza delle imprese, specialmente delle piccole e medie realtà produttive (di seguito "PMI"). La sempre maggiore frequenza e severità di tali shock hanno attribuito centralità al concetto di resilienza (di seguito anche "resilienza organizzativa") che sta assumendo un ruolo pervasivo tanto nella ricerca economico-manageriale quanto nei programmi di autorità regolatrici. Sebbene il tema abbia recentemente acquisito una crescente rilevanza a livello di studi manageriali (ad es., Clément & Rivera, 2017; DesJardine et al., 2017; Limnios et al., 2014; Linnenluecke, 2017; Williams et al., 2017; Hillmann & Guenther, 2021), è stato criticato per essere vago e privo di un costrutto teorico coerente, il che lo rende poco significativo a livello di ricerca ed in termini manageriali (ad es., Amann & Jaussaud, 2012; Burnard & Bhamra, 2011; Linnenluecke, 2017).

Gli studi finora condotti si sono sviluppati lungo cinque principali filoni di ricerca che hanno esaminato la resilienza in termini di risposte organizzative a minacce esterne, affidabilità organizzativa, punti di forza dei dipendenti, adattabilità dei modelli di business o principi di progettazione che riducono le vulnerabilità e interruzioni delle catene di approvvigionamento (Linnenluecke, 2017). Nonostante le similarità, i filoni richiamati hanno concettualizzato la resilienza in maniera diversa. Nello specifico, la resilienza è stata definita come capacità, abilità, caratteristica, risultato, processo, comportamento, strategia o approccio, tipo di performance e financo come una combinazione di tutti questi elementi (Hillmann & Guenther, 2021). Inoltre, alle differenze sul piano definitorio corrispondono anche diverse modalità con cui il concetto è stato operazionalizzato, con pochi spunti per misurare la resilienza alle avversità future. Infine, il concetto è stato esaminato sotto una molteplicità di lenti teoriche, tra cui la resource-based view, la dynamic capabilities perspective, la teoria sull'organizational ambidexterity, la social-capital theory e la upper echelons theory (Su & Junge, 2023).

Sebbene la produzione scientifica sul tema della resilienza organizzativa si sia rilevata estremamente utile per una generale concettualizzazione dell'argomento, il progresso nella sua operazionalizzazione e misurazione è una delle traiettorie di ricerca che restano ancora da percorrere, alla quale si legano una molteplicità di sfide (Linnenluecke, 2017; Hillmann & Guenther, 2021). A tale riguardo, la letteratura si è posta diversi interrogativi, tutt'ora pressoché irrisolti, su come dare un contenuto di operatività al concetto di resilienza. In particolare, il dibattito si incentra sulle tecniche di misurazione, sulla presenza di un attributo di resilienza ancor prima della risposta organizzativa al verificarsi

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di certi eventi avversi, sugli strumenti più adeguati a identificare la presenza o meno della resilienza, sulla idoneità della resilienza ad essere uno strumento soggetto al controllo del management, e così via (Linnenluecke, 2017).

Finalità del paper. La finalità del presente studio è di contribuire e colmare il gap nella letteratura attraverso la concettualizzazione di un framework teorico prodromico all'individuazione di un indice di resilienza. Lo scopo di tale indice è di riflettere e testare empiricamente la capacità delle imprese, con particolare riguardo alle PMI, di assorbire internamente e trasferire alla propria rete di stakeholders interni ed esterni la volatilità risultante da shock positivi e negativi nei ricavi.

Metodologia. Il paper si fonda su un duplice approccio metodologico.

In primo luogo, detto studio si basa su un'analisi bibliometrica. La bibliometria può essere definita come una branca dell'informatica che mira a misurare l'impatto delle pubblicazioni scientifiche e il relativo livello di diffusione della conoscenza attraverso tecniche statistiche (Broadus, 1987; Cuccurullo et al., 2016; Merigó et al., 2015). Questo tipo di analisi consente ai ricercatori di esaminare una quantità maggiore di dati rispetto alle review sistematiche della letteratura, pur mantenendo un elevato livello di rigore, solidità scientifica, trasparenza e replicabilità (Dada, 2018; Rey-Martí et al., 2016). L'utilizzo di tecniche bibliometriche in questo lavoro è finalizzato all'analisi delle pubblicazioni, delle citazioni e delle fonti informative in ambito accademico per individuare le principali tendenze con riferimento alla produzione scientifica sul tema della resilienza organizzativa. Per caratterizzare i dati bibliografici, il numero di pubblicazioni, le citazioni, le citazioni per paese, gli autori, questo articolo utilizza indicatori bibliometrici. Inoltre, l'articolo esamina le strutture intellettuali che mostrano l'impatto degli articoli nella comunità scientifica, nonché le reti sociali che evidenziano la collaborazione tra autori e Paesi. Le elaborazioni statistiche sono state eseguite utilizzando Bibliometrix, un pacchetto bibliometrico di RStudio sviluppato da Aria & Cuccurullo (2017), per ottenere una mappatura scientifica della letteratura indagata, principalmente da una prospettiva concettuale. Il processo di analisi segue due fasi:

1. Raccolta dei dati;
2. Analisi bibliometrica per livelli.

La fonte primaria di dati utilizzata per il presente lavoro è la banca dati Scopus di Elsevier, solitamente annoverata tra le più complete nella disciplina del business e del management (Zupic & Čater, 2015). L'arco temporale considerato va dal 1992 al 2024. La scelta risponde alla necessità di considerare l'intervallo più ampio possibile per dare una prospettiva globale e completa alla ricerca. Infatti, il 1992 è la data a cui corrisponde la prima pubblicazione indicizzata in Scopus sulla resilienza organizzativa. La query di ricerca adottata, che coinvolge i campi titolo, abstract e parole chiave, per identificare il corpus di ricerche pertinenti (Crossan & Apaydin, 2010; Pisani et al., 2017), è presentata nella Tabella 1.

Tabella 1. Search query adottata in Scopus.

Termini di ricerca in Scopus		
Field Tag	Titolo, Abstract e Parole chiave	TITLE-ABS-KEY ("organizational resilience" OR "business resilience" OR "management resilience" OR "corporate resilience" OR "enterprise resilience" OR "resilient organization")
Boolean		AND
Area Tematica	Business, Management and Accounting, Economics, Econometrics and Finance	LIMIT-TO (SUBJAREA, "BUSI") OR LIMIT-TO (SUBJAREA, "ECON")
Boolean		AND
Linguaggio		LANGUAGE(ENGLISH)
Boolean		AND
Tipo di documento	Articolo, Review	LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "re")

Fonte. Elaborazione degli Autori.

Una gamma così ampia di parole chiave è stata ritenuta utile per garantire che la raccolta di letteratura fosse la più completa e comprensiva possibile. Per contro, le aree tematiche sono state limitate a quelle maggiormente coperte dai lavori accademici in materia di business, management, accounting, economics, econometrics e finance. Per identificare gli articoli da includere nella nostra review, abbiamo condotto una ricerca completa in più fasi (Haddaway et al., 2022), che ha portato ad un numero finale di articoli elegibili per l'analisi bibliometrica pari a 784.

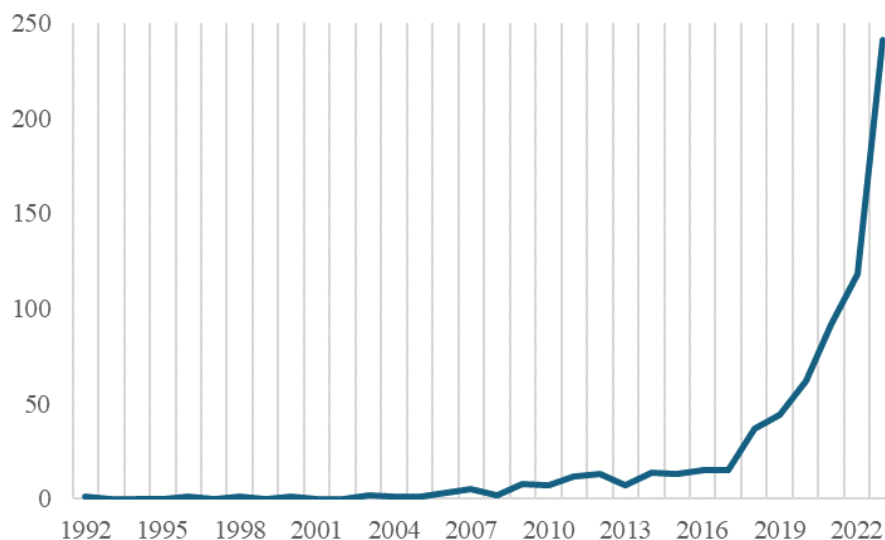
Le analisi descrittive sono state condotte a ciascun livello sul campione di articoli idonei per le analisi bibliometriche. Successivamente, le tecniche bibliometriche sono state implementate utilizzando strutture concettuali, intellettuali e sociali a ogni livello di analisi.

In secondo luogo, per ovviare ai limiti della attuale ricerca in materia, evidenziati dalla review bibliometrica, è stato adottato un approccio teorico per la modellizzazione di un indice di resilienza.

Risultati. Nel corso del loro ciclo di vita ogni impresa è inevitabilmente chiamata ad affrontare avversità che minacciano la continuità aziendale e le associate performance. Per tale ragione, gli studiosi in ambito economico-manageriale hanno iniziato a interrogarsi sulla natura e l'impatto di tali crisi e come le organizzazioni si preparano, rispondono, e superano tali avversità, esaminando al contempo la loro capacità di preservare determinati livelli di performance, di riprendersi da situazioni di crisi indotte da eventi straordinari e di prevenire l'associato rischio di fallimento (Meyer, 1982; Perrow, 2011; Roux-Dufort, 2007; Sine & David, 2003; Wan & Yiu, 2009; Williams et al., 2017). Più di recente, l'aumento del grado e numero di sfide che minacciano le organizzazioni (quali pandemie, crisi climatiche, guerre ecc.) ha determinato una maggiore attenzione degli studiosi rispetto al tema della resilienza organizzativa, specialmente con riferimento alle PMI e imprese familiari (Conz et al., 2020; Iborra et al., 2020; Casprini et al., 2022). In risposta a tali trends, molti accademici si sono interrogati sul come sviluppare la resilienza non solo in risposta alle avversità ma per mitigarle proattivamente, ovvero ancor prima che si verifichino (Van Der Vegt et al., 2015; Williams & Shepherd, 2016; Williams et al., 2017).

Le analisi descrittive della review bibliometrica condotta hanno evidenziato un aumento esponenziale della produzione scientifica in ambito economico-manageriale sul tema della resilienza organizzativa (Figura 1). Tale aumento si è realizzato a partire dalla pandemia da Covid-19 e ha riguardato specialmente Inghilterra, Stati Uniti, Australia, Canada, Italia e Germania. Tuttavia, all'aumentare dell'interesse verso il tema non è corrisposta una parimenti attenta declinazione operativa dello stesso. Nello specifico, la review ha evidenziato una scarsità di tentativi di operazionalizzazione del concetto di resilienza, con un'assenza pressoché totale di indici di misurazione.

Figura 1. Produzione scientifica annuale in materia di resilienza.



Fonte. Output di Bibliometrix su dati estratti da Scopus.

Gli studi sulla resilienza organizzativa evidenziano infatti che si tratta di un concetto multidimensionale e che include molteplici livelli di analisi che vanno da quello individuale fino a quello industriale (Hillmann & Guenther, 2021; Casprini et al., 2022). Uno degli elementi di maggiore confusione intorno a tale tema si lega all'evento in relazione al quale detta resilienza viene spiegata. A tale riguardo, Hillman & Guenther (2021) ordinano le definizioni presenti in letteratura sulla resilienza in relazione al fenomeno che origina il cambiamento, individuando diversi filoni di studio. Sebbene riteniamo che gli effetti derivanti dal fenomeno del cambiamento siano spesso sovrapponibili, ai fini del presente lavoro ci interessiamo con particolare riguardo agli studi che esaminano la resilienza in relazione a shock. Diversi studi di organizzazione in questo filone argomentano che le organizzazioni resilienti sono quelle in grado di rispondere agli shock adottando nuove routine organizzative e nuovi processi (Dewald & Bowen, 2010), di aumentare la propria produttività (Horne & Orr, 1998), di trasformare condizioni avverse in opportunità organizzative e di crescita (Kantur & Iseri-Say, 2012), di sviluppare nuove configurazioni organizzative (McCarthy et al., 2017), di sviluppare piani efficaci sia per la ripresa a breve termine che per il ripristino dell'operatività a lungo termine (Sahebjamnia et al., 2015), di mantenere rendimenti sopra la media (de Oliveira Teixeira & Werther, 2013) e infine di assorbire gli shock (Boin & van Eeten, 2013; Gimenez et al., 2017; Linnenluecke et al., 2012; McCann et al., 2009; Williams & Shepherd, 2016).

Parte degli studi citati concettualizzano detta resilienza come capacità di assorbimento degli shock fornendo però

limitati spunti di ricerca empirica. Pertanto, sulla base dei limiti della ricerca esistente in materia, ulteriormente evidenziati dalla nostra review, argomentiamo, con particolare riguardo alle PMI, che la resilienza non è riconducibile solo alla capacità di assorbimento degli shock. Al contrario, essa emerge dalla capacità delle imprese di mitigare la vulnerabilità indotta dalla propria struttura interna rispetto a shock esterni riducendo o aumentando i costi fissi e trasferendo la volatilità degli stessi shock mantenendo un margine di contribuzione costante. Di conseguenza, concettualizziamo un indice di resilienza in grado di riflettere la duplice capacità delle imprese di assorbire attraverso la propria struttura interna gli shock derivanti dal contesto esterno e di trasferirli ai propri stakeholders interni ed esterni.

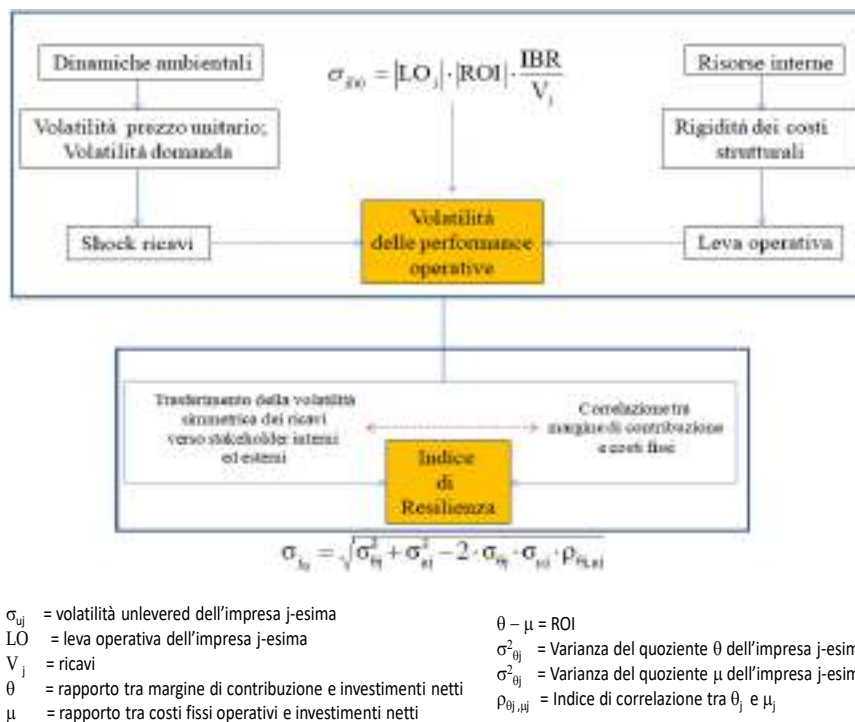
La Figura 2 riporta la concettualizzazione dell'indice di resilienza organizzativa. Da un punto di vista più strettamente operativo, riteniamo che l'indice di resilienza sia impattato in primo luogo da due driver ben distinti: le dinamiche ambientali e le risorse interne. Tali fattori agiscono sulla volatilità delle performance operative dell'impresa. L'intensità con cui shock dei ricavi si riflettono sulla volatilità di tali performance dipende in ultima istanza dall'interazione tra le due richiamate dimensioni. Nello specifico, le dinamiche ambientali determinano la volatilità del prezzo unitario e/o della domanda determinando shock positivi e/o negativi sui ricavi. L'intensità con cui tali shock impattano sulla volatilità dei risultati operativi dipende dal profilo strutturale dell'impresa. Infatti, al crescere dei costi fissi aumenta l'elasticità dell'EBIT rispetto alle fluttuazioni del mercato di sbocco (Renzi et al., 2017). Tale elasticità coincide con la leva operativa e rappresenta la componente endogena del rischio simmetrico (Renzi & Iandolo, 2017). A tale riguardo, occorre preliminarmente riferirsi alla letteratura finanziaria e distinguere tra rischio asimmetrico (o rischio puro) e simmetrico (o rischio speculativo; Deloach, 2000). Barile et al. (2022) affermano che il primo si riferisce "alla possibilità che l'attività oggetto di valutazione generi una redditività inferiore alle attese. In questa ottica, il rischio evidenzia un potenziale pericolo. Per rischio simmetrico, invece, si intende la dispersione positiva e negativa rispetto al rendimento atteso più probabile [...]. Per cui, mentre il rischio asimmetrico assume una valenza esclusivamente negativa, quello simmetrico emerge anche come opportunità, nel senso che la probabilità di subire perdite tende ad essere compensata dalla probabilità di ottenere risultati migliori rispetto alle attese" (p. 102).

