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Are half of the published papers in top-management-journals never cited? Refuting the myth and examining the reason for its creation

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ABSTRACT

A stylised fact in bibliometric research is that in the field of management studies, half or more of the papers published are never cited. If true, this implies that efforts and resources are considerably wasted because half of the academic work is not considered worthy by the same community that developed them. We studied a sample of 2777 papers published in 20 journals and representing different levels of quality. Of these, only 191 papers, representing 6.5% of the sample, were never cited, suggesting that the aforementioned stylised fact is a myth. We identified the factors that contribute to the level of citations, including the ranking of the journal in the quality list, time since last citation, and number of authors. The implications discussed suggest a need for reflection regarding the relevance of the factors that predict future citations.

Introduction

Academe aims at knowledge creation for both theory and practice. Like any professional, academics want appreciation and recognition of their work. It has long been assumed that much of the work of academics, particularly in management and organisational studies, is not recognised, neither by practitioners, who commonly do not read peer-reviewed journals in the social sciences (Mohammadi et al. 2015), nor by the academic community itself in terms of citations (Starbuck 2005). Statements such as 'more than half of the papers published have never been cited' or the like are made at conferences and in academic conversations (Prichard 2013; Starbuck 2005; Van Noorden 2017), leading to the frequent repetition of such claims.

Despite this, the question of the extent to which academics appreciate and use the work of their colleagues remains. As a professional community with the common goal of pushing cutting-edge knowledge, the litmus test for such use and appreciation is the number of citations for each work. Citing works of others traces the way we progress in our thinking and how we respect and build on the work done before (Keyes 1959) and is often used to measure the impact in research quality assessments (Bazeley 2010; Horta and Santos 2019). The level of citation and the type of publication form a major base for the way scholarship in the field is perceived (Adler and Harzing 2009; Calma and Davies 2015). As a result, bibliometric indicators are essential in determining research units' ranking positions (Anninos 2014; Xu, Rose, and Oancea 2019).

It has been over two decades since the actual extent of the debate about non-citation of academic papers came under scrutiny, and the issue remains contentious (Clemens et al. 1995). It

was found that 55% of papers published between 1981 and 1985 had not been cited at all in the first five years after publication (Campanario 1993, 347; Hamilton 1990), but these works did not clarify what they considered a 'paper' (for instance, book reviews and editorials were included). This would have helped substantiate the claim that many published papers remain uncited. Aksnes and Sivertsen (2004, 214) suggest 'that the majority of articles are seldom or never cited at all'. Are such claims based on valid evidence or have they become stylised facts – i.e. the so-called academic urban legends (Vandenberg 2006)?

Alternative views suggest that the phenomenon is not prevalent and that there is scant evidence for such claims in different fields (for a summary of the debate, see Remler 2014). Citation levels vary across different fields and disciplines (Althouse et al. 2009). For example, in medicine, only 19 out of 204 papers were never cited in the 20 years after publication (Callaham, Wears, and Weber 2002). Similarly, the evidence provided challenges the assumption of poor or no citations. An example is sociology, in which 43% of a random sample of articles and research notes were cited within the first year after publication, and six years later, 83% were cited at least once (Hargens 1988). A recent large-scale cross-disciplinary study covering more than 29 million documents displays an uncitedness rate of only approximately 25% (Nicolaisen and Frandsen 2019). Nonetheless, one may still interpret this as suggesting poor citation levels.

The conflicting evidence briefly summarised above suggests the possible creation of an academic urban legend (Vandenberg 2006), stating that a significant portion of articles published in high-ranked journals are rarely cited and even that the majority are never cited. The heavily skewed distribution of citations that is repeatedly found may imply that this claim contains a kernel of truth (Baum 2011). The need to study this apparent uncitedness has several dimensions. Such a phenomenon would suggest poor functioning of the peer-review system and potentially that much of the research conducted is not needed. The findings of this paper will shed light on the patterns of the scientific community and the process of knowledge construction within academe. The conflicting evidence, however, highlights how the issue of uncitedness is quite nuanced, adding impetus to the need to study it in greater detail. Part of the evidence briefly summarised above is inconsistent with and thus refutes the 'never been cited' legend. Subsequently, in this paper, we investigate this legend through conceptual and empirical lenses. First, we conceptually discuss several counterforces to the 'uncitedness' phenomenon. Second, we gather empirical evidence using a bibliometric analysis of citation counts for the management discipline and its selected sub-fields. Both our conceptual arguments and our findings conclude that the stylised fact of 'never been cited' is certainly a myth, at least for the management community as reflected in our sample of journals.

As with all myths, there is probably an element of truth (Lance and Vandenberg 2009) embedded in this claim, which we discuss with reference to the academic community in management and behavioural sciences. We empirically study the actual level of citations of papers published in management journals, which is currently unclear. Our arguments and findings contribute to our understanding of the academic system, where publications and citations are critical for scholars and their careers (Adler and Harzing 2009; Baruch and Hall 2004; Podsakoff et al. 2018). Furthermore, as individual academic reputation – but also institutional reputation – becomes more and more dependent on citations, the question is of high practical relevance to the academic profession.

The publication context as a pre-requisite for citations

It is very difficult to publish in leading journals in the field of management – rejection rates are typically above 90%. The so-called top journals (A journals), i.e. those in the top-quality lists, select what they consider the top 3–5% of the submissions. Strong academic journals with good credentials (C journals) accept about 20%. Journals of lesser quality tend not to indicate acceptance rate, but it may be 50% or more. The typical process of publishing a manuscript involves targeting top-ranking journals and, if rejected, trying other journals in a descending order of prestige until a paper is published or a manuscript is discarded.