L'indice di resilienza che proponiamo è dunque influenzato dall'associazione tra la volatilità delle performance operative (che si riflette nella correlazione tra il margine di contribuzione e i costi fissi) e il trasferimento della volatilità simmetrica dei ricavi verso stakeholders interni ed esterni. Le imprese resilienti sono in grado di modificare rapidamente la propria struttura interna o di trasferire il rischio agli stakeholders (o di operare in entrambi i modi). Più esplicitamente, le imprese possono trasformare la vulnerabilità indotta dall'effetto leva in resilienza riducendo o aumentando i costi fissi in caso di shock esterni e/o trasferendo la volatilità degli stessi shock mantenendo il margine di contribuzione costante. In prima analisi, la capacità dell'impresa di essere resiliente in termini di redditività operativa (ROI) trova una sintesi nella correlazione tra il margine di contribuzione e costi fissi entrambi parametrati agli investimenti netti. Detta correlazione (indicata in figura 2 come $\rho_{\theta\mu}$) – suscettibile di miglioramenti conseguenti ad approfondimenti teorici e verifiche empiriche – può essere assunta come generica proxy della resilienza d'impresa.

Diversamente dagli studi finora condotti in materia di resilienza, come anticipato, riteniamo che essa non si debba misurare soltanto in relazione alla capacità delle imprese di assorbire shock (ad es., Boin & van Eeten, 2013; Gimenez et al., 2017; Linnenluecke et al., 2012; McCann et al., 2009; Williams & Shepherd, 2016). A tale riguardo, argomentiamo che la citata correlazione $\rho_{\theta\mu}$, quale proxy della resilienza organizzativa, dipende sia dalla capacità di trasferire la volatilità simmetrica dei ricavi nei confronti di stakeholders interni ed esterni e successivamente dalla capacità di assorbimento degli shock attraverso la struttura interna (tipicamente facendo leva sui mezzi propri). Coerentemente con un'ampia letteratura in materia, riteniamo che tale comportamento sia dettato dall'obiettivo ultimo di mantenere un reddito stabile anche in periodi di shock. La letteratura si riferisce alle strategie di livellamento del reddito con la terminologia di "income smoothing", definendolo un obiettivo aziendale a cui l'azione manageriale deve informarsi (ad es., Gordon, 1964; Beidleman, 1973; Graham et al., 2005). La finalità di salvaguardia del potere di acquisto dell'azionista attraverso una sorta di immunizzazione del reddito rispetto alla volatilità della domanda e/o dei prezzi implica il parziale trasferimento di tale volatilità alla più ampia rete di stakeholders di cui l'impresa fa parte. Da alcuni recenti sviluppi empirici condotti dagli Autori e non ancora conclusosi, è emerso che l'impresa trasferisce la varianza trasversale delle vendite ai propri stakeholder interni ed esterni, mantenendo al contempo un reddito stabile e proteggendo così la ricchezza degli azionisti. Tale trasferimento si realizzerebbe attraverso dei canali di livellamento del reddito (che abbiamo definito "risk smoothing channels") la cui utilizzabilità e manovrabilità ipotizziamo che dovrebbe dipendere da aspetti oggettivi e soggettivi. Gli aspetti oggettivi si riferiscono alla flessibilità dei contratti in essere che legano gli stakeholders all'impresa, mentre quelli soggettivi alle aspettative in termini di rischio-rendimento degli stakeholders stessi rispetto all'attività dell'impresa. Distinguendo ulteriormente tra il segno degli shock (positivi o negativi) e il tipo (persistenti o transitori), ci proponiamo di esaminare l'ordine di utilizzabilità dei canali e la simmetria nelle dinamiche di condivisione della volatilità associata agli shock.

In definitiva, l'indice di resilienza proposto dipende dalla duplice capacità delle imprese di assorbire internamente gli shock derivanti dal contesto esterno e di trasferirli ai propri stakeholders interni ed esterni. Tale elaborazione, sebbene applicabile a qualsiasi tipologia di impresa, risulta ancor più idonea a spiegare la resilienza delle PMI. Le PMI risultano infatti strutturalmente più esposte agli shock. Tuttavia, non escludiamo che possano esistere PMI molto resilienti in relazione al network di stakeholders di cui fanno parte e specialmente ai rapporti con i rispettivi fornitori.

Figura 2. Framework teorico di riferimento per la definizione dell'indice di resilienza.



Fonte: Elaborazione degli Autori.

Limiti della ricerca. Il presente studio non è esente da limitazioni. In primo luogo, la ricerca della letteratura è stata condotta utilizzando il database Scopus di Elsevier. Sebbene sia incluso tra i database più completi e influenti nelle discipline economiche e manageriali, alcune pubblicazioni potrebbero non essere indicizzate all'interno dello stesso. Peraltro, trattandosi di un database costantemente aggiornato, un'analisi bibliometrica relativa a un argomento emergente può essere soggetta a variazioni sostanziali in alcuni anni. Tuttavia, tali limitazioni non influiscono sulla valutazione generale dell'attuale territorio intellettuale e delle sue implicazioni per le future aree di ricerca.

In secondo luogo, la proxy di indice di resilienza proposta rappresenta una prima misura di resilienza che necessita di successivi sviluppi teorici ed empirici.

Implicazioni manageriali. Il lavoro si presta a molteplici implicazioni manageriali. Essendo la dimensione aziendale determinante rispetto agli shock esterni, il presente lavoro presenta potenzialità manageriali soprattutto nell'ambito delle PMI. L'indice può servire come strumento per il management al fine di misurare la resilienza delle PMI a shock esterni sia proattivamente (prima che lo shock si verifichi) che reattivamente (dopo che lo shock si è verificato).

Inoltre, il paper offre diverse opportunità di ricerca future e implicazioni per accademici e manager. La comprensione dei canali di trasferimento del rischio al livello dell'impresa è un prerequisito fondamentale per adempiere alle funzioni proprie della corporate governance di monitoraggio e valutazione dei rischi. Tale approccio può consentire di gestire le relazioni con i fornitori in modo più sostenibile e duraturo. Questa analisi può anche servire a capire esplicitamente in che misura il rischio di alcuni stakeholder (tipicamente i fornitori) sia simile a quello normalmente attribuito a un investitore finanziario. Questa estensione potrebbe avere diverse prospettive accademiche e manageriali, come quelle nel campo del costo del capitale legato alle relazioni business-to-business. Un'ulteriore possibile estensione di questo lavoro potrebbe riguardare la relazione tra i processi di trasferimento del rischio e il rischio sistemico all'interno delle filiere.

Originalità del paper. Il paper si colloca nell'ambito degli studi economico-manageriali sulla resilienza organizzativa come uno dei primissimi tentativi di operationalizzazione di tale concetto, al momento poco studiato da un punto di vista empirico e pratico. Il presente studio contribuisce alla letteratura in materia di resilienza organizzativa in diversi modi.

In primo luogo, estendendo la letteratura esistente, argomentiamo che la resilienza non dipende solamente dalla capacità di assorbimento degli shock (Boin & van Eeten, 2013; Gimenez et al., 2017; Linnenluecke et al., 2012; McCann et al., 2009; Williams & Shepherd, 2016), ma anche dalla capacità delle imprese di trasferire la volatilità di detti shock alla rete di stakeholders interni ed esterni di cui fa parte.

In secondo luogo, come evidenziato da influenti review sul tema (Linnenluecke, 2017; Hillmann & Guenther, 2021), la misurazione della resilienza organizzativa è una delle traiettorie che restano da percorrere per la ricerca futura. A tale riguardo, lo studio contribuisce a detto filone di studi concettualizzando un indice di resilienza testabile empiricamente.

Infine, lo studio contribuisce agli studi in materia di rischio e accounting esaminando, attraverso l'implementazione dell'indice, il trasferimento del rischio a livello dell'impresa nei confronti degli stakeholders interni ed esterni.

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La diversità di genere nella forza lavoro come antecedente della resilienza d'impresa: evidenze preliminari da un caso studio

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Abstract

Nel corso dell'ultimo decennio, si è osservato un impegno crescente delle multinazionali nella promozione della parità di genere. Sempre più frequentemente, le multinazionali formulano politiche che includono opportunità di formazione e mentorship per le donne e collaborano con istituzioni pubbliche e organizzazioni private in iniziative volte a favorire le carriere professionali femminili. Tali sforzi sono di particolare rilievo poiché la diversità di genere nella forza lavoro può svolgere un ruolo fondamentale nel promuovere la resilienza all'interno delle strutture organizzative delle imprese multinazionali. Assumendo la prospettiva teorica dell'institutional work, questo studio – ancora in fieri – si propone di esaminare le azioni intraprese dalle multinazionali nel promuovere la diversità di genere nella forza lavoro e investigare i potenziali benefici derivanti da tali sforzi sulla resilienza organizzativa. La nostra analisi qualitativa del caso di Procter & Gamble mostra che la multinazionale si impegna in forme di practice work e boundary work per favorire la diversità di genere nella forza lavoro che, a sua volta, origina potenziali vantaggi in termini di resilienza. Questo studio contribuisce alla ricerca di international business fornendo chiarezza sull'approccio istituzionale adottato dalle multinazionali che, operando in molteplici contesti istituzionali e servendosi di collaborazioni con attori pubblici e privati, promuovono la parità di genere non solo sul luogo di lavoro, ma anche al di fuori di esso. Inoltre, approfondisce la comprensione della resilienza organizzativa esaminando gli effetti positivi della diversità di genere nel rafforzare la resilienza delle multinazionali.

Parole chiave: Diversità di genere, resilienza, imprese multinazionali, lavoro istituzionale

Inquadramento della ricerca. La parità di genere e i principi ad essa connessi rappresentano potenti motori di cambiamento organizzativo per una parte significativa del mondo aziendale, come richiesto dall'Agenda 2030 e dai suoi "Sustainable Development Goals" (SDGs; ad esempio, SDG 5 "Parità di Genere" e SDG 10 "Riduzione delle Disuguaglianze"). In tale quadro si inserisce l'interesse per le multinazionali che mostrano capacità concreta di influenzare i contesti istituzionali in cui operano. Grazie al loro ampio raggio d'azione e alla loro presenza globale, le multinazionali sono in grado di diffondere norme sulla parità di genere per contrastare la discriminazione di genere in molteplici contesti istituzionali. Inoltre, le multinazionali intraprendono iniziative volte ad eliminare gli ostacoli all'istruzione e alle opportunità economiche per le donne attraverso pratiche e politiche aziendali. Nel farlo, collaborano con molteplici attori, privati e pubblici, attraverso iniziative che sostengono l'istruzione delle donne, la salute e il loro empowerment economico, implementano pratiche volte a includere le imprese di proprietà femminile nelle loro catene di approvvigionamento, e offrono opportunità di tutoraggio e formazione per le donne al fine di farle avanzare in ruoli di leadership all'interno delle loro organizzazioni. Per raggiungere tali obiettivi, le multinazionali combinano e ricombinano risorse, conoscenze e capacità con i loro partner, svolgendo così un'attività istituzionale, influenzandone gli assetti dei paesi in cui operano (Zietsma & Lawrence, 2010).

Sebbene sia facile riconoscere che tali sforzi da parte delle multinazionali migliorino il loro benessere organizzativo e, su scala più ampia, contribuiscano all'avanzamento del benessere globale e alla promozione di comunità migliori, l'effetto che gli ambienti lavorativi caratterizzati da parità di genere possono avere sulla resilienza organizzativa sembra non essere immediatamente intellegibile (Kim, Jeong, You, & Moon, 2021). Attraverso la coltivazione di ambienti inclusivi ed equi, le multinazionali favoriscono un'atmosfera in cui i dipendenti possono realizzare appieno il loro potenziale e sfruttare la loro esperienza in modi innovativi, rafforzando così la resilienza dell'organizzazione (EY, 2021; Forbes, 2022; Ray, Baker, & Plowman, 2011). Inoltre, le iniziative volte ad emancipare le donne all'interno dei luoghi di lavoro delle multinazionali introducono una diversità di prospettive nei processi decisionali che arricchisce le capacità

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di risoluzione dei problemi e contribuisce, di conseguenza, alla resilienza organizzativa (Conz & Magnani, 2020; De Dreu & West, 2001).

Obiettivo del paper. Questa ricerca mira ad approfondire come le multinazionali favoriscano la diversità di genere nella forza lavoro e l'impatto che ciò può avere sulla resilienza organizzativa. Facendo leva sulla prospettiva teorica di institutional work (da ora in poi "lavoro istituzionale"; Lawrence, Suddaby & Leca, 2009; Zietsma & Lawrence, 2010), conduciamo un caso studio su Procter & Gamble (P&G) per indagare sui suoi sforzi nel promuovere l'uguaglianza di genere all'interno delle carriere scientifiche, tecnologiche, ingegneristiche e matematiche (STEM), e analizziamo come tali iniziative vengano intraprese attraverso un'attività istituzionale svolta dalla multinazionale e l'effetto che le stesse hanno sulla capacità resilienza dell'impresa.

Metodologia. In questo studio, effettuiamo un esame qualitativo di un caso studio (Langley & Abdallah, 2011), offrendo una descrizione dettagliata e una comprensione approfondita che sarebbe difficile ottenere attraverso campioni estesi (Golden-Biddle & Locke, 1993).

Indaghiamo il caso di P&G poiché si rivela un caso studio ideale per varie ragioni. In primo luogo, P&G è considerata la più grande azienda di beni di consumo al mondo. La sua presenza globale offre la possibilità di esaminare una vasta gamma di iniziative che coinvolgono molteplici attori che operano in contesti istituzionali diversi, consentendo un'analisi di come il lavoro istituzionale per l'empowerment delle donne nelle discipline STEM si manifesti e quali attori siano coinvolti.

In secondo luogo, P&G dimostra un forte impegno nei confronti dell'Agenda 2030 e dei suoi SDG relativi alla parità di genere (Epstein, Buhovac, & Yuthas, 2015; sito web di P&G). In particolare, P&G mostra un impegno duraturo nel creare una forza lavoro paritaria (The Guardian, 2013; USA Today Money, 2015). Le sue statistiche rivelano che il 41% dei dipendenti sono donne e il Consiglio di amministrazione è costituito dal 45% di donne (Rapporto sulla cittadinanza di P&G, 2022). Ciò permette agli autori di approfondire le strategie di genere dell'azienda relative all'empowerment delle donne, esplorando come P&G esegua un lavoro istituzionale per raggiungere gli SDG relativi alla parità di genere ed allinearsi ad obiettivi socialmente più ampi.

Infine, la disponibilità di informazioni è cruciale per guidare la decisione sulla selezione del caso e stabilisce i prerequisiti per condurre un caso ricco di informazioni (Locke, 2000; Patton, 1990). L'impegno di P&G a fornire relazioni trasparenti sugli sforzi correlati al genere è iniziato con il suo primo rapporto di sostenibilità pubblicato nel 1999, consentendo agli autori di accedere a dati completi e affidabili. Questa trasparenza è fondamentale per un'analisi basata sull'evidenza.

Per esaminare il caso di P&G, è stata raccolta un'ampia gamma di dati primari e secondari. Inizialmente, abbiamo raccolto i rapporti annuali sulla sostenibilità e sulla cittadinanza accessibili sul sito web di P&G e materiali accessibili sul sito web "P&G good everyday", costituendo la nostra fonte principale di informazioni. Inoltre, abbiamo raccolto varie interviste, video e talk disponibili sul canale YouTube che chiariscono l'approccio dell'impresa multinazionale alle iniziative di parità di genere. Successivamente, abbiamo utilizzato diverse fonti secondarie, tra cui articoli online riguardanti P&G e i suoi sforzi in materia di parità di genere, come riportato sui principali giornali (ad esempio, Financial Times).

Abbiamo focalizzato la raccolta dei dati sulle iniziative intraprese da P&G volte a promuovere la parità di genere nelle carriere STEM, con particolare attenzione a quelle progettate per l'empowerment delle donne. Si prega di guardare la Tabella 1 per un maggiore dettaglio sui dati raccolti.