It should be emphasised that the 'quality' is always perceived 'quality' in terms of both journal quality and paper quality. Journal quality is considered high or low according to the various lists the journal is ranked in, none of which is perfect. For instance, the International Scientific Indexing (ISI) impact factor list refers only to citations from the last two years because it was developed with the natural sciences in mind. In the behavioural and management sciences, this time gap makes the measurement flawed (Frey and Rost 2010; Osterloh and Frey 2015). Other lists are decided by communal effort, which cannot be free of political and reputational considerations. As for paper quality, papers are included in a journal following a review process that is of questionable accuracy and validity (Dipboye 2006; Starbuck 2003). While still better than arbitrary or random selection, evaluations are too often done by narrow specialists or by scholars lacking the insight required to judge the ingenuity and originality of new findings (Judge et al. 2007; Seglen 1997). Another possible distorting factor is the influence of self-citations (DuBois and Reeb 2000), although these can only be marginal in most cases. Even the most highly ranked journals suffer from inconsistent reviewer judgements; after analysing the correlation between reviewer judgements for Administrative Science Quarterly (ASQ), Starbuck (2003, 346) concludes that 'knowing what one reviewer had said about a manuscript would tell me almost nothing about what a second reviewer had said or would say'.

The publication process and its implications for future citations

It can be assumed that, unless the selection process is random, better papers will be published in better journals through a 'filtering' process; however, a variety of factors might distort this logic. For example, reviewers may not be in consensus, well-written papers may not stand out (due to a poor title, for instance), or the prestige of the author and/or institution may cause papers of lesser quality to be accepted by prestigious journals (i.e. the 'Big Name' factor).

Another contextual or defining element is how one identifies 'citations'. Looking at the journal *Organization*, Prichard (2013) finds that 44% of publications were cited less than four times and 9% (48 papers) were never cited at the time of his investigation; this is according to the Thomson-Reuters ISI list. However, if we count references not limited to the Thomson-Reuters ISI list, only eight of those 48 were never cited. This finding is consistent with Bergman's (2012) work comparing citations on Web of Science, Scopus, and Google Scholar in the field of social work. Her main findings attribute higher citation numbers to Google Scholar but also highlight a greater variety in sources, which raises the question of what counts as scholarly knowledge.

A large literature focusing on the identification of the drivers of citations has developed (Birkinshaw, Lecuona, and Barwise 2016; Bosquet and Combes 2013; Judge et al. 2007). Hanel and Haase (2017, 3) present a comprehensive overview of the factors potentially driving citations, including the impact factor of the journal, number of references used, length of the title, and gender of the author. While the ISI impact factor is considered important, it does not always match other quality indicators (Pendlebury 2009). Other factors, such as the academic field (Nicolaisen and Frandsen 2019) are also considered while predicting future citations.

While these findings indicate that publishing in high-ranked journals almost inevitably leads to an increased number of citations, there is also counterevidence for this. For example, criticising the use of impact factors, Baum (2011, 451) asserts, 'The majority of articles published in high-IF journals may be basking, along with the journals themselves, in the reflected glory of a small minority of citation-worthy articles'. In the field of organisation studies, he finds that one-fifth of the articles published have the majority of citations in the respective journal.

An early contribution by Starbuck (2005) heavily criticises institutions' growing focus on forcing researchers to publish in top-tier journals. Referring to one of his many analyses, he proclaims, 'On the contrary, with the exception of economics, citation data mainly indicate that researchers have

been citing bottom tier journals more often' (Starbuck 2005, 182). Notably, there are far more bottom-tier journals than top-tier ones, which may explain this phenomenon.

The size of the education sector has increased, most remarkably in business and management studies. In some universities, especially Anglo-Saxon universities, business schools have a very high volume of students. Thus, more individual scholars are employed in these schools. As a result, more papers are being written and each of them cites a number of papers (Bryman and Bell 2015; Saunders, Lewis, and Thornhill 2016), thereby making actual academic impact (Podsakoff et al. 2018). Such developments give rise to several dynamics that are contrary to the never-cited myth, i.e. they make citations more likely. In particular, in recent years, where competition among business schools has increased, the ever-increasing number of scholarly outputs and available outlets fuel these dynamics. Thus, in the following section, we discuss three counterforces to the uncitedness phenomenon.

The three counterforces to uncitedness

Counterforce 1: growing reference lists

As time goes by, there is a tendency among scholars to include more references in each paper, resulting in longer reference lists than in the past. Following the need for rigour in academic argumentation, authors tend to cite more than was typical 20–30 years ago in the same journals. Having a long reference list is actually considered an 'easy way to boost citations' (Corbyn 2010) and is relevant in many contexts (Ale Ebrahim et al. 2015). This logic is based on the idea that long lists reflect rigour and broad academic knowledge (Costas, van Leeuwen, and Bordons 2012). The number of references cited in a paper is identified as the second most important predictor of future citations in *Leadership Quarterly* (Antonakis et al. 2014). They also find that in *Leadership Quarterly*, only 9% of articles were never cited and 40% receive fewer than 10 citations. Such developments act as a counterforce against uncitedness. Earlier, we mentioned that quality measures of journals are inaccurate and can be influenced by various factors, not all of which reflect true quality. Nevertheless, the nature of the publication process and academics' drive to maximise their outcomes suggest that individuals will submit their best work to top journals to gain reputation and recognition and succeed in their academic career (Baruch and Hall 2004). Rejected manuscripts will be sent to journals down the line of ranking, and in most cases, they will be eventually accepted in a journal that is more lenient (Day 2011). Moreover, to gain validity and strengthen argumentation, scholars aim to cite well-respected journals. Thus, in a cyclical way, reputation and quality of journals follow a cycle of self-validation. This means there is a higher chance that papers published in a top journal will be of higher quality than those published in low-ranked journals. Thus, papers published in top journals will be cited more than others.