Data sources	Data
Report di P&G	P&G Sustainability Reports dal 1999 al 2015 P&G Corporate Citizenship Reports dal 2016 al 2022
Publicazioni–P&G good everyday	Gender Equality: The Inspiring Voices of P&G Women Leaders (Gennaio 2024) Leading in Gender Equality: The History of Women and P&G (Giugno 2020) Rewriting What It Means to Play "Like a Girl" (Gennaio 2020)
Interviste e talk con membri di P&G raccolte su YouTube	1 intervista con Vincent Barnes P&G Global Tesco Vice President & Gender Quality Sponsor 1 intervista con Gerealdine Huse – P&G Global Tesco Account Vice-President 1 intervista con M. Suran Suranjan - P&G Asia, Middle East and Africa President 2 interviste con Carolyn Tastad – Group President, North America for P&G 1 intervista con Deanna Bass – P&G Director of Global Diversity and Inclusion 1 talk di Jeremy Hook – P&G Vice-President Product and Package Innovation 1 talk di Karl Preissner – P&G Global Diversity and Inclusion HR Leader 1 talk di Lauren Thaman - Senior Director of Communications P&G Ventures 1 talk di Tara Hogan-Charles – P&G Associate Director, Global Relations & Public Policy
Studi su P&G	(Epstein, Buhovac, & Yuthas, 2015)
Articoli di giornale	Responding to the great resignation with empathy (Financial Times, Gennaio 2023) The business case for women in leadership (Forbes, Marzo 2022) How a people-empowering culture helped P&G pull through the pandemic (EY, Gennaio 2021) Reverse mentoring: what young women can teach the old guard (Financial Times, Marzo 2019) Female CEO at P&G? 'Just a matter of time' (USA Today Money, Settembre 2015) Will we ever have more women at the top? (The Guardian, Maggio 2013)
Website	P&G website; Financial Times website; The Guardian website; United Nations website; EY website; Wikipedia website; CECH website; National Center for Science and Engineering Statistics website; OLAY website.

Risultati. Solo il 27% delle donne considera una carriera nel settore tecnologico rispetto al 62% degli uomini. E solo il 3% delle donne sceglierebbe la tecnologia come prima scelta rispetto al 15% degli uomini! (trad. nostra, sito P&G, Dicembre 2021)

P&G si affida a una forza lavoro STEM composta da ingegneri, scienziati, specialisti IT e innovatori e sta attivamente cercando di trasformare queste statistiche. Con un particolare focus sulle discipline STEM, P&G aspira ad avanzare nell'innovazione centrata sulla tecnologia coinvolgendo in modo equo donne e uomini nella sua forza lavoro. Questo progetto, oltre ad avere significative implicazioni sociali, è intrinsecamente connesso alla strategia della multinazionale. I professionisti STEM e le loro competenze possono essere di primaria importanza per il successo e la competitività delle imprese (The Guardian, 2014). Le competenze STEM guidano l'innovazione ed abilitano le imprese ad affrontare efficacemente problemi complessi e trovare soluzioni creative (Grimpe, Sofka, & Kaiser, 2023). Nel mercato altamente competitivo di oggi, l'innovazione è fondamentale per restare al passo con i tempi e soddisfare le esigenze e le richieste mutevoli dei consumatori. Da un lato, le competenze STEM forniscono alle multinazionali l'esperienza e la conoscenza necessarie per sviluppare nuovi prodotti, servizi e processi che possono creare nuove opportunità di mercato e promuovere il miglioramento continuo e la crescita. Dall'altro, i professionisti STEM sono addestrati ad analizzare criticamente i problemi, decomporli in componenti gestibili e ideare soluzioni innovative che affrontano le cause profonde anziché solo i sintomi. Questo approccio alla risoluzione dei problemi è prezioso per le multinazionali che affrontano mercati dinamici e cercano di superare sfide impreviste (Tippmann, Scott, & Mangematin, 2012).

Il fenomeno dell'ineguaglianza di genere nelle carriere STEM merita particolare attenzione (Financial Times, 2018). Secondo il National Center for Science and Engineering Statistics, fino al 2021, il 65% delle persone impiegate nelle professioni STEM negli Stati Uniti sono uomini, mentre le donne costituiscono solo il 35%. Le ragioni che spiegano la debole presenza delle donne nelle discipline STEM sono molteplici e risiedono in stereotipi sociali, percezioni errate o ambienti educativi che incentivano in modo inefficiente le discipline STEM (Correll, 2004; Wang & Degol, 2017). La disparità nelle opportunità educative aggravano ulteriormente il divario di genere nelle discipline STEM. Ragazze e donne possono incontrare ostacoli sistemici nell'accesso ad un'educazione STEM di qualità, tra cui il limitato accesso a risorse e competenze a queste connesse e la mancanza di incoraggiamento da parte di educatori e tutor. Ancora, sul posto di lavoro, le donne nelle carriere STEM spesso affrontano sfide legate alla discriminazione e ad una cultura dominata dagli uomini. La sottorappresentazione di modelli femminili nelle discipline STEM può ostacolare la fiducia delle donne nel perseguire tali carriere, così come la mancanza di diversità di genere in posizioni di leadership e ruoli decisionali ne perpetua le barriere già esistenti.

Sapendo che non c'erano molte donne nelle professioni STEM sono stata motivata da quella sfida a diventare una di quelle donne in modo che io possa aiutare altre donne. (trad. nostra, Rolanda Wilkerson, Olay Science Communications Fellow)

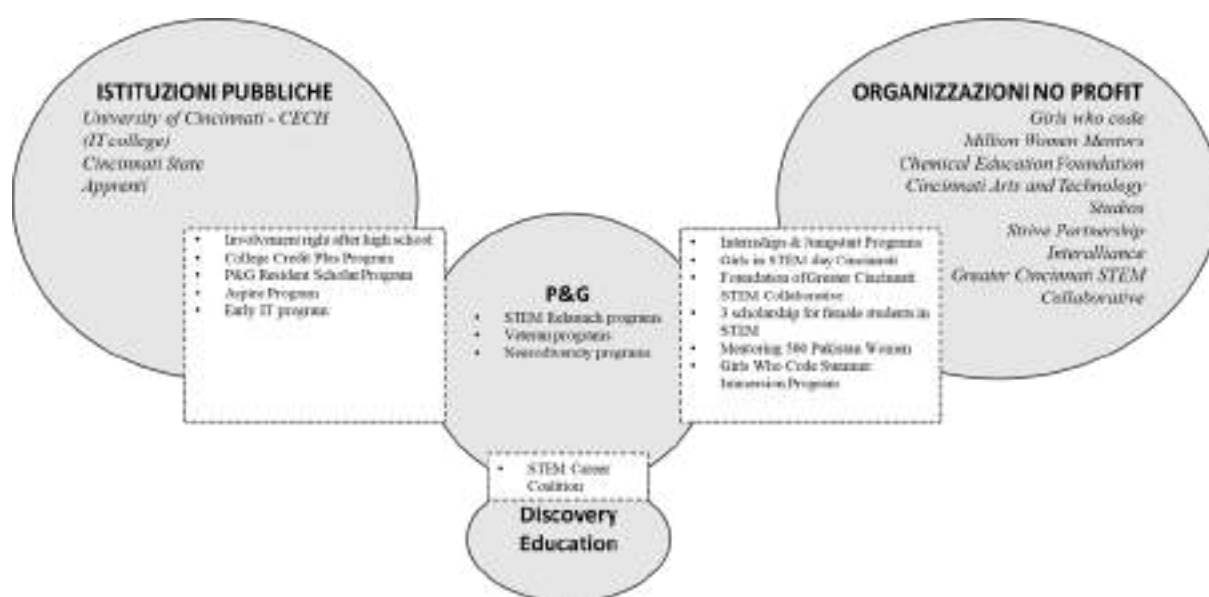
L'empowerment delle donne nelle discipline STEM da parte di P&G si traduce nella coltivazione di una diversità di genere nella sua forza lavoro. La diversità in termini di genere favorisce una ricca varietà di prospettive e idee che, a loro volta, aumentano l'innovazione e la creatività nei processi decisionali, contribuendo positivamente alla risoluzione dei problemi (Kim et al., 2021). Uomini e donne possiedono distinti insiemi di competenze, conoscenze e prospettive che portano nel luogo di lavoro dell'organizzazione, così come i loro comportamenti di genere (Akinola, Martin, & Phillips, 2017). Ad esempio, la ricerca esistente afferma che le donne tendono ad avere una maggiore attenzione ai dettagli (Stendardi, Graham, & O'Reilly, 2006) e un livello più alto di avversione al rischio rispetto ai loro colleghi maschi (Graham, Stendardi, Myers, & Graham, 2002). Tuttavia, le donne nella forza lavoro sono comunemente percepite come incarnanti caratteristiche di cooperazione, empatia e attenzione agli altri (Boulouta, 2013; Financial Times, 2023; Kacmar et al. 2011; Leslie, Snyder, & Glomb, 2013). Al contrario, gli uomini sul posto di lavoro sono usualmente riconosciuti per possedere tratti caratterizzati da un senso di agenzia, indipendenza e una propensione proattiva ad agire (Akinola et al. 2017). La rilevanza della diversità di genere nella forza lavoro si riversa nella costituzione di team di lavoro diversificati dal punto di vista del genere, capaci di mostrare migliori capacità nell'affrontare sfide complesse e formulare soluzioni creative attraverso l'utilizzo di prospettive diverse (De Dreu & West, 2001). Di conseguenza, i team di lavoro, composti da individui di diverso genere e con competenze ed esperienze differenti, dimostrano una maggiore abilità nel navigare e gestire situazioni di incertezza, mettendo in evidenza i vantaggi tangibili che la diversità di genere offre durante i momenti di crisi. Questo diventa particolarmente necessario in circostanze impreviste in cui i team di lavoro sono costretti ad affrontare compiti non routinari e la resilienza organizzativa è messa alla prova. Jeremy Hook, Vicepresidente Product and Package Innovation presso P&G, descrive cosa è accaduto quando, durante una delle prime notti di COVID-19, un ospedale ha chiesto aiuto alla multinazionale.

Così rapidamente, quella notte, abbiamo riunito due o tre persone e abbiamo iniziato a fare brainstorming. Siamo passati da una chiamata fredda di un ospedale che ci chiedeva di progettare un prototipo entro pochi giorni, alla finalizzazione del progetto entro il quinto giorno, alla produzione entro il nono giorno e alla prima spedizione entro il quattordicesimo giorno. Alla fine, abbiamo prodotto e donato con successo 1,5 milioni di schermi facciali in un brevissimo periodo di sei settimane. Riguardo al corso di laurea in STEM, l'attenzione principale è sulla formazione di scienziati e ingegneri capaci di risolvere problemi e portare la creatività in primo piano. Tuttavia, si apprende anche che gran parte di ciò che si fa non è un contributo individuale, ma parte di un più ampio sforzo di squadra. Creare un prodotto come questo richiede una molteplicità di discipline e competenze, che vanno dal legale e dall'assicurazione della qualità

all'ingegneria meccanica e chimica, tra le altre. (trad. nostra, Jeremy Hook, Vice Presidente Product and Package Innovation presso P&G).

In tali situazioni, i team si impegnano nella deliberazione, valutando potenziali alternative per affrontare le sfide in questione e partecipando attivamente a momenti di dibattito e analisi comparativa. Le diverse prospettive (ad esempio, relative al genere; Kim et al., 2021) all'interno dei team di lavoro durante queste discussioni (o talvolta il conflitto derivante dalla diversità; De Dreu & Weingart, 2003), hanno il potenziale di facilitare l'apprendimento e generare idee innovative e altamente creative, cruciali per affrontare eventi imprevisti. Di conseguenza, questa dinamica contribuisce ad avanzare l'efficacia del gruppo e a coltivare l'adattabilità e la flessibilità della multinazionale, contribuendo alla sua resilienza. P&G riconosce i vantaggi di fare affidamento su una forza lavoro altamente competente in STEM e la necessità di contrastare l'attuale disuguaglianza di genere nell'accesso alle relative carriere. Infatti, la multinazionale ha dimostrato un impegno specifico nell'empowerment delle donne nelle carriere STEM, conducendo specifiche configurazioni di lavoro istituzionale: "practice work", ovvero creare nuove pratiche per favorire la diversità di genere nella forza lavoro STEM, e "boundary work", ovvero creare nuovi confini esemplificati da iniziative come la "STEM Career Coalition". Questi, a loro volta, consentono a P&G di costruire team di lavoro bilanciati dal punto di vista del genere che mostrano effetti positivi sulla sua resilienza (Geraldine Huse, Vicepresidente Global Tesco Account di P&G). Risultati preliminari su tali configurazioni di lavoro istituzionale sono rappresentate nella Figura 1.

Figura 1: P&G e le sue partnership creano nuove pratiche e confini (rispettivamente conducono forme di practice work e boundary work) per promuovere la diversità di genere nelle STEM.



Limiti della ricerca. Come tutte le ricerche, in generale, e quelle in fieri, in particolare, anche questo scritto presenta delle limitazioni. In primo luogo, abbiamo raccolto informazioni da fonti disponibili su web, mentre la ricerca "on field" potrebbe fornire informazioni specifiche del contesto più dettagliate che consentirebbero di acquisire una comprensione più approfondita del fenomeno. Nonostante questo possa essere il metodo più appropriato per eseguire un caso studio, tale via non è sempre perseguibile per la difficoltà di accesso ai dati.

In secondo luogo, mentre in questo scritto proponiamo un esame qualitativo delle azioni formulate da una multinazionale per promuovere la parità di genere sul posto di lavoro ed esploriamo le implicazioni potenziali di questi sforzi sulla resilienza organizzativa, è altresì d'interesse corroborare ed estendere la validità della nostra argomentazione attraverso metodologie di ricerca quantitative. In particolare, si ritiene opportuno invitare gli studiosi ad esplorare le condizioni sotto le quali esiste una relazione tra la diversità di genere nella forza lavoro e la resilienza organizzativa e identificare eventuali variabili di moderazione. Le multinazionali e altre organizzazioni potrebbero sfruttare le iniziative di parità di genere come strumento strategico per costruire la resilienza in un ambiente aziendale sempre più complesso e dinamico.

Infine, il nostro caso studio fornisce una comprensione notevole di come una delle più grandi e rinomate multinazionali sia attivamente coinvolta negli sforzi di parità di genere. Tuttavia, la nostra ricerca potrebbe essere ampliata comparando altre multinazionali, anche appartenenti a settori diversi, e le loro strategie di diversità di genere, valutandone gli effetti in termini di resilienza.

Implicazioni pratiche. Le implicazioni pratiche di questo studio per i manager delle imprese multinazionali possono essere molteplici. In primo luogo, i manager dovrebbero concentrarsi sull'investimento in iniziative che promuovono attivamente lo sviluppo professionale femminile, integrandolo nei piani strategici aziendali e nelle pratiche quotidiane al fine di favorire la diversità di genere come fonte di resilienza. Questo permetterebbe alle imprese multinazionali di affrontare eventi inaspettati nei contesti istituzionali in cui operano, contribuendo così a migliorare la resilienza delle loro organizzazioni in un contesto globale sempre più complesso. In secondo luogo, questo studio suggerisce ai manager

di considerare l'importanza delle collaborazioni con enti pubblici e organizzazioni private per creare un impatto più significativo sul tessuto istituzionale, promuovendo principi di parità di genere. L'interazione con tali entità può consentire alle imprese multinazionali di accedere a risorse aggiuntive e di costruire partenariati strategici che favoriscano un cambiamento culturale più ampio e duraturo. Inoltre, attraverso queste collaborazioni, le imprese possono contribuire a modellare le politiche e le normative in materia di parità di genere a livello locale e globale, contribuendo così a creare un ambiente sociale e lavorativo più inclusivo ed equo.

Originalità del paper. In nuce, questo studio offre due principali contributi. In primo luogo, contribuiamo agli studi di international business esplorando la prospettiva teorica del lavoro istituzionale come un'area di ricerca promettente per sviluppare una conoscenza più ampia dell'azione delle multinazionali sugli assetti istituzionali nei paesi in cui operano. In particolare, forniamo un'analisi su come le multinazionali conducano il lavoro istituzionale per promuovere la parità di genere e sviluppare contesti lavorativi e società più eque. Questo evoca il ruolo delle multinazionali come "bridging institutional entrepreneurs" (Leone et al., 2023) che, collaborando con diversi attori e spaziando in vari contesti istituzionali, supportano le istituzioni verso il raggiungimento di obiettivi di sostenibilità. In tal modo, non solo offriamo preziosi approfondimenti sul più ampio tema del contributo delle multinazionali allo sviluppo sostenibile, ma esaminiamo anche in modo approfondito un insieme di SDG relativi alla parità di genere nell'istruzione e sul posto di lavoro.

In secondo luogo, estendiamo gli studi sulla resilienza organizzativa poiché sembra che la letteratura esistente non abbia ancora realizzato pienamente il potenziale della diversità di genere nella forza lavoro come fonte di resilienza organizzativa per le multinazionali. Quest'ultime possano trarre beneficio dalla costruzione di una forza lavoro che comprenda equamente dipendenti di diverso genere, ognuno capace di apportare caratteristiche e prospettive uniche sul posto di lavoro. Questa diversità ha il potenziale di rinforzare la resilienza organizzativa promuovendo l'innovazione, migliorando le capacità di risoluzione dei problemi e aumentando l'adattabilità alle dinamiche di mercato mutevoli e ai bisogni della società. Pertanto, comprendere e sfruttare i vantaggi della diversità di genere può essere fondamentale nel rafforzare la resilienza delle multinazionali in un panorama che *Jamais Cascio* definisce BANI (acronimo di Brittle, Anxious, Nonlinear, and Incomprehensible).

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ACKNOWLEDGEMENT

This work has been partially financed by the European Union - Next Generation EU and the Italian Minister of University and Research (MUR) through the project "GRIS - Growing Resilient Italian SMEs" (No. 2022X9YPZJ) within the PRIN 2022 program.

Track 17
**Perspectives on grand challenges in international
business and implications for companies**
Special Track

“Made by”: the evolution of the Country-of-Origin Effect to businesses and firms

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Abstract

The research is framed into the literature of the “country-of-origin effect”, otherwise known as “made in”, which is a wide and multidisciplinary stream of business economics and management studies.