According to the findings of Vogel, Hattke, and Petersen (2017), in eight out of 18 high-ranked journals, long reference lists are associated with an increased chance of publication in such journals. Additionally, another determinant to publication is the quality of the references (Vogel, Hattke, and Petersen 2017). Thus, authors citing more pieces from top-tier journals will in turn increase their chances of getting published within them, which may reflect the promotion of academic self-interest (Byington and Felps 2017). As this dynamic imposes pressure for citing a large number of papers, the nature and outcome of this process manifest in the strong relationships among journal positions in the ISI list and other lists such as the British Chartered Association of Business Schools (CABS) Academic Journal Guide ('ABS list') or external evaluations such as the one used for the Research Excellence Framework (REF) in the UK.

In conclusion, we can say that citations and impact factors are not absent from the journal evaluation process but are only one of the many drivers of the final journal rank. As a result of the above discussion, we hypothesise the following:

Hypothesis 1: The higher the quality of the journal, the more a paper will be cited.

Counterforce 2: data availability

A second contributing factor to the growth of reference lists in academic papers is enhanced data availability. Both improvements in access, including open access (Baruch, Ghobadian, and Özbilgin 2013), and competition across various providers (such as EBSCO, ProQuest, Scopus, and specific publisher databases, and particularly the free Google Scholar) enable the expansion of literature databases. Technological enhancements also enable the collection, storage, and processing of large amounts of data, adding another factor that drives citations. As more journals are covered by more databases, such as the Web of Science, even more citations are recorded, facilitating the visibility of articles published in previously 'hidden' journals. Google-Scholar does not include any level of 'ranking' of the references listed, and the ease of access encourages authors to use it extensively (Kulkarni et al. 2009). Our work does not examine this factor separately, but we acknowledge its influence on the declining uncitedness ratios.

It takes time to be noticed, but when a manuscript starts to be well cited, a meaningful level of attention is gathered. In the natural sciences, new developments may overshadow past progress, which then cease to be cited, but in the management and behavioural sciences, papers that are noticed continue to accumulate citations over the years. It may also be that papers become increasingly popular and accumulate citations because they have been cited before – a manifestation of the Matthew effect in science (Merton 1968; for a detailed discussion, see Osterloh and Frey 2015). The half-life cycle of journal papers varies (Pendlebury 2009; Pravdić and Pekorari 1985), and we are unaware of any half-life cycle assessment of papers in the field of business and management.

A small body of literature has developed around the issue of delayed recognition; i.e. some papers are not cited heavily after publication and remain 'so-called sleeping beauties' (Li 2014) until they receive attention much later on. For example, Ho and Hartley (2017) point out that the famous contributions of Maslow (1943) and Simon (1959) only began to attract large quantities of citations after 23 and 29 years, respectively, after publication, as opposed to the two years on which impact factors are based. Hence, in today's academic system, the two mentioned cases would very likely be considered low-impact scholars, which is clearly inaccurate. The finding further underscores how the inherent bias in impact factors attribute higher weight to a flash in the pan (Li 2014).

Counterforce 3: self-citations and disciplinary norms

Self-citation, when not taken to the extreme, is legitimate, frequent, and often necessary (Glänzel and Thijs 2004; Ioannidis 2015). More co-authors can mean more self-citations, which can drive the initial visibility of a paper. Having more co-authors also enables increased use of networks to promote papers, which may lead to higher levels of citations (Persson, Glänzel, and Danell 2004). The number of papers published by multiple authors as compared to single authors is increasing (González-Teruel et al. 2015). We thus expect that papers published with more co-authors will gain a higher level of citations after publication, giving us the following hypothesis:

Hypothesis 2: The more co-authors a publication has, the more the paper will be cited.

The norm regarding the number of citations expected varies across disciplines. In some, there is a tendency to use long reference lists to indicate rigorous research and wide coverage of the literature. Publications in other fields are characterised by more concise reference lists. This is in line with the argument that diversity of references reflects interdisciplinary scholarship (Zhang, Rousseau, and Glänzel 2016). Due to such different norms and expectations among scholars, we expect that in different fields, the aggregate number of citations will vary, leading to the following hypothesis:

Hypothesis 3: The field of study will moderate the level of citations so that papers in more general fields of management will suffer less from lack of citations.

Method

Sample

We included four levels of journal ranking based on the British 2015 Academic Journal Guide or more colloquially known as the 'ABS list'. It distinguishes itself from other guides because of an explicit non-reliance on standard journal metrics. The methodology document available on the CABS website clarifies the following:

> The Chartered ABS AJG is distinctive in that, unlike other journal ratings, it is not based purely on some weighted average of journal metrics, or simply ranks journals on the basis of inclusion or not. The AJG reflects the outcomes of consultation carried out by the Scientific Committee of subject experts with expert peers and scholarly associations as to the relative standing of journals in each subject area. (AJG Methodology 2020, 4)

The Chartered ABS Journal Guide has become globally acknowledged, albeit also criticised (Mingers and Willmott 2013).

Additionally, the methodology places emphasis on the opinion of subject matter experts and members of learned societies and academic interest groups. According to the document, all stakeholders are consulted while creating the journal guide. Nonetheless, the impact factors are made available to the methodologists and are part of the journal review forms used in the process. As the document states, 'a strong case can be made for the need to consult all four impact factors (wherever available) when assessing the quality of a journal' (AJG Methodology 2020, 7).

We established our sample by identifying five journals for each level and then collecting the data from the selected journals (a list of journal acronyms can be found in the Appendix). The data included all papers published in three specific years – 2005, 2010, and 2013 – to avoid data overload for studying research method issues (as in Baruch and Holtom 2008), including the issue of citation analysis (Hu and Wu 2014). All citation counts were collected from the specified time to 2016 from the Web of Science. The total sample consists of 2777 papers and covers seven sub-disciplines or related disciplines: human resource management (HRM), management (MANG), organisation studies (ORG), psychology (PSY), public administration (PA), and sociology (SOC). Table 1 presents the details for the number of papers based on journal rank. Table 2 displays the year-wise

Table 1. Journal overview by ABS rank.