The “country of origin effect” (COE) refers to how consumers’ perceptions and attitudes towards products can be significantly influenced by the country from which goods are originated. Existing research into COE has explored the relationship between a country’s image, the type of products, and consumers’ cultural backgrounds, indicating that these factors can profoundly affect purchasing decisions. The concept also encompasses emotional responses, suggesting that COE might not only influence cognitive evaluations but also how consumer feels about products from certain countries (i.e. Germany, Japan, China, Italy, etc.).

While the “made in” phenomenon has been widely explored with reference to a number of products and industries involved, what is still poorly investigated is the made in effect with regard to services. Current literature on COE of services focuses on consumer perceptions mainly and underlines issues related to the propensity to trust services provided by foreign firms. However, we know that services allow firms to create and capture value, as for their uniqueness and customizability. Based on the above, this paper investigates the COE of services in order to disentangle the main features of firms and their value proposition, underlying the creation of such effects.

As a result, the paper proposes a conceptual framework, which includes the antecedents of the COE of service, which attain to the firms that provide a value proposition based on services and include, for instance, customization of value proposition and the role of persons. Moreover, the research offers a conceptual contribution introducing the concept of “made by” in the business economics and management studies, thus expanding the boundaries of the concept of COE. The “made by” concept is aligned with current trends which embrace a more customized approach to firms’ production driven by customer demand in production systems that prioritize customization, where technology, product life cycles, and a more sustainable and ethical approach, where who is making the product and how it’s being made become as important as the product itself.

Key words: country of origin effect; made in; made by; value proposition; service.

Framing of the research. *The research is framed into the existing and long-lasting literature of the “country-of-origin effect” COE, which is a multidisciplinary stream of business economics and management driven by international business, firms and territorial marketing, and strategic management studies. It can determine important repercussions on the international competitiveness of products and businesses in a certain territory (Bertoli, Resciniti, 2013; Moon, Oh, 2017; Roth, Romeo, 1992; Sharma, 2011; Suh et al., 2016; Tan, Meyer, 2011).*

This phenomenon is largely communicated through the “made in” label that evokes various associations and expectations in consumer’s minds regarding product quality, reliability, and other attributes. The term “made in” indeed can signal quality, authenticity, and origin appealing to consumers’ preferences and values. However, its significance can fluctuate, as it might convey prestige and craftsmanship in one context, yet potentially evoke concerns about labor practices, environmental impact or product quality in another. This duality underscores the complexity of global consumer culture, where the interpretation of buzzwords like “made in” can be molded by narratives, economic factors, and personal belief.

In detail, COE refers to potential actors’ attitudes towards the country where a particular offer originates (Durand, 2016; Verleghe, Steenkamp, 1999). Some authors have considered as country of origin the territory that a consumer associates with a particular product or brand, regardless of where the product is actually produced (Eng et al., 2016; Jaffe, Nebenzahl, 2006; Koschate-Fischer et al., 2012). Sauer et al. (1999) differentiate between the country of design

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and the country of production or assembly of a product, and hypothesize how the interaction between these two elements affects consumers' attitudes towards the product brand.

When evaluating products for purchase, the country's image (Aaker, 1996; Girard et al., 2017; Vomberg et al., 2015) can significantly impact consumer evaluations of purchase (Fetscherin, Toncar, 2010; Hamzaoui, Merunka, 2007). Indeed, previous studies have shown that consumers tend to have a more favorable evaluation for brands that originate from economically developed countries (i.e. Batra et al., 2000, Sharma, 2011).

Other studies have explored the factors that contribute to the creation of "made in" effect, such as the characteristics of the territory, local culture, specific product qualities (Ahmed, D'Astous, 2008; Foroudi et al., 2016; Gürhan-Canli, Suh et al., 2016).

However, a review of the literature on COE reveals that while numerous studies have been conducted to understand the impact of this phenomenon on product perceptions (i.e. Jaffe, Nebenzahl, 2006; Koschate-Fischer et al., 2012; Hamzaoui, Merunka, 2007), only a limited research has examined COE in a service context. This is even though services are critical to the economies of all nations (Santos 2022; Samie, 2023).

Differences in the country of the service provider may be difficult to cover up due to service characteristics such as intangibility, perishability, heterogeneity, and inseparability (Berry et al., 1985). Therefore, the nature of services makes them less susceptible to typical effects that impact customers' evaluation of tangible products.

The reasons identified in the literature relate to the difficulty of conveying information to respondents using traditional marketing research techniques, the implicit assumption that product-related COE findings can be easily extended to any context, and the belief that purchase decisions based on product colour, style, size, feel and/or fit cannot be replicated with services (Samie, 2023).

As highlighted by Javalgi and colleagues (2001), various scholars focus on the sub-branch of COE study, which is named as Country of Service Origin (COSO), to analyze the opinion held by domestic consumers of the service associated with a specific country and the ability of service providers to provide a quality service experience (Thelen et al., 2010).

The impact of COE on the purchase decision changes according to the type of service being purchased. For instance, Pecotich et al. (1996) demonstrated that banking is impacted by COO and ethnocentrism. Bose and Ponnampalnam (2011) reported that consumers are more likely to choose movies and music from countries historically connected to India due to CO influence. Additionally, studies on medical services have shown that associated nationalities do play a role in provider selection (Harrison-Walker, 1995). In the field of international education, the preference of service providers has been linked to the COE, with students prioritising the host country of their university before choosing an institution (Morrish, Lee, 2011; Bourke, 2000).

These differences could be explained by the risk associated with each category of service. Berentzen et al. (2008) suggested that additional information is needed to induce purchase intention when the perceived risk of the service is higher. Indeed, communication, security and reliability are the most important service quality attributes for consumers when receiving an off-shored service (Thelen et al. 2010). Some studies have found that consumers' positive beliefs about the foreign industry are closely related to their satisfaction levels, which vary with location information in the case of a lesser-known service provider (Santos 2022). This result can be explained by the fact that both COSO and the type of information exchanged influence service sentiment (Lu et al., 2020). Furthermore, in the case of a risky service, additional service quality may not be able to compensate for a negative COE (Berentzen, et al., 2008).

This brief analysis of the literature on COE applied to services reveals that most studies focused on consumers' perceptions and attitudes towards services, purchasing behaviour, reactions, and sentiment towards services offshoring. Previous literature pays very little attention to the service provider point of view. In this vein, for example, Ferguson et al. (2008) analysed the strategic dilemma of American service providers with the positioning of their service offerings in other cultures, while Lu and colleagues (2019) claim that companies ought to select partners situated in countries with comparable cultural values and backgrounds to reduce the perceived risk. Moreover, several studies show a limited propensity of consumers to trust foreign service providers and their value proposition. This attitude could be due to the fact that, while it is easier for to recognize and appreciate value of foreign products, since they are made according to production methods, materials and technologies that can be better known and are somehow standardized, this could be more difficult for services. In fact, services are by definition intangible, not completely standardizable and their quality and value are related to the skills, competences, attitudes of those persons who provide the service.

Purpose of the paper. In the light of the above, the paper deals with the following research problem: since COE has different meanings in different contexts, how is it possible to extend its conceptual domain that is traditionally referred mainly to firms operating in mature businesses driven by technical processes (i.e. agriculture and manufacturing)? Is the COE more comprehensively extendable also to a broad spectrum of service businesses where, even if the outputs are intangibles, the "made in" label is more related to the culture, the lifestyle, the creativity, the entrepreneurial spirit of the business leaders and individuals of a nation?

In order to answer our research question, this research analyses the phenomenon of the "made in" mainly from the service provider's perspective rather than from the consumer's point of view, in order to enrich the literature on this topic.

We believe it is particularly important, on one hand, to identify the elements underlying the COE applied to services, in other words the element that stimulate the "made in" effect for consumers; and on the other hand, understand what firms can do in order to unleash this effect by appropriately designing their value proposition. Indeed, value proposition can be understood as the statements of benefits that are delivered by the firm to its customers (Osterwalder, Pigneur,

2010). It helps organizations to relate with their customers and therefore it serves as one of multiple steps in service design and value creation (Chandler, Lusch, 2015; Pawar et al., 2009).

In particular, we aim to create a comprehensive theoretical construct of the phenomenon, as up to now, it is missing in the literature, how service firms could design their value proposition to improve the perceived value and trustworthiness of their offer. Moreover, the research aims to provide a framework including the main attributes to characterize the value proposition of service firms, in order to make it attractive.

Methodology. To examine the country of origin effect in the service context, we utilized a qualitative research approach, specifically the single case study. This methodology is appropriate as it provides insights that facilitate the understanding of different aspects observed while still attempting to produce generalisation (Eisenhardt, 1989).

The firm selected is Compagnia della Bellezza, an Italian leading franchising company of hair salons, that is promoting the COE in a way that is completely different from the traditional and well-known made in Italy. In the Italian hair-care industry, populated by thousands of microfirms and small businesses led by figures of traditional artisans, Compagnia della Bellezza innovated the business model by introducing 30 years ago the franchising system and contributing to create a stable network of hair-designers, stylists and beauty-givers. More recently, thanks to a strong but effective rebranding, the company moved to a concept of “made by Italy”, converting the Italian hair-care industry into a sort of fashion industry where creativity, design, style are the most important pillars of the corporate strategy and of their business model.

Since the case analysis is still in progress, we collected secondary data from the company as well as from the web interviews and the company website. Moreover, we collected information from the entrepreneur in order to understand the main elements of the value proposition of the firm. Interviews to the entrepreneur, as well as to other managers of the firm will be conducted to expand data collection.

The data were analysed starting from the concept of value proposition because one of the biggest challenges in service research is identifying and communicating with relevant stakeholders (Chandler, Lusch, 2015). To this aim, value proposition plays a critical role by guiding stakeholder communications (Ballantyne et al. 2011; Kowalski 2011).

Results. Starting from the framing of the research, which is based on the field of studies about COE, we examined data collected with reference to the case study analyzed, in order to better understand the elements of a winning value proposition for service firms. Based on this analysis, we tried to create a framework that explores how value proposition is designed to ensure valuable and trustworthy services.

As it is known, creating and communicating the value proposition is a critical issue for firms aiming at positioning their product or service in target market (Ballantyne et al. 2011; Kowalski 2011; Pawar et al., 2009).

In fact, value proposition highlights the promise of benefits for customers (Chandler, Lusch, 2015; Osterwalder, Pigneur, 2010), thus facilitating the relationship between the firm and the market.

The proposed framework highlights those features characterizing mainly value proposition of service firms, which have been brought back to three main elements, showing, at the same time, differences in the design of the value proposition between manufacturing and service firms.

- From firm to person

The role of the service provider as a “person” is emerging as a key determinant of success for service companies seeking to strengthen their ‘made in’ value proposition. Service providers act as curators towards consumers by creating a friendly atmosphere (Kotler, Stigliano, 2018). Service providers act as facilitators through which the intangible aspects and essence of service are translated into tangible experiences and offerings. Their role goes beyond mere execution; it involves promoting creativity and shaping perceptions, as well as stimulating innovation acceptance. They navigate between consumer expectations, market trends, and the intrinsic qualities of the ‘made in’ label. Creativity, in this context, encompasses the ability to imagine novel solutions, anticipate consumer needs and develop persuasive narratives that enhance the appeal of the services produced (Giannopoulou et al., 2014).

- From standardization to personalization

In the service delivery, there is an opportunity to practice personalization and customization of service (Sunikka, Bragge, 2012; Bleier et al., 2018). In particular, personalization attains to a proactive behavior of service provider elaborating an offer based on the evaluation of customer needs. While customization relates to a reactive behavior aimed at meeting needs and requests of customers not previously considered in the value proposition.

Delivering experiences that resonate on a personal level can create an emotional attachment to the brand, resulting in customers becoming brand ambassadors (Bleier et al., 2018). This ability is linked to the concept of personalization, characterized by a proactive approach to tailoring services based on a deep understanding of individual consumer preferences. The integration of personalization into service delivery can strengthen the relationship with customers and foster loyalty and advocacy. Previous research has shown that consumers are more likely to adopt a personalized service because it can meet their individual needs (Guo et al., 2016; Komiak, Benbasat, 2006). Personalization techniques enable service providers to anticipate and address consumer needs before they are explicitly expressed, thereby enhancing a sense of intimacy and responsiveness to the brand. Service providers can demonstrate awareness of consumer preferences and showcase their creativity by offering personalized solutions that align seamlessly with their customers’ preferences. This proactive stance positions the ‘made in’ value proposition as synonymous with personalized excellence. Advanced technologies such as Data Analytics can provide valuable insights into how customers behave, enabling service providers to anticipate and respond to customer needs (Skålén et al., 2015). This

allows service providers to anticipate customers' needs and offer tailored solutions with accuracy and efficiency. Therefore, the deliberate incorporation of personalization is not merely a transactional tactic, but a crucial foundation upon which service companies build their value proposition.

- From product's production to service co-creation

The concept of customization represents a complementary approach to enhancing the value proposition within service companies. Customization embodies a reactive approach to service, where the emphasis is placed on actively involving the customer in the co-creation process. In the context of service firms, customization serves as a mechanism to foster a deeper engagement between service providers and consumers. The 'service-dominant' logic within marketing (Vargo, Lusch, 2004), makes explicit the notion of 'co-created value'. It holds that firms offer value propositions, that value is co-created during interactions, and that value is subjectively determined by the customer in context, e.g., when the customer uses services (Edvardsson et al. 2011; Vargo, Lusch 2008). By inviting customers to actively participate in the design and configuration of their desired offerings, service providers not only empower individuals to express their preferences but also demonstrate a commitment to fulfilling their unique requirements. This collaborative approach fosters a sense of commitment and empowerment among consumers. In the literature about services, different terms, like individualization (Riemer & Totz, 2001), profiling, one-to-one marketing, have been used over the years to describe this process in the service's context of meeting the needs of individual customers. The aim is to provide a service content that best meets the needs of the customer and adapting the way the service is delivered (Zhang and Sundar, 2019).

The proposed framework represents a first step toward theory development about "made in" in service industry. Adding the role of specific elements, i.e. persons, personalization, and customization through co-creation, to the traditional elements underlying value proposition of manufacturing firms, our framework expands the view on COE including the value of intangibles. This result allows to identify a new label, that we have named "made by", which more clearly highlights the element for a winning value proposition of services.

Thus, the evolution of "made-in" into "made by" represents a possible extension of the "country-of-origin" effect and it highlights the importance of persons, creativity, culture and not only the technical standards of goods.

This new concept represents a promising field of investigation in order to extend the applicability of the COE, focusing more on intangible dimensions such as creativity, design, culture, entrepreneurial spirit, and so on.

Research limitations. The main limitation of this study is that, with regard to the conceptual domain of the "country-of-origin" effect literature, while the "made in" concept that has a well-known list of definitional features, the "made by" is a risky construct. In fact, since it is still ongoing, it may overflow into a buzzword having different even contradictory meanings. However, the next step of this study aims to provide demonstration to the construct of "made by", through empirical analysis. In particular, we will conduct both multiple case study analysis, by interviewing entrepreneurs and managers of service firms conducted On the side of the methodology, a single-case study may be not enough to represent the large variety of firms and businesses largely falling into the "made by" concept.

Managerial implications. The paper has intriguing implications for managers of companies operating in service businesses where the culture, the lifestyle, the entrepreneurial spirit of individuals and business leaders may be distinguishing intangibles that can make the difference in the global arena. These intangibles are embedded in the firms' strategies and become also an important pillar of the organizational culture and a source of innovation.

Originality of the paper. The paper introduces for the first time the concept of "made by" in the business economics and management studies, extending the boundaries of the existing COE.

The concept of "made by" that is an evolution of the label "made in" (and of the COE) – a topic largely examined by different streams of the business economics and management literature. On one side, the "made by" concept aligns with current trends in manufacturing and agriculture systems that prioritize customization, where technology, product life cycles, and consumer demands drive a more personalized approach to production. On the other side, the "made by" can be seen as a move to a more sustainable and ethically conscious paradigm where the focus on who is making the product and how it's being made becomes as important as the product itself.

If we consider, for example Italy, The shift from "made in Italy" to "made by Italy" label represents a nuanced but significant change in branding and perception, focusing less on the iconic but too generic geographic origin of products, and more on the craftsmanship, design ethos, and creative origins behind them. Shifting to "made by" Italy moves the focus to artisans, companies, and designers originating from Italy, but highlighting their unique skills, creative designs, and innovative production processes. It suggests a completely different narrative that values the artistic and creative contributions of individuals, business leaders and brands, embodying Italian excellence in a global context.

In addition, the transition towards "made by Italy" can encompass a broader spectrum of firms, including service businesses alongside traditional manufacturing and agriculture sectors. For instance, this shift recognizes the importance of the digital economy and innovation in the global marketplace, where Italian service businesses are playing an important and significant role thanks to startups and innovative SMEs. Incorporating service businesses into the "made by Italy" concept reflects the evolving nature of global business models where services are increasingly integral to delivering value and enhancing product offerings.