ABS Rank	Journal	Freq.	Per-cent	Cum.
1*&2*	JASP	510	53.74	53.74
	A&S	105	11.06	64.81
	JOCM	124	13.07	77.87
	OD	100	10.54	88.41
	PR	110	11.59	100
	Total	**949**	**100**	
3*	APIR	85	14.03	14.03
	BJS	91	15.02	29.04
	GOM	72	11.88	40.92
	IRAS	111	18.32	59.24
	JMI	91	15.02	74.26
	JOCCPSY	156	25.74	100
	Total	**606**	**100**	
4*	JOB	236	30.45	30.45
	JPART	140	18.06	48.52
	LQ	151	19.48	68
	PAR	248	32	100
	Total	**775**	**100**	
4**	AJOS	123	27.52	27.52
	AMJ	200	44.74	72.26
	ASQ	41	9.17	81.43
	JOM	83	18.57	100
	Total	**447**	**100**	

N = 2777 papers.

Table 2. Number of papers by ABS rank and year.

ABS Rank	Publication Year			
	2005	2010	2013	Total
1*&2*	250	292	407	949
3*	175	209	222	606
4*	228	313	234	775
4**	137	184	126	447
Total	790	998	989	2777

distribution of the articles. Both tables indicate journal classification levels according to the ABS list. Table 3 lists articles in the dataset with fewer than 10 citations.

Variables

The dependent variable is the total number of citations each paper received ('totcites') since its year of publication. The data were drawn from the Web of Science. The citations were downloaded by year and then summated.

  We used three main independent variables. First, journal quality was measured using the rank of the journal in the ABS classification of journals ('abs'). The low end is ABS 1* and the high end is ABS 4**. Second, we used the number of authors of each paper ('authors') as a predictor variable. Third, we used the year of publication ('pubyear') as the predictor variable. Finally, we used the list of related disciplines and sub-disciplines – i.e. HRM, management, organisation studies, psychology, public administration, and sociology – contained in the ABS list as variables to identify subsamples.

Estimation strategy

Citation data are count data and variances are higher than means for total citations (mean = 25.79, SD = 49.45, variance = 2445.50). Hence, the use of negative binomial regression is an appropriate estimation strategy (Antonakis et al. 2014). All models were estimated using Stata version 14. To check robustness, the dataset was filtered for papers containing the string 'Review' in the title, and the results had about 20 papers (Note that review papers often attract above average citations and thus we wanted to make sure our results remain unaffected). We ran regressions for the full sample and the subsample of HRM papers, as it was the smallest one. The results were not affected. Hence, we report analyses based on the full original dataset below.

Results

Some descriptive results are presented first. Figure 1 displays the distribution of total citations, which shows a traditional pattern; the majority of papers receive a low number of citations, whereas only very few receive a large number. The most-cited paper in our dataset is Subramaniam and Youndt (2005), with 688 citations accumulated since publication (see Appendix 2 for the list of the top seven most-cited papers). Only 5% of the papers in our dataset have more than 100 citations, whereas 7% (194) of papers are not cited at all. A total of 685 papers have between one and four citations.

Table 3. Articles with fewer than 10 citations in the dataset.

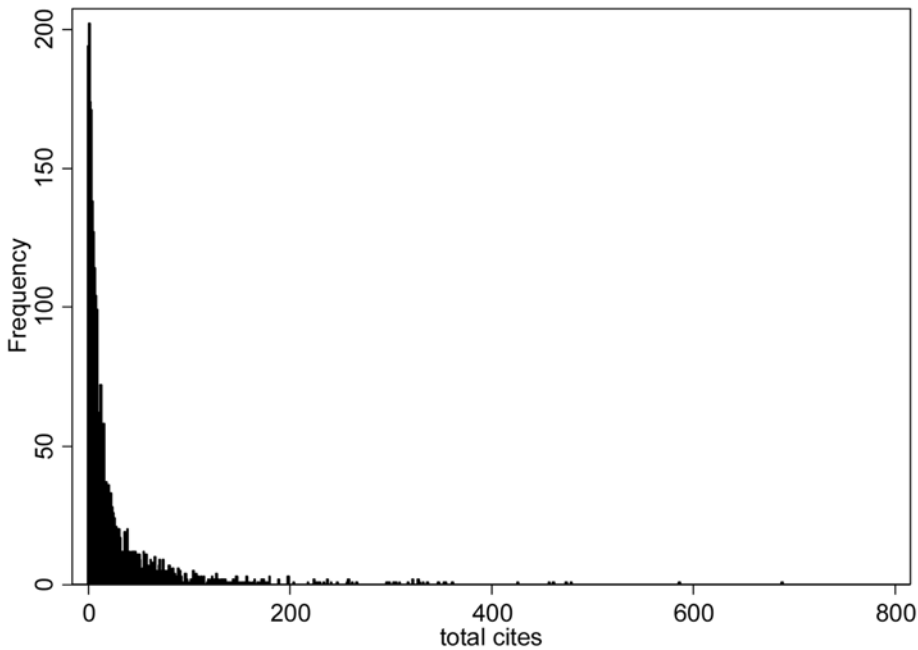| ABS rank	Total cites									
	0	1	2	3	4	5	6	7	8	9
1*&2*	113	116	91	95	75	55	50	48	37	19
3*	45	45	50	39	38	39	29	19	29	25
4*	27	35	29	32	20	27	28	25	22	22
4**	9	6	4	5	5	6	7	12	11	7

Figure 1. Distribution of total cites.

Looking at the 4** journals, only nine papers have zero citations, as shown in Table 3. We cannot consider two of them to be genuine papers, as one is an 'erratum' and the other is an 'editorial'. Thus, the actual finding is that out of the 447 papers published in the 4** journals, only seven (0.02%) have never been cited. In the next best category of ABS 4*, only 27 papers are uncited. However, we need to exclude 14 of these because they are short commentaries of 2–3 pages rather than full papers; this is primarily due to a special issue in Public Administration Review Vol. 70, S1, which contains a large number of such short pieces. Hence, the actual finding is that 13 (0.01%) papers published in the ABS 4* category remain uncited.

Hypotheses testing

The descriptive data presented above already offers some support for the idea that the uncitedness argument is a myth. The regression results presented in Table 4 support Hypothesis 1. They indicate that the higher the quality of the journal, the more the paper will be cited; papers published in high-ranked journals receive significantly higher levels of citations, as evidenced by all the coefficients on the ABS variable, which are positive and highly significant. We find this pattern in all models, including the full sample regression model displayed in Table 5.

Hypothesis 2 is partially supported. The more co-authors a publication has, the more it is cited. However, this does not hold true across all the specifications and sub-fields under study. The number of authors is only significant and positive within the fields of management, organisation studies, and public administration, whereas in HRM and psychology there is no such association. In the field of sociology, the number of authors even exhibits a small but significant negative effect on citations. This finding offers partial support for Hypothesis 2.

A possible explanation was suggested by one anonymous reviewer, which is the possibility of curvilinear relationships. In our dataset, 92% of the articles are written by 4 or less authors, with min = 1

Table 4. Never cited by discipline; negative binomial regression of citation counts by sub-discipline.

VARIABLES	(1) HRM Totcites	(3) MANG Totcites	(5) ORG Totcites	(7) PSY Totcites	(9) PA Totcites	(11) SOC Totcites
ABS	0.517***	0.0261***	0.0521***	1.031***	0.469***	0.0301***
	(0.126)	(0.00197)	(0.00372)	(0.0839)	(0.0590)	(0.00257)
Authors	0.0420	0.118***	0.177***	0.0292	0.250***	−0.0700*
	(0.0591)	(0.0317)	(0.0576)	(0.0325)	(0.0542)	(0.0363)
Pubyear	−0.177***	−0.192***	−0.219***	−0.218***	−0.225***	−0.219***
	(0.0196)	(0.0132)	(0.0202)	(0.0133)	(0.0150)	(0.0131)
Constant	357.7***	388.1***	441.6***	437.7***	452.0***	441.5***
	(39.30)	(26.54)	(40.63)	(26.73)	(30.15)	(26.34)
Observations	181	522	261	464	603	581
Pseudo r-squared	0.0630	0.0642	0.124	0.0806	0.0574	0.0945

Notes: Standard errors in parentheses, ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$, HRM: Human Resource Management, MANG: Management, ORG: Organisation Studies, PSY: Psychology, PA: Public Administration, SOC: Sociology. We employed a similar approach to Antonakis et al. (2014). Papers with more than seven authors excluded.

and max = 81. We added a squared term for the author variable and used the residual versus fitted plot command in Stata; we also ran the utest routine in Stata. The additional checks indicate that our hypotheses are correct, but the inflection point of the curve is estimated at 43 authors by utest. Hence, it is not a very common case in the management discipline. The residual versus fitted plot is displayed in Figure 2.

Examining the coefficient size is important as there are variations according to the sub-discipline. Publishing in ABS high-ranked journals has a stronger association with the citation count in the fields of psychology ($b = 1.031$, $p < 0.01$) and HRM ($b = 0.517$, $p < 0.01$), whereas this association appears to be weakest in general management ($b = 0.0261$, $p < 0.01$). Nonetheless, in all sub-fields, a positive and statistically significant relationship is shown in the data. This finding rejects Hypothesis 3, which states that the field of study will moderate the level of citations so that papers in more general fields of management will suffer less from lack of citations.

Interestingly, and in line with the comments made by Starbuck (2005), our own results indicate a higher total number of citations for one- and two-star journals in 2005 compared to the total number of citations for 4** journals. This can be explained by the greater number of lower-level journals in our sample, as we have combined the categories of ABS one and two. A similar pattern is shown for the other years of publication, with a small exception in the set of papers published in 2010. Here, the highest number of citations is generated by journals ranked ABS 3*. Clearly, high-ranked journals occasionally publish papers that gain an above-average number of citations (Baum 2011), while low-ranked journals have fewer citations per paper but have many papers.

Table 5. Full sample, Negative Binomial Regression of citation counts.

VARIABLES	(1) Full sample Totcites	(2) Inalpha	(3) Full sample (papers with high author numbers excluded) Totcites	(4) Inalpha
ABS	0.0309***		0.0308***	
	(0.00142)		(0.00141)	
Authors	0.104***		0.178***	
	(0.0157)		(0.0185)	
Pubyear	−0.226***		−0.229***	
	(0.00691)		(0.00691)	
Constant	457.4***	0.136***	463.2***	0.120***
	(13.89)	(0.0278)	(13.87)	(0.0280)
Observations	2,634	2,634	2,612	2,612
Pseudo r-squared	0.0633	0.0633	0.0655	0.0655