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Track 18
Intelligenza artificiale nel management

From Data to Action: AI-Enhanced Prediction of Business Crises

Integrating Financial and Social Media Insights

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Abstract

In recent years, various economic and financial upheavals have underscored the need for robust mechanisms to identify and mitigate corporate crises. Particularly, there is a growing recognition of the predictive potential of non-financial information, such as data from social media. As contemporary firms extensively use them for communication, these platforms offer valuable insights into evolving crisis situations. Hence, integrating social media-derived information into crisis prediction models is becoming increasingly imperative to enhance firms' predictive capabilities. This ongoing research, part of a PRIN project, proposes a novel framework for predicting corporate crises by integrating, mainly, financial and social media data through Artificial Intelligence (AI) techniques. Grounded in the context of Italian SMEs, the research aims to enhance the accuracy and timeliness of crisis prediction models and the integration of AI algorithms enables the automated processing and analysis of extensive datasets, facilitating the identification of hidden patterns and early warning signals indicative of impending crises. While emphasizing the importance of financial stability and sustainability, the research also acknowledges the dynamic nature of social media as a source of real-time market sentiment and stakeholder engagement. Despite facing challenges such as data availability and the complexity of AI implementation, the originality of this work lies in its holistic approach, which bridges the gap between different domains to provide a comprehensive framework for crisis prediction tailored to the needs of SMEs in the Italian context.

Key words: corporate crisis; artificial intelligence; social media; insolvency prediction; machine learning.

Framing of the research. *The past few decades have been marked by significant economic and financial upheavals, including the profound impacts of events such as the 2008 financial crisis leading to a global recession, subsequent sovereign debt crises in certain European nations between 2009 and 2010, and the unprecedented challenges presented by the covid-19 pandemic in 2020. These occurrences have underscored an escalating imperative for the development of robust mechanisms aimed at proactively identifying and mitigating crises and insolvency within firms (lo Conte et al., 2023; Ahmadi et al., 2019). Altman's seminal model from 1968 represents a landmark contribution in this domain, renowned for its capacity to differentiate financially stable enterprises from those perilously close to insolvency based on pivotal financial indicators (Bottai et al., 2004; Altman et al., 1994). Nevertheless, despite subsequent enhancements, including revisions by Altman himself, the applicability of this model has remained largely confined to publicly traded manufacturing firms, revealing limitations in its adaptability to diverse organizational contexts (Austin et al., 2012; Atiya, 2001). In response to these constraints, there has been a burgeoning of innovation in insolvency prediction methodologies, leveraging advancements in algorithms and AI (Bacham & Zhao, 2017; Barboza et al., 2017). This evolution has precipitated a growing recognition of the need to incorporate an expanded array of variables, encompassing both structured financial metrics and unstructured non-financial elements, into predictive frameworks (Aguinis & Burgi-Tian, 2021; Kim, 2005; Kim et al., 2003). In particular, there is a burgeoning recognition of the potential utility of non-financial information, such as data gleaned from social media platforms (Paniagua & Sapena, 2014; Rapp, 2013). Contemporary firms extensively utilize social media channels as a means of communication with stakeholders, thereby rendering these platforms a potentially rich source of insight into evolving crisis situations (Becker et al., 2013; Antweiler & Frank, 2004).*

Consequently, there is a growing imperative to integrate social media-derived information into crisis prediction models, recognizing the increasingly pivotal role of these platforms in shaping corporate discourse and stakeholder perceptions. In fact, leveraging insights garnered from social media discourse holds promise as a complementary strategy to traditional financial metrics, offering a more holistic understanding of a firm's resilience and susceptibility to crisis

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and insolvency events (Abbodi et al., 2023; Becker et al., 2013). Moreover, by harnessing the power of algorithms and AI to analyze vast troves of social media data, firms can potentially enhance their capacity to detect early warning signs of impending crises, enabling timely and proactive intervention strategies (Becerra-Vicario et al., 2020). In essence, the convergence of innovative methodologies, including advancements in AI-driven predictive analytics and the utilization of social media-derived insights, heralds a transformative paradigm shift in the realm of crisis and insolvency prediction and management. By embracing these interdisciplinary approaches, firms can fortify their resilience and responsiveness in navigating the complex and dynamic landscape of contemporary business environments. That said, contemporary scholarly investigations elucidate the profound impact of news dissemination across various channels on the performance dynamics and trading activities within the stock market of the implicated companies (Smales, 2015). Furthermore, building upon the theoretical underpinnings of Yan et al. (2014) and leveraging the conceptual framework of the Social-Mediated Crisis Communication Model (SMCCM), scholarly inquiry delves into the intricate interplay between corporate crises and their propagation dynamics across social media platforms, alongside their perceptual resonance among consumers. This analytical endeavor seeks to discern between internal and external crises, thereby furnishing strategic guidance to enterprises regarding the optimal sourcing and dissemination strategies for crisis-related information vis-à-vis consumers and external stakeholders (Cheng, 2018). As the landscape of social media continues to evolve, the SMCCM underscores the evolving credibility attributed to information disseminated via these platforms, irrespective of its institutional provenance, thereby accentuating the need for nuanced crisis communication strategies (Smales, 2015).

In parallel, empirical investigations by Mengelkamp et al. (2023) endeavor to unveil the nuanced relationship between sentiment expressed through social media discourse and the prospective financial distress of companies, employing advanced sentiment analysis techniques. Notably, findings suggest a discernible correlation between negative sentiment expressions and impending corporate crises, thereby highlighting the potential utility of sentiment analysis as a predictive tool (Mengelkamp et al., 2023). However, these findings are juxtaposed against contradictory conclusions drawn by Khalifa et al. (2023), which challenge the purported predictive efficacy of electronic word-of-mouth (eWOM) in delineating financial performance trajectories. Other notable research endeavors have contributed to our understanding of crisis and business dynamics and their interplay with social media: for instance, a significant relationship has been identified between news sentiment and stock returns of companies pertaining to the news themselves, with an analysis of how this relationship varies over time (Rocca et al., 2021; Tetlock, 2007). The use of social media by local governments to disseminate environmental action plans to citizens has been examined, revealing divergent interests between governments and citizens on environmental issues (Rosati, 2019; Sung & Hwang, 2014), while an investigation into agenda setting across various media concerning corporate crises delineates how the thematic propagation and its effects unfold among the population, with crises categorized into four distinct phases (Kumar et al., 2020; Waseem & Rashidi, 2013). Additionally, studies on stock messages have shown their predictive ability in forecasting market volatility, with message disagreement leading to increased trading volume, particularly for small-sized firms (Elena, 2020; Eliwa et al., 2019). Lastly, media pessimism has been found to correlate with market price declines, and extreme levels of pessimism predict elevated trading volumes (Jin et al., 2014).

In the realm of predictive analytics, Ben Jabeur et al. (2023) and Carmona (2023) propose an innovative FS-XGBoost algorithm designed to forecast corporate failure. Their research underscores the evolving landscape of crisis prediction methodologies, leveraging both structured financial metrics and unstructured non-financial elements, such as sentiment analysis derived from social media discourse. On the other side, Rosati et al. (2019) delve into the dynamics between data breach incidents, social media discourse, and stock price reactions, discerning nuanced patterns across various types of firms. Their findings underscore the multifaceted interplay between online reputation management and financial performance, underscoring the need for comprehensive crisis mitigation strategies.

The phenomenon of negative publicity yielding positive effects on sales, as explored by Berger et al. (2010), adds another layer of complexity to crisis dynamics. Their research, in fact, underscores the potential of negative reviews in enhancing product awareness and consumer engagement, thereby reshaping traditional perceptions of crisis communication strategies. Lastly, Pozharliev et al. (2022) offer insights into the viral dissemination of online content, emphasizing the pivotal role of emotional valence in driving information diffusion dynamics. Their study highlights the interplay between content virality and emotional resonance, underscoring the need for nuanced content strategies in crisis communication endeavors.

That said, it is imperative to acknowledge the heterogeneity in social media adoption among enterprises, particularly within the realm of small businesses, where disparities in digital engagement persist, with some entities yet to embrace active social media participation as a strategic imperative (Pozharliev et al., 2022; Yang et al., 2015; Becker et al., 2013). Consequently, the evolving landscape of social media engenders both opportunities and challenges, necessitating a deepen understanding of its transformative potential in crisis and insolvency communication paradigms. In summary, while contemporary scholarship illuminates multifaceted dimensions of crisis dynamics and their interplay with social media, persisting empirical ambiguities underscore the imperative for continued interdisciplinary inquiry (Mainardes et al., 2020; Betti et al., 2018). By synthesizing insights from finance, communication studies, and organizational behavior, future research endeavors hold the promise of elucidating proactive and innovative strategies for preemptive crisis management, thereby fortifying organizational resilience in an increasingly volatile landscape.

Purpose of the paper. This ongoing research is part of a PRIN project involving four universities: Università della Calabria, Università degli Studi del Sannio di Benevento, Università degli Studi di Messina, and Sapienza Università di Roma. Currently, the study is in the literature review phase and is refining its methodology. Initial financial data is being collected from the AIDA database, distributed by Bureau van Dijk S.p.A., along with social media data. The main

objective of this research is to expand upon existing research by incorporating sustainability and, mainly, social media engagement variables into the predictive factors of business crises. Therefore, this study aims to develop an AI-based algorithm capable of autonomously predicting and managing corporate crises. The study addresses a gap in current methodologies by considering not only financial aspects but also factors impacting business performance at economic, market, and reputational levels. Specifically, the research targets small and medium-sized Italian enterprises with a proactive presence on social media, focusing on those experiencing insolvency. During its dedicated time-frame, the project aims to achieve the following objectives:

- to enhance the accuracy of predicting corporate financial distress in Italian SMEs;
- to identify a blend of diverse variables (financial, ESG, and web-based data) with superior predictive capability compared to traditional credit-scoring models, thereby mitigating corporate financial crises;
- to determine the lead time before a crisis by detecting early signals of potential financial distress;
- to contribute significant advancements to the scientific and technological community by pioneering AI-driven approaches for strategic decision-making and qualitative analysis;
- to develop a user-friendly platform readily accessible for assessing a firm's default probability.

Furthermore, the project incorporates two innovative elements:

- the adoption of cutting-edge machine learning techniques to process extensive datasets and variables, aiding decision-makers in forecasting corporate distress and averting crises;
- the exploration of optimal predictive models, including a generalist approach applicable across all industries and countries, as well as industry-specific and/or country-specific models, to determine the most effective strategy.

Of particular relevance to our research design are specific neural network architectures, such as recurrent neural networks (RNNs), adept at addressing regression and classification challenges in datasets with temporal dimensions, where individual inputs consist of sequential observations over time (Filletti & Grech, 2020; Charalambous et al., 2000). While literature abounds with examples showcasing the efficacy of such neural networks in signal analysis, their application in predicting corporate crises remains largely unexplored. In this scenario, the neural network discerns statistical structures within the sample, such as correlations or associations, yielding outputs that elucidate such relationships. In practice, the project will leverage these machine learning techniques to predict corporate crises, with a focus on creating a model capable of facilitating firms' decision-making by considering both recent and historical information. Moreover, the study aims to harness the properties of autoencoders to represent the market for each industry at any given time, incorporating unstructured information available from various sources. The plan is to integrate structured industry information with feedback and comments extracted from social media platforms. By applying sentiment analysis filters, feedback types can be effectively labeled and classified, enriching the autoencoder's latent representation with essential semantic dimensions. This representation, encoding information for all firms within a specific sector over different time points, will serve as input to the predictive model, aiming to enhance prediction accuracy. The resulting model will contextualize predictions within specific industries without relying on explicit pre-coded information about their evolution dynamics, leveraging perceptions gleaned from semi-structured information sources. Hence, the design and development of the model will employ an innovative methodology, combining various machine learning techniques, temporal dimension data, and encoded information, tailored to each specific analytical context. In light of this, our primary Research Question can be expressed as follows:

- “What are the implications of integrating social media engagement variables into predictive methodologies for business crises, particularly focusing on Italian SMEs with a proactive social media presence, and how can AI-driven algorithms autonomously predict and manage corporate crises and insolvency in this context?”

The articulated nature of the Research Question reflects the depth, novelty, and multidimensionality of the study. Moreover, the inclusion of AI-driven algorithms to autonomously predict and manage corporate crises and insolvency adds a layer of innovation and sophistication to the inquiry. This comprehensive approach underscores the interdisciplinary nature of the research, which integrates elements from finance, technology, and social sciences. Furthermore, the focus on SMEs, a crucial segment of the business landscape, emphasizes the practical relevance and potential impact of the study on real-world decision-making processes. In fact, the RQ embodies a robust framework for addressing contemporary challenges in corporate crisis management, offering insights that are both academically rigorous and practically applicable.

Methodology. The methodology for this ongoing research involves a meticulous process of data collection, verification, and integration to create a comprehensive framework for predicting business crises among Italian SMEs. At the outset, historical data on various financial metrics, market performance, ESG ratings, and social media engagement is gathered from diverse sources. A significant aspect of the methodology entails the collection of social media data, particularly from Twitter, which is recognized for its significance in our research objectives. This involves considering the use of APIs or data scraping techniques to gather real-time social media data. Simultaneously, access to the AIDA database is secured, and various filters are applied to narrow down the selection criteria. Manual verification is then conducted to confirm the existence of corresponding Twitter accounts for potential SME candidates. While the current

verification process is manual, efforts are directed towards potential automation through the development of AI algorithms capable of autonomously identifying companies from AIDA with Twitter accounts. However, several challenges and considerations must be addressed throughout the process. These include the limited adoption of Twitter among Italian businesses, variability in social media engagement strategies, and the integration of financial and social media data within the predictive model. In fact, initial findings suggest a passive engagement strategy among Italian SMEs on Twitter, highlighting the need for deeper analysis to extract meaningful insights.

The specific AI model to be employed for processing and analyzing the collected data is still under consideration. Various machine learning algorithms, including supervised, unsupervised, and deep learning techniques, are being evaluated to determine the most suitable approach for the research objectives. Furthermore, considerations regarding the integration of the AI model with existing methodologies and frameworks are being taken into account to ensure seamless implementation and compatibility with the research goals. As the project progresses, the chosen AI model will undergo rigorous testing and validation to assess its performance and reliability in predicting business crises and informing strategic decision-making processes. However, for social media variables, the following aspects will be considered:

- **user profile information:** this includes attributes such as name, profile description, following count, follower count, and tweet count. Analyzing user profile information provides insights into the demographics and activity levels of users interacting with SMEs. For example, variations in follower count or posts count may indicate the reach and engagement levels of SMEs, influencing their visibility and potential impact on stakeholders;
- **tweet content (for Twitter):** this encompasses the text, author details, hashtags, topics, and related metadata of tweets. Examining tweet content allows for sentiment analysis, topic modeling, and trend identification. Understanding the themes and sentiments expressed in tweets related to SMEs can reveal public perception, sentiment shifts, and emerging issues affecting their reputation and market sentiment;
- **interactions:** interactions such as follows, posts, retweets, and likes reflect user engagement and influence. Tracking interactions enables the assessment of SMEs' social media engagement strategies and their effectiveness in fostering audience engagement and brand advocacy. Additionally, analyzing patterns of interactions with SMEs' tweets can uncover influential stakeholders, potential brand ambassadors, and key opinion leaders within relevant industries.

By integrating these social media variables with financial and ESG data, the predictive model will gain a more comprehensive understanding of the factors influencing business performance and crisis susceptibility. The combination of quantitative financial metrics with qualitative social media insights then enables a holistic assessment of SMEs' resilience and vulnerability to crises, fundamental elements for our research. That said, we can also affirm that ethical considerations are paramount throughout the entire research process, particularly when dealing with sensitive social media data. As we embark on data collection and analysis, it is imperative to prioritize ethical practices to uphold user privacy and maintain data integrity. We must also mitigate biases, promote fairness, and implement robust data security measures to safeguard against unauthorized access or breaches. Ongoing monitoring and review mechanisms will be established to promptly address any ethical concerns or compliance issues that may arise, ensuring that our research upholds the highest ethical standards and respects the rights and privacy of all individuals involved.

Results. Keeping in mind the project objectives, the expected results of this research are poised to significantly advance the field of crisis prediction and strategic decision-making. Firstly, we anticipate substantial enhancements in the accuracy and reliability of forecasting corporate financial distress. By leveraging innovative machine learning techniques and integrating a diverse array of variables, the predictive model is expected to exhibit heightened efficacy in discerning early warning signals of impending financial crises. This heightened predictive capability holds promise for empowering decision-makers with timely insights to preemptively address emerging challenges and proactively mitigate financial risks. Furthermore, through meticulous data analysis and model formulation, we envisage the emergence of a robust AI-driven algorithm adept at autonomously forecasting and addressing corporate crises, with a particular emphasis on small and medium-sized Italian enterprises exhibiting proactive engagement across social media platforms. The anticipated outcomes of this research endeavor are also expected to furnish substantial contributions to scholarly discourse, inform industry best practices, and furnish policymakers with insights crucial for devising effective strategies aimed at fortifying business resilience and sustainability. Ultimately, endeavor to equip businesses with actionable insights and strategic foresight requisite for manage in a proactive way crisis situations. Initial analyses suggest that the incorporation of diverse data sources, including social media, enhances the predictive power of models, enabling more accurate identification of early warning signals and proactive crisis management strategies. Specifically, we expect to observe a discernible correlation between certain social media engagement metrics, such as sentiment analysis of tweets or user interaction patterns, and the likelihood of impending financial distress or crisis events. However, it is essential to acknowledge several limitations that may impact the availability and reliability of SMED and the utilization of AI in crisis prediction. Despite the growing importance of social media as a communication tool for businesses, there may be challenges in accessing comprehensive and high-quality data, particularly for smaller enterprises with limited online presence or irregular social media activity. This scarcity may constrain the granularity and predictive accuracy of models, necessitating careful consideration of data imputation techniques and model validation strategies. Moreover, biases inherent in training data or algorithmic decision-making processes may inadvertently perpetuate inequalities or amplify existing disparities, underscoring the importance of robust ethical frameworks and algorithmic accountability mechanisms.