Notes: Standard errors in parentheses. ***$p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
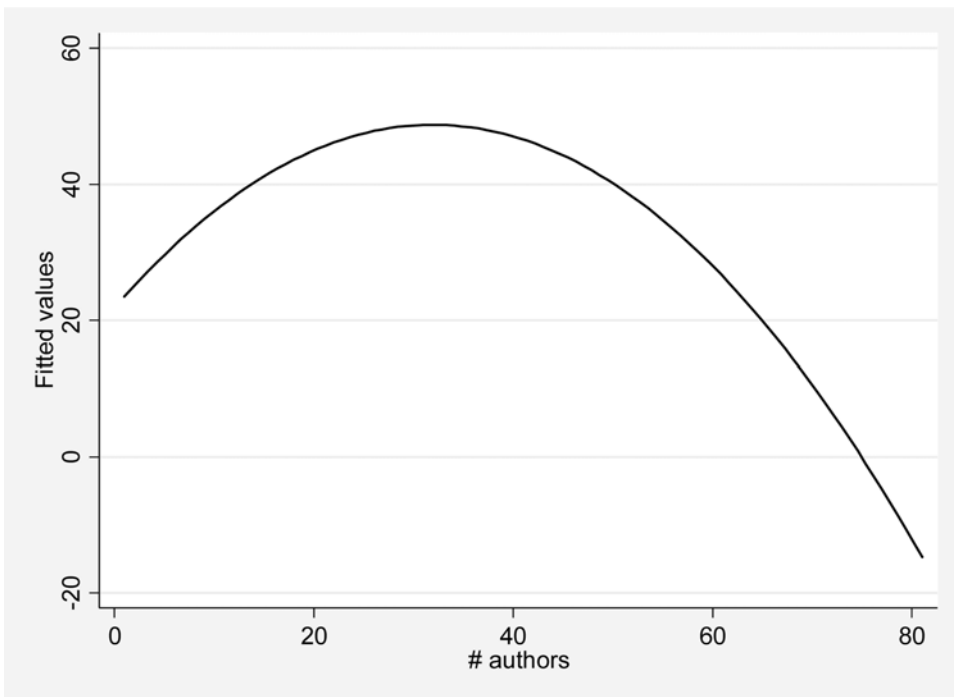
Figure 2. Curvilinear relationship between the number of authors and citation level.

Discussion

Studying citation patterns is important to advance knowledge about the publication system in academe and has practical implications for scholars, for individuals regarding their career development and publication decisions, for editors in terms of managing journals, for recruitment panels in making hiring decisions, for higher education managers when they evaluate existing faculty, and for policy-makers who evaluate the research of national institutions.

We studied the level of citations of papers published in journals in the field of management and organisation studies, aiming to identify factors that influence the level of a paper's citations, including specific factors such as journal quality and the number of co-authors. Our findings suggest that some of these factors do affect citations, offering a contribution to the field; publications and citations are critical for scholars and influence their achievement, thus determining the perception of the career success of academics (Adler and Harzing 2009; Baruch and Hall 2004). Our findings run counter to the claim that a high fraction of papers published in high-ranked journals remains uncited. Thus, they suggest that the peer-review system is functioning fairly well and that the research conducted is required, useful, and necessary for knowledge development. The findings also demonstrate the usefulness of the way the scientific community selects which manuscripts will be published and in which journals, and the process of academic knowledge construction.

The results have further implications regarding the 'never-cited' legend, which is revealed to be a myth – at least in the sample of published papers studied here. Our study shows that publication in high-ranked journals tends to pay off in terms of citations received across all management sub-disciplines, with some disciplinary variations. Thus, the apparent stylised fact is merely a justification for scholars to deviate from the ranking lists when targeting journals, particularly when citation numbers are an important criterion for career progression in their institutions.

We contribute to theory by supporting not only the self-fulfilling prophecy (Eden 1984) but also the perception that top journals are more selective and thus publish papers of high quality that tend

to gain more citations. This is in line with the logic of competitiveness and quality in academic knowledge creation (Baruch et al. 2008). Furthermore, higher education policy-makers may wish to acknowledge the variety of sub-disciplines and their specific needs instead of just assigning a single particular journal ranking list for research evaluation. University leaders may wish to rethink their internal evaluation procedures and bring them in line with the needs of the scholars in the sub-discipline concerned. There are slight differences between the citation patterns in the different disciplines; for instance, scholars in HRM, psychology, and sociology do not appear to benefit from co-authoring networks when aiming to boost their citations, whereas this is the case in all other sub-disciplines studied here.

Nonetheless, the findings ultimately deliver a positive message to management scholars – the scholarly voice is heard and used. We do build on the content of earlier works, and the 'never-cited' papers constitute a minor fraction of published papers. Similarly encouraging is the message that this situation is valid not only in high-prestige journals but also in low-ranked ones. This means that knowledge creation and dissemination in management and its sub-disciplines are healthy at the level of the wider academic community (Baruch et al. 2008; Birkinshaw, Lecuona, and Barwise 2016).

Our findings are also positive for the management field as a whole because they contradict the results presented by Abramo, D'Angelo, and Soldatenkova (2016) on top scientists in different engineering sub-disciplines. They found that even among top scientists, large fractions of the output are left uncited. In the sub-disciplines of management, these fractions seem to be rather low. In this context, a recent analysis by Birkinshaw, Lecuona, and Barwise (2016) is noteworthy; they identify factors that increase scholarly citations in journals bridging the research-practitioner gap. Such journals very rarely take high positions in journal ranking lists. Nonetheless, they may be good vehicles to boost citations.

Certainly, the literature on citation drivers has generated manifold insights on variables not included in our analyses. For instance, time since publication is a frequently studied variable. Other authors also consider the methods of analysis used in a paper, its length, or the affiliation of the authors (Antonakis et al. 2014; Birkinshaw, Lecuona, and Barwise 2016). While we are unable to attain this level of detail for the purposes here, it should be noted that the typical paper in our dataset was co-authored by two academics (i.e. the dataset contains 935 co-authored publications; the second largest group are single-authored papers with 700 occurrences). We used this typical paper to predict citations in the various years of publication, according to whether publication occurred in journals ranked ABS 3*, ABS 4*, or ABS 4**. Figure 3 confirms the pattern of older papers having more citations.