Research limitations. Despite the anticipated contributions and expected outcomes, several limitations warrant acknowledgment. Firstly, the availability and quality of SMED may pose constraints on the comprehensiveness and reliability of the predictive models developed. Given the dynamic and heterogeneous nature of social media platforms, capturing and interpreting relevant signals amidst noise and variability present significant challenges. Additionally, reliance on publicly available data may overlook insights from proprietary or restricted sources, potentially limiting the depth of analysis. The interpretability and transparency of AI models also present challenges, as complex algorithms may obscure causal relationships and undermine stakeholders' trust in the predictive outcomes. Furthermore, the generalizability of findings may be restricted by the specific context and characteristics of the sample, particularly given the focus on Italian SMEs and their social media engagement patterns. Lastly, ethical considerations surrounding data privacy, algorithmic bias, and stakeholder consent necessitate careful navigation and adherence to ethical guidelines throughout the research process.

Managerial implications. The findings of this research hold significant managerial implications for SMEs. Firstly, the identification of early warning signals and predictive factors offers SMEs an opportunity to proactively address underlying issues and fortify their financial resilience. By leveraging the AI-based predictive models developed in this research, firms can monitor key indicators such as debt-equity ratios, liquidity ratios, and social media sentiment to assess their financial health and detect signs of distress in advance. Moreover, the integration of social media engagement data into the predictive framework underscores the importance of active and strategic engagement on digital platforms. Firms can leverage social media channels not only for marketing and branding purposes but also as a means of gauging customer sentiment, identifying emerging trends, and preempting potential reputational risks.

Furthermore, the development of user-friendly platforms for assessing crisis probability empowers SMEs with accessible tools for financial decision-making and risk management. By gaining insights into their likelihood of facing a financial crisis, they can allocate resources more judiciously, optimize capital structure, and implement targeted interventions to strengthen their financial position. Additionally, the availability of industry-specific predictive models enables SMEs to tailor their strategies and responses to sector-specific dynamics and challenges, enhancing the relevance and applicability of the insights derived.

Originality of the paper. The originality of this paper lies in its multifaceted approach to predicting business crises through the integration of financial, ESG and, mainly, social media data using AI. While existing literature has explored predictive models focusing solely on financial metrics or social media sentiment analysis, this study represents a novel endeavor by synthesizing diverse sources of information to enhance predictive accuracy and robustness. The inclusion of social media engagement data adds a dynamic and real-time dimension to the predictive framework, capturing evolving stakeholder perceptions and market sentiments. The application of advanced AI algorithms further distinguishes this work, allowing for the automated processing and analysis of extensive datasets to uncover hidden patterns and relationships. Additionally, the emphasis on SMEs in the Italian context adds specificity and relevance to the research, addressing a gap in the literature concerning crisis prediction models tailored to the needs of smaller Italian businesses. Overall, the originality of this paper lies in its holistic and innovative approach to crisis prediction, offering a comprehensive framework that leverages the synergies between diverse kind of data to enhance decision-making in the specific Italian context.

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When does technological innovation overlap social innovation? Conceptualizing an organizational ai-driven model

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Framing of the research. Artificial Intelligence is one of the main technologies that have been marking the Fourth Industrial Revolution, a time characterized by digital transformation. Although there is no precise agreed definition, artificial intelligence can be considered a research field "...devoted to making machines intelligent, and intelligence is that quality that enables an entity to function appropriately and with foresight in its environment (Nilsson, 2009)."

With its first appearance dating back to 1950 with Alan Turing's test and his question "Can machines think?" (Turing, 1950), AI development flourished over the following decades initially thanks to the improvement of computers' storage capacity and computational power. However, the real growth of this technology occurred only with the arrival of Big Data, which allows us to accumulate large amounts of information that exceed individual capabilities (Rialti et al., 2019). Indeed, the proliferation of data combined with new computational resources makes it easier for AI to improve (Zhuang, 2017).

Although AI has entered our daily lives at a later time, its effects have already positively disrupted many business realities. According to Eurostat, in 2021 8% of EU enterprises used AI technologies. The number increases to 28% if large EU enterprises are the only ones considered. The application of AI is visible in diverse areas, such as marketing, supply chain management and customer service. The size of the AI market is projected to grow from 207 billion US dollars in 2023 to nearly 2 trillion US dollars in 2030 (Statista).

Furthermore, the application of AI in organizations can be divided in two main fields: automation, which main function is to replace human work, allowing the relocation of the workforce, and augmentation, which focuses on enhancing human intelligence and providing support in the decision - making process (Enholm et al., 2022). A practical example of the first category is the use of machine learning algorithms in logistics and transportation that has made the coordination of the warehouses more efficient, thanks to AI - powered robots that sort and pack products reducing time - waste. This type of automation is also known as "Intelligence Automation" because it can be applied on tasks previously considered too difficult to be automated (Hassani et al., 2020). Conversely, an example of augmentation is the development of predictive M&A logit models used in the formulation of investment strategies. Findings show that prediction models built with AI can generate impressive returns, averaging up to 49% for a portfolio of a company anticipated to be acquired (Elizariyev and Fokinaed, 2023).

A MIT study supports the results previously discussed, as it has been reported that more than 80% of organizations see AI as a new strategic opportunity to compete in the market (Ransbotham et al., 2017) and it can provide significant advantages to those who enter the field earlier. In particular, this benefit is evident in the opportunity to attract early adopters and to recruit talented individuals, creating a self-reinforcing cycle and leveraging economies of scale (McWaters et al., 2018). However, in order for organizations to make the implementation of AI valuable for their businesses, it is fundamental to possess specific capabilities. These are AI - specific assets such as algorithms and training data, as they are key elements to enable value creation (Schmidt et al, 2020). Nonetheless, the success of AI in business increasingly lies in the ability of employees to be creative, have critical thinking, and be able to collaborate and communicate with technologies (Choi, 2020).

Even so, the potential of AI within the organizational context is not necessarily limited to performance and profit oriented gains. Fields such as healthcare rely on AI for improved medical image quantification, genetic data automated analysis or disease prediction, contributing in adding social value. Indeed, AI-based solutions were at the basis of the response to the global health crisis caused by COVID-19, which accelerated the application of such technologies in the medical area (Lekadir et al., 2022). Although this kind of contribution is clearer in areas where social impact is direct, such as healthcare or education, positive social outcomes can also be identified in industries which are perceived to be more profit oriented. With the right premises, the integration of such solutions can generate social value within organizations, and even beyond, whether it is a voluntary or involuntary effect.

For example, automating repetitive tasks through AI lets employees focus more on activities where human capabilities are more needed (Enholm et al., 2022; Toniolo et al., 2020), which results in reduced workload and more energy and time

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saved for more meaningful work. This may also increase sense of purpose, impacting positively how employees perceive the working environment. However, AI robots in manufacturing can improve safety and working conditions, sparing the workforce from dangerous or heavy tasks (Enholm et al., 2022; Toniolo et al., 2020). These examples show how in certain cases AI can enhance performance as well as other factors, including social ones; such considerations trigger the transition of artificial intelligence from technological innovation to social innovation in the business sphere.

In the realm of innovation, artificial intelligence can be considered a technological one, which simply refers to the introduction of novel technologies inside organizations (Damanpour & Evan, 1984). Understanding of the concept of innovation is crucial before exploring AI specifics. Innovation can be defined as “(1) a new idea, method, or device or (2) the introduction of something new” (Merriam-Webster, 2024). However, these two definitions hold two different meanings: the first one refers to an idea of outcome, while the latter focuses on process. As suggested by Kahn (2018), innovation should be considered both in its process and outcome side for a balanced view and to avoid any type of consequential shortcoming. Innovation in terms of outcome within an organization refers to the idea of introducing a novelty inside of it. These may vary in typology, as throughout the years different classifications have been developed. Examples include the distinction between process and product innovation, as well as administrative and technical innovation. Organizational AI would generally be classified as a process and technical innovation.

Instead, innovation in terms of process represents the way innovation is pursued, organized, planned, and performed. Such aspects should not be overlooked as they eventually lead to the outcomes previously mentioned.

Innovation plays a crucial role in the strategy of organizations, and it is fundamental for long-term strength and survival regardless of its origin, which can be internal or external (Damanpour & Gopalakrishnan, 1999). However, the idea of organizational innovation is often tied mainly to performance and profit-driven perspectives, with the risk of overlooking other aspects that may play a role in innovation’s whole picture. In the case of technological innovation for instance, new technologies can lead to better ways of meeting social needs, becoming drivers of social innovation (Zollo et al. 2015). The OECD (2024) defines social innovation as “the design and implementation of new solutions that imply conceptual, process, product, or organizational change, which ultimately aim to improve the welfare and wellbeing of individuals and communities”. Furthermore, the LEED Programme from the OECD (2024) adds how implementing new elements that improve the position of individuals in the workforce, such as labor market integration processes, new jobs or skills, fall under the umbrella of social innovation.

Such considerations imply how innovation inside organizations, including new technologies, are capable of leading to social innovation, and thus create added social value, both internally and externally.

Purpose of the paper. The application of AI within organizations has brought new kinds of challenges (Duane et al, 2019), as research has been for long focusing more on technological aspects and how to leverage AI, while the way technology is adopted and the main value generating mechanisms are often overlooked (Enholm et al., 2022). In this regard, social value and the impact of AI on workers and workplaces are aspects that need to be addressed and discussed about, considering its disruptive power. Debates surrounding such topics are still ongoing and highly polarized (Bankins et al., 2023). In contrast to those promoting the benefits of AI, such as improved productivity and job quality (Jarrahi, 2018; Spencer, 2018), many are highlighting the possible “harms of AI” (Acemoglu, 2021) or try to spread awareness about such aspects (Zirar, Ali & Islam, 2023). These fears are mainly related to concerns about job losses and substitution (Acemoglu, 2021; Frey & Osborne, 2017), as well as other factors such as distrust and overall negative attitude towards the technology that may negatively impact employees and their outcomes (Zirar et al, 2023).

As previously mentioned, there is a need for more discussion about the impact of AI beyond performance and profit gains. Both predominantly pessimistic and optimistic views cannot give a complete understanding of such dynamics, since AI is applied and perceived by workers in very different ways, along with different and complex socio-technical contexts in each workplace (Bankins et al., 2023). In this regard, our research aims at looking at the impact of AI in terms of social value within organizations, specifically the improvement of employees’ working conditions and workplaces. We focus on the elements that come into play inside businesses in the context of AI’s transition from technological to social innovation, by trying to understand which factors can affect the positive or negative outcome of such relation as well as the way they do it. Overall, the research revolves around the following research question:

- RQ1: Which elements inside an organization play a role in the transition of AI from technological innovation to social innovation?
- RQ2: How do these elements affect the transition of AI from technological innovation to social innovation?

With this research the authors hope to spread awareness and promote the ongoing debate surrounding the impacts of AI on organizations and how to responsibly implement such technology, by dealing with dynamics that may often be overlooked when thinking about its implementation. Our conclusions should provide managers with new insights and practices to create more value from AI implementation not only performance-wise, but also in relation to employees’ wellbeing and improved working environment. These elements in the long term are expected to also offer benefits in terms of productivity and overall organizational performance in the long term.

Methodology. The present research follows a qualitative approach, mainly consisting of an initial literature review paired with the observation of different case studies.

As mentioned, an exploratory literature review was performed to understand the state of the art of research regarding organizational AI. Among the most frequent keywords emerged from this research were “artificial intelligence”, “big data” as well as “research agenda”, the last showing how such topics are still being explored.

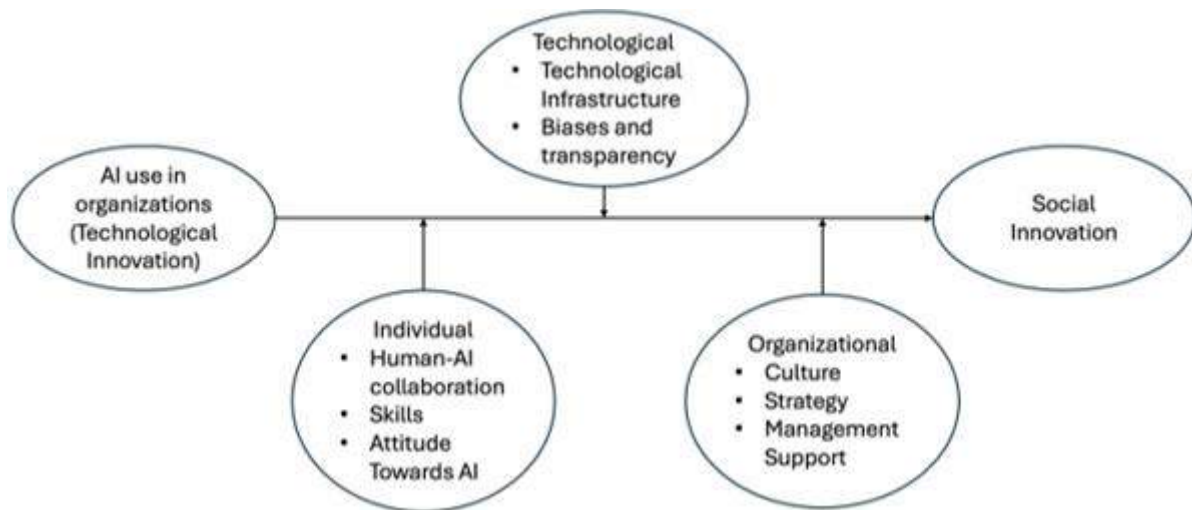
Furthermore, the findings collected were used as the foundation to narrow down the scope of the topic to social innovation and its impact on workers. The work involved dissecting the gathered information to categorize the factors and dynamics involved in organizational AI, regardless of their nature. This step was then followed by the selection of the factors considered to be influencing the social impact of AI, thus contributing to its transition to social innovation. Following an inductive approach, a comparison with several real on-the-field observations was made, in order to infer generalizations (Eisenhardt, 1989) to verify and support the preliminary considerations that came from the literature review.

Such methodology has led to the definition of four propositions which were summarized in a conceptual framework presented below, which includes three categories of factors influencing the relation between technological and social innovation in the case of AI.

Results. Three main groups of factors influencing the transition of organizational AI from technological to social innovation were defined from the literature review and the case studies observed: individual, technological, and organizational. The findings are summarized in the conceptual framework below (Fig 1), with the following propositions:

- P1. Organizational AI as a technological innovation can transition to social innovation, thus creating value.
- P2. Factors on individual level (employees) influence P1.
- P3. Technological factors influence P1.
- P4. Organizational factors influence P1.

Fig 1. The elements influencing the transition of AI in organizations from technological to social innovation.



Even before a whole organization, AI implementation impacts employees. Thus, factors at the individual level directly play a role in determining the technology's effects. From an optimistic perspective, workers and artificial intelligence can enhance each other's strengths (Henkel et al., 2020; Raisch & Krakowski, 2021). One of the examples that appear the most is the way AI can take care of most of the repetitive and routinely tasks, letting employees focus more on meaningful and "human skill demanding" activities (Shrestha, Krishna & von Krogh, 2021). These ways, as mentioned earlier, bring benefits such as more energy and time saved, reduced workloads and possibly higher worker satisfaction in the job they do. Overall, the quality of life of employees improves (Rožman, Oreški & Tominc, 2023).

To reap such value, it is necessary to pay attention to the relationship between the individual human and technology. Both research and insights from real observations have highlighted how a key component for positive outcomes in this case is a relation of human-AI collaboration (Wilson & Daugherty, 2018), which some even went as far as to call it "symbiotic" (Wilson & Daugherty, 2019). This collaboration stems from various elements that shape how humans and technology coexist and interact with each other (Bankins et al., 2023). For instance, perceived fit of AI to the individual's needs and tasks can lead to increased job satisfaction (Nguyen & Malik, 2022). Furthermore, the knowledge to understand the nature of the technology and trusting it can be beneficial, as well as having the skills to use it (Bankins et al., 2023; Chowdhury et al., 2022). Indeed, the set of skills of a worker contributes to defining this coexistence, but also the other way around. Introducing AI in organizational processes reshapes the skills valuable for a particular task; some may be transferred to AI while new ones will emerge for the sake of coexistence (Zirar et al., 2023). Additionally, this may also lead to new complete jobs born from the need of new professional figures (Morandini et al., 2023). Zirar et al. (2023) define three categories of skills needed in the new status quo of human-AI collaboration. The first one is technical skills, which are crucial as they allow individuals to work and coexist with technology. On the other hand, human skills, such as emotional intelligence and teamwork, and conceptual skills, which help in developing solutions through concepts and ideas and by visualizing AI applications in the workplace, are fundamental for creating productive work in highly digitized environments (Sowa, Przegalinska & Ciechanowski, 2021). In this regard, upskilling and reskilling are fundamental for this coexistence (Morandini et al., 2023), as well as job design (Bankins et al., 2023). Organizations and top management

should consider these elements when implementing AI as these impact the relation of individual workers with AI as well as their overall working conditions.