In the table abov the lower left should be Year 2005 ABS 4** Year 2010 ABS 4** Year 2015 ABS 4** Realistically, after a certain time, most papers will become obsolete owing to the development of new knowledge, and citations of older papers will decline (Tomas and Hult 2003), especially in the natural sciences (Pravdić and Pekorari 1985). Moreover, citations can only be added, not subtracted; thus, citations typically grow as time goes by, as the publication volume becomes larger. Although not separately hypothesised, the results in the regression table confirm that the more the time elapsed since publication, the more the number of citations. The coefficients in all subsamples on the publication year variable are negative and significant, implying that older articles benefit from a higher number of citations. This reflects the expected accumulation pattern as older articles have more time and thus more opportunities to collect citations.

Limitations and recommended future research

There are other factors that may contribute to the citation level of academic papers, and future studies may add them to the equation; these factors include individual factors such as gender (see Nielsen 2016 for a bibliometric analysis of gender bias in a single university) and ethnicity or organisational factors such as having staff members who are editors. Other factors may be confidential, such as internal processes within journals. Future studies may also be comparative, with more
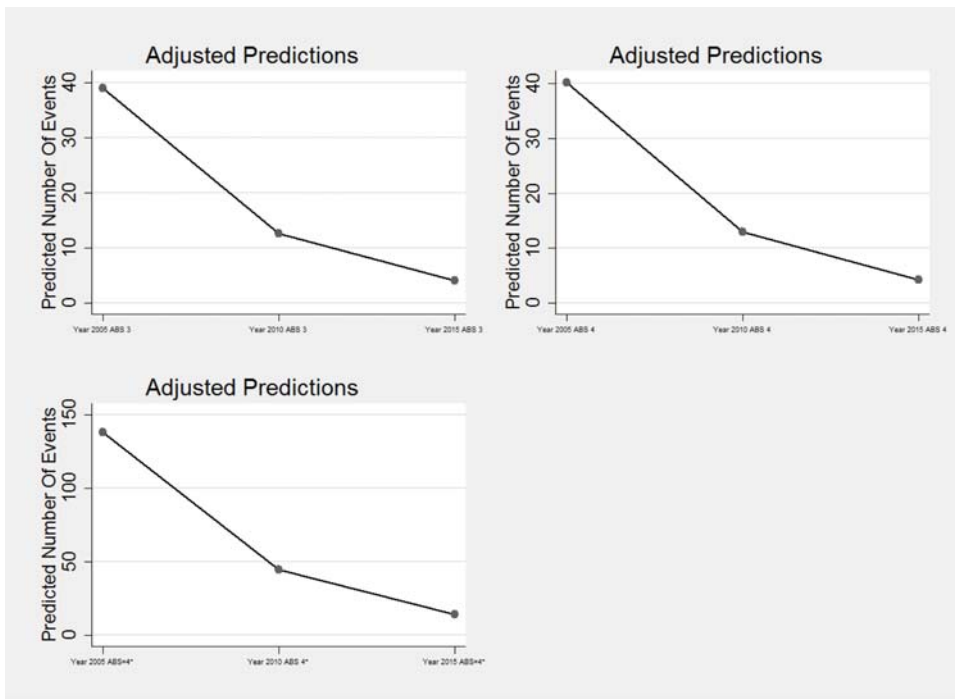
Figure 3. Predicted number of citations of typical paper profiles.

Notes: Typical paper with two co-authors; predicted citations by publication year and journal rank.

than one field of study covered. For example, Bosquet and Combes' (2013) investigation of citation patterns among French economists finds that overall publication numbers act as substitutes for citation patterns.

A second limitation is our reliance on the ABS 2015 list, which is only one journal ranking among many. While it allowed us to make our point, it may not be possible to apply the findings to other ranking lists (such as Harzing Journal List, the French CNRS or FNEG, or the VHB-Jourqual used in Germany); therefore, future work should aim for such comparisons. As explained earlier, the ABS list is a hybrid that contains expert judgments and citation data and thus may create an endogeneity issue. Nonetheless, most analyses of citations patterns contain such hybrid variables (Antonakis et al. 2014; Hanel and Haase 2017; Hoorani, Nair, and Gibbert 2019; Judge et al. 2007). Moreover, the reliance on citations taken from the Thompson-ISI database is not without criticism. Thus, our results are potentially very conservative estimations given the differences in citation counts on ISI and other sources. Additionally, the type of paper can be coded to distinguish between conceptual, qualitative, and quantitative works. Finally, Bornmann and Marx (2016) suggest that creative content can also be identified from an analysis of the cited references in a manuscript. This appears to be an interesting area for future research, and we are not aware of any such application in the management discipline, although Vogel, Hattke, and Petersen (2017) use structural holes as a proxy for innovation. The latter is not a direct creativity measure but a close neighbour. Hence, future research can use this as a stepping stone for assessing creative content.

Conclusions

Our results refute the myth that half or more of all published papers in management studies – both those published in top journals and in less-reputable journals – have never been cited. This offers a

positive message to the field, as it indicates that knowledge is not merely being produced by scholars but is also being used to facilitate further production of knowledge. However, one caveat remains. Indeed, the purpose of academic inquiry is to develop new knowledge and push the frontiers of human understanding. Ranking, citations, and reputation are important for individual scholars as well as their organisations, but these are only by-products of the knowledge creation process.