It is important to highlight that although these considerations can be perceived as more related to positive performance value, nevertheless social value would not be possible if all these factors mentioned are not declined in the right way. Furthermore, and most importantly, they contribute to determining the overall attitude of workers towards AI. Along with what has been said so far, attitude towards AI can be influenced by a series of perceptions and fears related to the nature of the technology. Literature and real observations have shown how workers may worry about being replaced in the future or AI making their skills eventually obsolete (Bankins et al., 2023; Zizar et al., 2023). This damages their attitudes towards AI as well as their working conditions. Additionally, such fears can lead to issues such as reduced organizational commitment, job insecurity, turnover intentions, burnout and other compromising consequences (Zizar et al., 2023). These threats can be countered by managing correctly the elements mentioned above, as well as through organizational efforts to make employees aware of their strategy and through training, upskilling and reskilling programs to facilitate technology adoption (Wilson & Daugherty, 2019; Bankins et al., 2023).

As a second proposition, the organizational environment plays a crucial role in bringing workers closer to new technologies and stimulating their use. Indeed, as analyzed in case studies, work environments characterized by a supportive and open-to-innovation climate are those where it is easier to encourage and foster automation processes, thanks to the ability of managers to smooth workers' fear of being replaced. Furthermore, organizations that provide employees with the necessary tools to increase their knowledge of implemented technologies and to reduce the feeling of indifference towards them are able to reduce anxiety and the sense of oppression. Additionally, by promoting training, upskilling and reskilling programs, especially for more operational workers, they can help managers in identifying possible areas or processes for intervention, especially after gaining familiarity with technologies; indeed, since managers cover a more organizational role, they could overlook potential time-consuming elements. In this way, workers will be stimulated to experience technology firsthand and with no more anxiety (Verma & Singh, 2022). Job design should also balance the responsibilities assigned between workers and AI applications when adopting technology, as it determines the experience with AI (Zihar et al. 2023). With optimal balance the work climate nurtures open-mindedness to change rather than fear and establishes a symbiotic partnership to augment each other's strengths. Organizations and management must be transparent about AI adoption and explain the strategy for AI implementation to workers. Thus, the environment plays a crucial role, but equally necessary is the support of managers in the digital transition (Alsheibani et al., 2020). Top managers must not only create an environment to spread technology, but also support integration with enough financial support to enable the purchase of software usage licenses and sustain the costs of training courses and updated devices. As analyzed in our examples, we can claim that top management and the workforce must mutually support each other to see significant social changes at the workplace.

The third and last proposition deals with technological factors. Firstly, the underlying infrastructure of AI necessitates substantial computational power (Baier et al., 2019), without which advancement would not be possible. Furthermore, AI is becoming an infrastructure upon which the development of future services and products will depend on (Robbins & Wynsberghe, 2022). Thus, these capabilities are required to properly integrate AI into operations, along with cloud-based solutions, like Google Cloud or AWS, as having such resources on site is not convenient for their dimensions. AI within algorithmic management practices in case of platform-based work also has a predominant negative effect on workers, as it can lead to feelings of isolation and alienation. This happens when workers operate through algorithms instead of managers and traditional human interaction.

However, workers also recognize higher flexibility, greater ease in performing tasks and better outcomes, also based on the way AI is integrated and the technological infrastructure underneath the platform used.

Prior research also indicates how employees are more inclined to engage with AI when they trust it. Indeed, a significant challenge facing AI adoption is the opacity of algorithms, which make it difficult to identify and fix errors (Ashta & Herrmann, 2021) and increases distrust. These AI models lacking transparency in decision-making processes are commonly referred to as 'black box' systems. Promoting transparent operations fosters social value when it increases workers' trust in AI by showcasing its explainability and effectiveness, thereby increasing the likelihood of delegating tasks to technology and benefiting from it.

Research limitations. This study shows what are the main factors that allow us to explain AI from a technological to a social innovation by analyzing the factors playing a role in technology integration in companies. However, the proposed study suffers from some limitations including the generalizability of the results, as a limited sample of case studies was considered, and only analyzing the point of view of workers.

Future research could analyze a larger sample than the one proposed in this analysis and explore the phenomenon from a quantitative point of view, focusing not only on large companies but also going to observe what happens to those employed in SMEs. In addition, the possibility of extending the research outside the Italian territory could bring out different results from those proposed.

Managerial implications. Through this study, it was possible to highlight the important social role AI may play when integrated into organizations. The results clearly show how the three factors under analysis (individual, technological, and organizational), can strongly influence the impact of AI from a social point of view, both positively and negatively. Companies should invest more in training programs, in order to stimulate and foster skills necessary to improve AI-human collaboration as well as to counter possible fears of job substitution from employees. Furthermore, job design can be another frontier where managers could enhance the social potential of AI by looking at the characteristics at individual level that could contribute to shaping the relationship between human and machine. Finally, technological elements are

crucial not only for performance gains and correct AI implementation, but also for the improvement of workers' job conditions thanks to AI.

Originality of the paper. This research aims at exploring the ongoing debate about AI's impact on organizations. The methodology includes case studies based on real observations as well as a review of existing literature. The originality of the paper consists in a novel way of observing this phenomenon, specifically from a point of view focused on social value, which in this case deals with the way the technology can contribute to improving workers' life and workplaces.

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Exploring the impact of Artificial Intelligence on Vocational Education and Training (VET)

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Abstract

Over the last decades, Artificial Intelligence (AI) has changed the way people do things as humans in both social and economic contexts. AI is still opening new development opportunities for several industries and sectors, boosting a paradigmatic shift in their typical processes and practices. This disruptive technology is also deeply reshaping education both at teaching and learning level. Drawing on these considerations, this paper aims at contributing to the growing research on the topic focusing on a specific education domain, the Vocational Education and Training (VET) investigating if and how AI application is reshaping this domain, enhancing the educational experience and consequently the related workplace. In doing so, an empirical research approach has been implemented, based on primary data gathered among VET trainers. The data gathering phase is still ongoing. fsQCA will be used to analyse the data. Some preliminary findings confirm that there is a growing demand for AI-oriented training in VET education. This suggests a growing recognition of the importance of AI skills and the desire to incorporate AI-related training into their programs and operations. This paper offers original contributions both to theory and practice defining the current and future practice that AI can improve, offering to professionals better and more collaborative educational services for enhancing their knowledge and competencies, and in doing so the overall workplace. However, it doesn't come without some limits. In particular, this study is somewhat limited by specificity of the analyzed domain and by the national scope of the analysis, which constrains findings generalizability.

Key words: Artificial Intelligence; Education; Vocational Education and Training (VET); workplace; wellbeing.

Framing of the research: Towards digital transformation of Vocational Education and Training (VET).

Education, as many other socio-economic domains, is undergoing a major transformation, driven by rapid technology development and their massive impact on society (Cookson, 2002; Gkrimpizi et al., 2023). This unprecedented change is reshaping the inner dynamics of this complex system, which is populated by several actors (institutions, teachers, learners, third-party companies, families, etc.), who interact at different levels (cognitive, intrapersonal, and interpersonal) and with a different commitment, contributing to shape a unique learning experience (Jacobson et al., 2016; Nasir et al., 2022). The role and influence of advanced technologies and of digital transformation – or the paradigmatic change of a huge amount of social and economic processes mediated by innovative digital technologies (Schallmo et al., 2018) – on education practice and management are globally attracting the interest of policymakers, scholars, and practitioners (Li and Wang, 2020). In education, digital transformation “involves rethinking the teaching and learning processes for an audience of digital natives, considering the practical aspects of the digital transformation, through knowledge and technical skills, and being digital, through the incorporation of skill, mindset, and digital attitudes” (Oliveira and de Souza, 2022, p.285). This implies that this pervasive phenomenon is pushing education experts to rethink both teaching and learning approaches to make them able to respond to the emergent learning needs developing, testing, and implementing new educational approaches and solutions. In this vein, some scholars investigating the impact of Industry 4.0 technologies on education have proposed the concept of Education 4.0, which is based on the “transformation of learning methods and innovative didactic teaching, with intelligent teaching tools and sustainable infrastructures complemented by emerging educational technologies” (Masdoki and Din, 2021, p.3). However, Education 4.0 and the concrete application of its advanced technologies (e.g., Internet of Things, Augmented

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Reality, AI, etc.) to real teaching and learning context is still yet to come. This is mainly due to a certain resistance to change that still affect education due to a general fear about technologies negative potential to replace traditional in-person educational activities (Bonnes et al., 2020), which influenced by some different factors such as 1) educators lack of technological confidence and expertise, 2) educators and learners lack of understanding of digital transformation potential benefit for education at all, 3) educators resistance to rethink traditional pedagogical and educational approaches, and 4) a general resistance to change of both educators and learners (Aditya et al., 2022). To overcome these persisting barriers some policy and managerial actions are needed to stimulate and promote, among others, literacy programs, for example, in partnership with industry partners and technology providers (Miranda et al., 2020) able to support a better understanding of how technologies can complement traditional education opening to new interactive and personalized learning scenarios, based on the intertwining of affective, cognitive, social, and technological settings (Gegenfurtner et al., 2020).

A certain resistance to digital transformation is also affecting a specific sub-sector of education, the Vocational Education and Training (VET), which has been differently defined and approached over time and all around the world (Anderson et al., 2020). However, in 1984 UNESCO defined it as those processes related to the ability of practical knowledge, skills, attitudes, values that are related to various occupations, while in 1997 Psacharopoulos generally approached it as a “favored instrument of social engineering for achieving a series of objectives, such as accelerating economic growth, reducing youth unemployment” (p.385). In 2004, UNESCO advanced the prior definition considering VET as based on those characteristics that are typical of the education process and which link to general education processes, scientific and technological approaches useful to gain practical skills, attitudes, and knowledge related to the occupations in various sectors. This implies that VET is central to national socio-economic development, offering potential benefits both for companies and people (Duhu and Mbaga, 2016), contributing to companies competitive and innovativeness thanks to human resources ability in acquiring and using always updated and innovative knowledge and skills essential to face the emerging challenges and changes typical of current globalized markets (Li and Pilz, 2023). Even though the strategic potential of VET, it doesn’t come without challenges and issues to be solved, such as 1) the low motivation to participate in these educational initiatives, 2) the resistance of companies (especially the smallest ones) in organizing such initiatives, 3) the lack of personalized education programs and the related methods, and 4) a certain resistance to using digital tools (Anselmann et al., 2022; Yang et al., 2023). These issues are influenced also by the disruptive changes that digital transformation is generating in workplaces and in the job market. Moreover, VET educators and learners as well as companies are often unaware about the potential of digital technologies in offering highly customized education experiences and in improving their quality, attractiveness, and adaptability (Yang et al., 2023). Focusing on the last dimension, it is worth noting that adaptability is an essential feature for VET, because it contributes to make its programs and interventions able to quickly change and adapt to the ever-changing labor market’s need. In doing so, smart digital technologies can offer the right support to trainers and companies in innovating and empowering teaching and evaluation methods as well as in updating the related educational equipment and environment (Haasler, 2020). In fact, overcoming technological resistance in VET could contribute to offer more efficient and effective educational experiences, based on the ongoing improvement of pedagogical approaches, also thanks the use of data analytics to better understand participants’ educational needs, learning abilities, and behavior to inform personalized learning paths (Muñoz et al., 2022; Haleem et al., 2022).

Drawing on previous considerations, scholars and practitioners are starting to explore the potential of advanced technologies and of Artificial Intelligence on VET enhancement, focusing the need for better recognizing the current barriers and challenges to its implementation.

Purpose of the paper: understanding the potential of AI for improving Vocational Education and Training.

Over the last two decades, the so-called Artificial Intelligence in Education (AIEd) has been at the forefront of policymakers, researchers, and practitioners, who have contributed to its long-lasting development (Roll and Wylie, 2016). AIEd is aimed at offering personalized instruction, and intelligent student assessment, based on collaborative, automated, and predictive practice (Hwang et al., 2020). Research has identified three main trends of AIEd, 1) training with the help of AI, 2) scientific and practical research of AI, and 3) training qualified specialists to work with AI in education (Gegenfurtner et al., 2020). It follows that even though AIEd also impact VET, research on the topic is still limited (Chen et al., 2022). Drawing on these considerations, this study is intended to better understand if and how VET actors (teachers, learners, and companies) can recognize and accept the potential of AI on training practices.

AI intended as “an emerging technical science used to simulate and extend human intelligence theory, methods, technologies and application systems” (Li and Wang, 2020, p.591), can boost technological and pedagogical innovations in VET, based on the spread of different applications such as intelligent tutors for content delivery, feedback provision, and progress supervision (Bayne et al., 2020). However, as for other technologies also AI algorithms has caused a certain resistance among VET actors. In fact, the potential of what scholars conceptualized as VET4.0 or those “new concepts, trends, and goals for future VET reform and innovation in the context of digitalization” (Yang et al., 2023, p. 3846) is not so clear to VET actors. It follows that AI implementation in VET scenarios should be supported by specific and new educational and learning theories, to inform and inspire their implementation. This will support VET actors in understanding the adaptive potential that AI can have on education experiences, being able to timely adapt training curricula to the fast changes of demanded skills or to learners’ personal and professional traits (Guan et al., 2020). This implies that a better acceptance of AI in VET scenarios should be promoted supporting actors in recognizing their needs, in overcoming social and psychological barriers to technologies use, and in offering them blended online-offline learning environment, designed for offering highly personalized education experiences (Chen et al., 2022). This could enhance

their dynamism and adaptability to the changes occurring in corporate organization, labor markets, and even in society, upscaling the existing curricula and create new specialties or professional specializations (Mahmut, 2019). However, it is worth noting that these hybrid, intelligent, and technology-based learning environments can be developed only when they are informed to current VET teaching and learning issues and needs (Hwang et al., 2020) and the related actors are open and even willing to use AI applications, such as natural language processing, artificial neural networks, machine learning, deep learning, and genetic algorithms (Ouyang et al., 2022).

Research question and conceptual model. The research aims to analyze the impact that the use of AI can have on VET education (impact). Our research question is as follows.

RQ: How much AI technologies impact on VET education of the future?

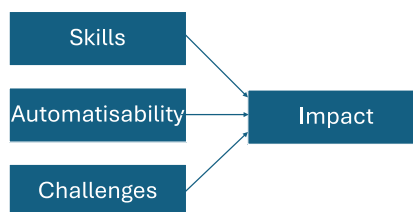
To answer this question, we have analyzed the impact with reference to the following antecedents: 1) degree of automatability/AI of the education tasks (automatability); 2) level of AI-related skills and knowledge already present among the professionals to be trained (skills); 3) perceived difficulty in the change towards greater automation/AI in VET education (challenges). Table 1 summarizes and describes each of the items involved in the conceptual framework (see Figure 1).

Table 1. Questionnaire items

Items	Description	Details
Skills	Current and emerging training needs in relation to the use of AI in the workplace	VET education is expected to need a reconfiguration according to the emerging training needs stemming from the AI implementation in the workplaces
Automatability	The most automated tasks in the context of AI-oriented training	Specific training activities that can be automated using AI technologies
Challenges	The challenges and critical issues of AI-oriented training	Some barriers to the adoption of AI in the workplace may emerge on the firm side and also on the workers side. Critical aspects related to data privacy and ethical use of AI may emerge, together with barriers to the adoption of AI in the VET environment
Impact	The methodologies and resources of AI-oriented training	AI may impact on learning processes, tools and platforms used for training in order to increase participants familiarity with the AI

Source: authors elaboration.

Figure 1. Conceptual framework



Source: authors elaboration

Methodology

Data collection and measurement

The empirical research was based on the collection of primary data through the administration of an open-ended questionnaire. Through the questionnaire, it was intended to collect data relating to the organizations involved in different ways in vocational training processes. Therefore, the questionnaire was administered to different types of institutions, bodies and companies located on Italian territory and involved at different levels in administering VET education and training.

More specifically, the study involves actors operating in the field of education and professional training, institutions engaged in continuing education, and human resource managers. The investigation started in January 2024 and is still ongoing. While writing, 15 complete and usable answers have been collected for the purpose of the study. The research team is currently analyzing the collected data to preliminarily identify trends and patterns in AI and vocational training processes, in order to validate the conceptual model and the measures for the study.

The main issues addressed in the questionnaire concern: current and emerging training needs in relation to the use of AI in the workplace, the most automated tasks in the context of AI-oriented training, the challenges and critical issues of AI-oriented training, the impact in terms of methodologies and resources of AI-oriented training.

The open answers were coded by the researchers, also triangulating with the literature, reporting them on a scale from 0 to 2, to indicate the interviewee's perception with reference to each of the aspects in relation to the phenomenon considered. Table 2 summarizes the measures for each item.

Table 2. Measurements

Items	Measurements
Skills	0 = no changes after AI integration 1 = small changes after the AI integration 2 = relevant changes after the AI integration
Automatisability	0 = no automatisability of the tasks 1 = small automatisability of the tasks 2 = relevant automatisability of the tasks
Challenges	0 = no challenges after AI integration 1 = small challenges after the AI integration 2 = relevant challenges after the AI integration
Impact (outcome)	0 = no changes after AI integration 1 = small changes after the AI integration 2 = relevant changes after the AI integration

Source: authors elaboration

fsQCA – Fuzzy-set qualitative comparative analysis

In this study we will use Qualitative Comparative Analysis (QCA) to process the data and answer to the research question. The qualitative data will be coded by the authors in order to prepare the data for the analysis.

QCA is configurational method useful to grasp causal relationships between a set of relevant conditions and an outcome (Ragin, 2010). The method is likely to be applied in both small-N and large-N studies (Greckhamer et al., 2018; Ishiyama & Batta, 2012), and may process both quantitative or qualitative data, as in our case (Pagliarin et al., 2023).

QCA introduces the configurational perspective to explain causal complexity, which social phenomena have in common (Misangyi et al., 2017). Three aspects are crucial to adopt the configurational approach: equifinality, conjunctural causation and asymmetry. Equifinality is the idea that different combinations of conditions can lead to the same outcome. Conjunctural causation emphasizes the importance of the interaction between conditions in determining the outcome. Lastly, causal asymmetry suggests that the attributes sufficient for the outcome to occur are not merely the opposite of those sufficient for the outcome to not occur (Ragin & Rihoux, 2009; Woodside, 2014).

In QCA, cases are conceptualized as combinations of relevant attributes, called conditions. The method is rooted in Boolean algebra so that each case membership in each one of the conditions is properly measured and then calibrated in a range between 0 and 1. There are different ways to calibrate the data in fsQCA. Since there are not any external criteria available, we use the internal distribution of cases to calibrate by looking for discontinuities (Schneider & Wagemann, 2010). According to that we identify the qualitative anchors associated with the full-membership, the full non-membership and the cross-over point (Tóth et al., 2015).

Thanks to fsQCA it is possible to understand if there are causal relationships between the conditions and the outcome. After calibration, we build the truth table, which contains all the possible combinations of attributes and outcomes and the associated cases. After processing the truth table, by defining the consistency and frequency thresholds according to the literature (Ragin, 2008), and by using specific software, the logical minimization allows to identify necessary and sufficient conditions for the outcome to occur (Dusa, 2019; Hlavac, 2022; Oana & Schneider, 2018). More specifically, necessary conditions may be defined as those attributes that are always present when the outcome occurs, while sufficient conditions are those attributes that, when present, always lead to the outcome (Fiss, 2011).

Results. Even though our empirical research is still ongoing, we therefore report here some preliminary and some expected results.

Our preliminary data indicate that there is a growing demand for AI-oriented training in VET education. This suggests a growing recognition of the importance of AI skills in these sectors and the desire to incorporate AI-related training into their programs and operations. This happens both for the teachers and the trainees, who have respectively to master AI while teaching and be aware on how to effectively use AI in their workplaces after getting familiar with it thanks to the training activities.

Antecedents such as the degree of automatability/AI of educational tasks, the level of AI-related skills and knowledge among professionals, and the perceived difficulty in transitioning towards greater automation/AI in VET education provide valuable insights into the transformative potential of AI in this domain.

Skills

The level of AI-related skills and knowledge already present among professionals who are being trained plays a pivotal role in shaping the effectiveness and successful implementation of AI within VET training. Educators need to be equipped with AI skills to effectively incorporate technology into their teaching methods, personalize learning experiences, and prepare students for the future workforce. On the other hand, trainees, including students and

professionals, need to develop AI skills to stay competitive in the job market, under and the potential applications of AI in various industries, and contribute to the advancement of the technology.

Automatability

Some of the training tasks performed in VET education appear to be much more affected by AI integration in VET education. More specifically, the learning environment may be automatized with reference to faster design of curricula and courses and development of teaching materials, increased productivity for the execution of training tasks.

Challenges

The integration of AI tools in education have recently been analyzed by management scholars (Ali et al., 2024). The critical aspects identified concern:

1. *Users*: in relation to the need for personalization of educational content, which generalist AI tools (e.g., generative artificial intelligence tools) may not be able to provide
2. *Operations*: with regard to the concrete capacity and possibilities, including economic ones, of current training systems to incorporate artificial intelligence tools, to manage and maintain them appropriately
3. *Environment*: in relation to the increased use of electronic tools that impact the environment (in terms of electricity and water needs) during use and also in relation to the disposal of electronic devices at the end of their useful life
4. *Ethics*: related to the biases that artificial intelligence tools could have based on the data with which they have been trained, regarding issues of minority inclusion, and equality.

Impact

One of the key aspects to consider when analyzing the impact of AI on VET education is the potential influence it can have on teaching methods and learning processes. With the integration of AI, there is a possibility for personalized teaching approaches that cater to individual student needs, thereby enhancing the overall learning experience. Additionally, AI can play a significant role in automating administrative tasks (Zouhaier, 2023). More specifically, among the others, these aspects emerge from our preliminary responses: 1) using AI as a study companion or a mentor, to generate ideas and advice, as a tutor to evaluate what they have written or thought and give advice on how to improve the product, in simulations to invite them to think as an actor in the context of an interaction and asking artificial intelligence to play another role in the simulation; 2) using AI as tools to support the design and delivery of lessons, for example through the processing of large volumes of data for the understanding of trends related to training needs and the labor market, for the personalization of study paths, or through the development of simulation scenarios to be used in the classroom or more generally of teaching material to support lessons.

Managerial implications. This work offers interesting implications both for theory and practice. Thus, on the one hand, it contributes to the research on VET and its recent evolution, due to the effect of the digital revolution and the implementation of advanced technologies, such as AI algorithms. In particular, it contributes to the research on the innovative potential of AI for advancing and personalizing VET pedagogical approaches, thanks to a better understanding of learning and working needs, as well as of the main characteristics that are required by VET actors to AI-based solutions (Marshall and Sankey, 2023). On the other, it offers also interesting insights to policymakers, education organizations, and companies. VET programs and the demand for updated professional skills are currently among the main concerns of policymakers, due to their central contribution to the development and competitiveness of each country. Even though the empirical analysis has offered just preliminary findings, they have pointed out the needs for a more informed cooperation between VET actors and for more effective literacy programs promoted by policymakers and intended to contribute to overcome the resistance to technologies that often still characterize VET teachers, learners, and the interested companies. These actions will also benefit the definition of flexible educational strategies and actions able to promote an adaptive approach to VET intended at creating personalized and autonomous pedagogical and learning systems (Osadcha et al., 2020; Huang et al., 2021). This seems to be even more essential if related to the disruptive changes occurring in the labor market at a global level (Baumeler et al., 2021). However, in doing so collaboration is essential; thus, policymakers should be open and ready to collaborate with education organizations (and teachers) as well as with companies and single learners, recognizing and harmonizing their wants and needs.

This work has also some implications for education organizations; thus, it offers guidance for exploiting AI potential in terms of recognizing and offering learning services in line with the current requirements, working both on pedagogical approaches and on teachers/trainers' competence and openness to the use of advanced technologies (Attwell et al., 2020). In fact, the achieved results can support these organizations in rearranging VET learning protocols, curricula, and interaction processes.

Finally, results offer some implications also for business companies, focusing on the importance of changing the approach to continuing training and of being more open to the use of technological solutions, such as AIEd, for aligning professionals' knowledge and skills to the current business scenarios, making people able to respond to the demand for advanced digital and technical skills (Marshall and Sankey, 2023). This implies that companies should be more open to investing not only in VET strategies and programs but also in digital technologies literacy to be open to advancing those programs towards better use of AI.

Originality of the paper. The originality of this work lies in the attempt to contribute to bridging the gap in the existing literature about the international and national evolution of VET, focusing on the role that smart digital technologies, such as AI, are playing in it. In doing so this paper represents one of the first contributions to quantitatively assess if and how educators are open to using AI solutions in VET programs. Moreover, this contribution provides empirical evidence that contributes to the lively debate about the “digital evolution” of VET, supporting VET educators in enhancing the learning/training experience through AI to make it as in line as possible with the needs of VET students.

Research limitations. Even though the interesting insights, this work does not come without limitations. The main of these are related to the limited sample and to the fact that the survey has been conducted just in the Italian VET scenario. Consequently, a more extensive survey, both at the national and European level, will make it possible to compare the Italian approach to the use of AI in VET with the approach and trend of other European countries. This is essential not only to make the findings more generalizable but also to open further research aimed at better understanding how to improve the interaction between students and educators using the right and more effective way AI tools dedicated education.

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AI-Powered Marketing Communication: Exploring Strategies in the Luxury Furniture Industry

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Abstract

Artificial intelligence (AI) forces communication and marketing managers to improve their skills, competencies, and capabilities to understand and adopt this innovative tool. Because of its capability to perform various data-based activities faster than humans can achieve them, AI appears to be a game-changer tool for marketing communication strategies. However, despite the global awareness that AI is receiving today and its increasing introduction in marketing communication processes, marketing and communication managers' perceptions, attitudes, and utilization are still underexplored. Therefore, the research aims to investigate marketing and communication managers' attitudes and behaviors toward introducing AI. The study adopts the Social Cognitive Theory of Organizational Management to understand the impacts of cognitive, behavioral, and environmental factors on the marketing and communication managers' intention to use AI at work. The analysis focuses mainly on managers operating in the luxury furniture design sector, which, while on the one hand, is frequently using AI for communication and marketing purposes, on the other hand, has not been previously explored. The research adopts a qualitative approach, and data are collected by conducting in-depth interviews with marketing and communication managers of luxury Made in Italy furniture design companies to achieve its objectives. The focus on Made in Italy organizations is supported by the sector's relevance and global recognition, which ensure the opportunity to provide managerial and policymaker-oriented implications. Although the study is still in progress, the findings will allow us to obtain a comprehensive overview of AI integration toward marketing communication strategies in luxury Made in Italy furniture design managers' processes and activities to provide theoretical implications to advance knowledge related to the use of AI by marketing and communication managers.

Key words: artificial intelligence; marketing communication; luxury; furniture design; made in Italy

Framing of the research. Since 1991, the year the Internet was introduced, marketing communication has changed significantly (Rowley, 2004; Shankar et al., 2022). For example, social networks and blogging platforms have fostered a two-way relationship between brands and consumers through real-time interaction (Kim et al., 2021). In addition, technologies' ability to track consumer behavior has allowed companies to build databases and provide hyper-personalized communications by creating user profiles (Varnali, 2021). Managers could listen to consumers and implement or adjust their marketing communication strategies using an integrated approach (Eriksson et al., 2020). Moreover, the availability of multiple digital touchpoints has increased the need for marketing and communications managers to manage integrated marketing communications coherently to provide consumers with consistent content and information (Rehman et al., 2022). Artificial intelligence (AI) has recently been determining new transformations and opportunities for marketing and communication managers to create and deliver integrated marketing communication strategies (Vlacic et al., 2021), and to date, AI is changing the marketing paradigm (Davenport et al., 2020).

AI refers to "machines that mimic human intelligence in tasks such as learning, planning, and problem solving through higher-level, autonomous knowledge creation" (De Bruyn et al., 2020, p. 93). In other words, AI is evidence of the intelligence that machines demonstrate through specific actions (Shieber, 2004). A machine action is considered "intelligent" if it performs tasks that, if performed by a human, would be considered intelligent. In this sense, intelligence consists of learning processes, planning, or problem-solving methods faster than humans because of its capacity to analyze and elaborate enormous sets of data (Xu et al., 2021) and in the ability of machines to demonstrate creativity, logic, and critical thinking, among other things, and thus support entrepreneurial action (Bruyn et al., 2020; Russell and Norvig, 2016).

AI has proven to be a vital tool for revolutionizing marketing strategies (Davenport et al., 2020), enabling companies to adapt their business models, streamline sales processes, improve customer service, and understand customer behavior

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more comprehensively. The innovation of marketing strategies through AI is possible through three main thrusts (Sjodin et al., 2021): (a) the ability of AI to collect data and present it in a structured way — quality and quantity of data have a direct impact on the outcome; (b) the ability of the organization to develop algorithms that can provide insights (based on processed data) for potential future business actions aimed at solving problems or making progress; (c) the company's ability to democratize AI to make AI accessible to everyone in the company by involving the workforce in identifying and experimenting with valuable applications to improve activities. For instance, AI can help marketing and communication managers communicate correctly with consumers (Eriksson et al., 2020), making their organizations agile (Chatterjee et al., 2021).

Huang and Rust (2018) distinguish four types of AI intelligence: mechanical, analytical, intuitive, and empathetic. Mechanical intelligence is the ability to perform repetitive and routine tasks automatically. Analytical intelligence involves processing information to solve problems and learn from it. Intuitive intelligence means thinking creatively and adapting effectively to new situations that require insight and creative problem-solving. Finally, empathic intelligence refers to recognizing and understanding others' emotions, responding appropriately, and influencing others' emotions. The authors suggest how each level of AI intelligence could replace human labor and activities. However, while many activities could be replaced by AI - such as customer support, where an AI-based chatbot can provide consumers with information and details (Mariani and Borghi, 2023) - others (such as marketing and communication) can benefit from the introduction of AI into processes and activities (Mariani and Dwivedi, 2024).

AI enables marketing managers to analyze and use data in novel ways, which helps them make informed, strategic, and rational decisions (Eriksson et al., 2020). For instance, AI allows managers to understand when, where, and how to deliver a message to a precise audience to optimize budget and increase results (Huang and Rust, 2020). Also, AI can help marketing and communication managers create, revise, or proofread messages and content delivered through multiple channels (Chintalapati et al., 2021). Additionally, AI might simplify marketing and communication managers' activities and processes, reducing the effort required to achieve, among others, repetitive tasks and actions (Huang and Rust, 2018). As proof of that, AI tools available to marketing and communication managers are becoming increasingly numerous and specialized (Ippen, 2024; Sabaliauskiene, 2024). Also, especially on social networks (e.g., TikTok), there is a growing abundance of videos and tutorials explaining how to utilize AI to support various activities, ranging from streamlining processes to crafting entire marketing and communication campaigns (Dudekula, 2023). Therefore, managers might adopt AI because of personal or contextual factors (Sharma et al., 2023). Given the subjective and contextual elements that might influence managers, the current research adopts the Social Cognitive Theory of Organizational Management as the theoretical lens for understanding why marketing and communication managers behave toward AI.

The Social Cognitive Theory of Organizational Management (SCTOM), developed by Wood & Bandura (1989) based on Bandura's Social Cognitive Theory (SCT) (1977, 2023), assumes that personal factors contribute to the dynamic transaction in the management of organizations and to managerial decisions and performance. The causal interactional structures among the interactants, behavior (B), cognitive and other personal factors (P), and the external environment (E) are the determinants of managerial decision-making in dynamic environments. Each interactant in the triadic causal construct that the authors identify functions as an essential and constituent part of the organizational process (Bandura, 1988). Three aspects of SCT are specifically relevant: (a) the development of people's cognitive, social, and behavioral skills through mastery modeling; (b) subjective beliefs in personal abilities to use their talents effectively; and (c) the enhancement of individual motivation through goals.

This theoretical approach appears particularly relevant to integrating AI into decision-making processes, where cognitive, behavioral, and environmental factors influence managers' decisions, self-efficacy perceptions, and performance outcomes. Recent studies have revealed that acceptance or rejection of AI results from a multi-stage evaluative process in which the result is expressed along two fronts: acceptance or rejection of AI. Fronts that, despite traditional models, should not be considered oppositional constructs but rather the expression of a specific rejection of AI and not of the technology in absolute terms (e.g., Gursoy et al., 2019; Lin et al. (2024).

To date, and to the best of our knowledge, no research has studied managers' perceptions and orientation toward integrating AI into communication-related decision-making processes. This paper aims to help fill this knowledge gap. In particular, there is a lack of knowledge regarding the perceptions, intentions, and behaviors operating within communication and marketing, especially in the luxury sector, in which these professionals are requested to create a "dream" in consumers' minds (Chandon et al., 2016).

The use of AI for marketing communication strategies is particularly relevant in the luxury sector (Oc et al., 2023), where AI can optimize the definition and delivery of communication marketing strategies (Nieves, 2024). Nieves (2024) notably reports how luxury brands can use AI to optimize operations, create exclusive experiences by tailoring unique activities for each consumer, and measure customer satisfaction, loyalty, and engagement through specific real-time metrics. In this context, after using AI to analyze consumer comments and reviews on YouTube about luxury fashion products, Oc et al. (2023) emphasize how managers can use AI to create new content and target new segments by redefining their campaign messages based on the processed data. Despite this evidence, analyzing the perceptions and attitudes of marketing and communication managers toward integrating AI into their practices and activities is still scarce.

Managers from other luxury sectors, such as luxury furniture design, have integrated AI into their creative processes (Salone del Mobile.Milano, 2023). Natuzzi, an Italian furniture design brand in the luxury market, has used AI to improve the online customer experience and tailor product recommendations to individual preferences (Microsoft, 2021). The