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Disclosure statement

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References

Abramo, G., C. A. D'Angelo, and A. Soldatenkova. 2016. "The Ratio of Top Scientists to the Academic Staff as an Indicator of the Competitive Strength of Universities." *Journal of Informetrics* 10 (2): 596–605.
Adler, N. J., and A. W. Harzing. 2009. "When Knowledge Wins: Transcending the Sense and Nonsense of Academic Rankings." *Academy of Management Learning & Education* 8 (1): 72–95.
"AJG Methodology". 2020. Academic Journals Guide, Charted Association of Business Schools www.charteredabs.org, accessed 15 July 2020, https://charteredabs.org/wp-content/uploads/2018/03/AJG2018-Methodology.pdf.
Aksnes, D. W., and G. Sivertsen. 2004. "The Effect of Highly Cited Papers on National Citation Indicators." *Scientometrics* 59 (2): 213–224.
Ale Ebrahim, N., H. Ebrahimian, M. Mousavi, and F. Tahriri. 2015. "Does a Long Reference List Guarantee More Citations? Analysis of Malaysian Highly Cited and Review Papers." *The International Journal of Management Science and Business* 1 (3): 6–15.
Althouse, B. M., J. D. West, C. T. Bergstrom, and T. Bergstrom. 2009. "Differences in Impact Factor Across Fields and Over Time." *Journal of the American Society for Information Science and Technology* 60 (1): 27–34.
Anninos, L. N. 2014. "Research Performance Evaluation: Some Critical Thoughts on Standard Bibliometric Indicators." *Studies in Higher Education* 39 (9): 1542–1561.
Antonakis, J., N. Bastardoz, Y. Liu, and C. A. Schriesheim. 2014. "What Makes Papers Highly Cited?" *Leadership Quarterly* 25 (1): 152–179.
Baruch, Y., A. Ghobadian, and M. Özbilgin. 2013. "Open Access – The Wrong Answer to A Complex Case: A Response to the Finch Report." *British Journal of Management* 24 (2): 147–155.
Baruch, Y., and D. T. Hall. 2004. "Preface for the JVB Special Issue on Careers in Academia." *Journal of Vocational Behavior* 64 (2): 237–240.
Baruch, Y., and B. Holtom. 2008. "Survey Response Rate Levels and Trends in Organizational Research." *Human Relations* 61 (8): 1139–1160.
Baruch, Y., A. Konrad, H. Aguinis, and W. H. Starbuck, eds. 2008. *Opening the Black Box of Editorship*. Basingstoke: Palgrave-Macmillan.
Baum, J. A. 2011. "Free-Riding on Power Laws: Questioning the Validity of the Impact Factor as a Measure of Research Quality in Organization Studies." *Organization* 18 (4): 449–466.
Bazeley, P. 2010. "Conceptualising Research Performance." *Studies in Higher Education* 35 (8): 889–903.
Bergman, E. M. L. 2012. "Finding Citations to Social Work Literature: The Relative Benefits of Using Web of Science, Scopus, or Google Scholar." *The Journal of Academic Librarianship* 38 (6): 370–379.
Birkinshaw, J., R. Lecuona, and P. Barwise. 2016. "The Relevance Gap in Business School Research: Which Academic Papers Are Cited in Managerial Bridge Journals?" *Academy of Management Learning & Education* 15 (4): 686–702.
Bornmann, L., and W. Marx. 2016. "The Journal Impact Factor and Alternative Metrics: A Variety of Bibliometric Measures Has Been Developed to Supplant the Impact Factor to Better Assess the Impact of Individual Research Papers." *EMBO Reports* 17 (8): 1094–1097.

Bosquet, C., and P.-P. Combes. 2013. "Are Academics Who Publish More Also More Cited? Individual Determinants of Publication and Citation Records." *Scientometrics* 97 (3): 831–857.

Bryman, A., and E. Bell. 2015. *Business Research Methods*. Oxford, Oxford University Press.

Byington, E. K., and W. Felps. 2017. "Solutions to the Credibility Crisis in Management Science." *Academy of Management Learning & Education* 16 (1): 142–162.

Callaham, M., R. L. Wears, and E. Weber. 2002. "Journal Prestige, Publication Bias, and Other Characteristics Associated with Citation of Published Studies in Peer-Reviewed Journals." *JAMA* 287 (21): 2847–2850.

Calma, A., and M. Davies. 2015. "Studies in Higher Education 1976–2013: A Retrospective Using Citation Network Analysis." *Studies in Higher Education* 40 (1): 4–21.

Campanario, M. 1993. "Consolation for the Scientist: Sometimes It Is Hard to Publish Papers That Are Later Highly-Cited." *Social Studies of Science* 23 (2): 342–362.

Clemens, E. S., W. W. Powell, K. McIlwaine, and D. Okamoto. 1995. "Careers in Print: Books, Journals, and Scholarly Reputations." *American Journal of Sociology* 102 (2): 433–494.

Corbyn, Z. 2010. "An Easy Way to Boost a Paper's Citations." *Nature* 406. doi:10.1038/news.2010.406.

Costas, R., T. N. van Leeuwen, and M. Bordons. 2012. "Referencing Patterns of Individual Researchers: Do Top Scientists Rely on More Extensive Information Sources?" *Journal of the American Society for Information Science and Technology* 63 (12): 2433–2450.

Day, N. E. 2011. "The Silent Majority: Manuscript Rejection and Its Impact on Scholars." *Academy of Management Learning & Education* 10 (4): 704–718.

Dipboye, R. L. 2006. "Peer Reviews in the Production of Knowledge: Why I Stopped Worrying and Learned to Appreciate the Flaws in the Review Process." In *Winning Reviews: A Guide for Evaluating Scholarly Writing*, edited by Yehuda Baruch, Sherry E. Sullivan, and Hazlon N. Schepmyer, 3–26. Basingstoke: Palgrave-Macmillan.

DuBois, F. L., and D. Reeb. 2000. "Ranking the International Business Journals." *Journal of International Business Studies* 31 (4): 689–704.

Eden, D. 1984. "Self-fulfilling Prophecy as a Management Tool: Harnessing Pygmalion." *Academy of Management Review* 9 (1): 64–73.

Frey, B. S., and K. Rost. 2010. "Do Rankings Reflect Research Quality?" *Journal of Applied Economic* 13 (1): 1–38.

Glänzel, W., and B. Thijs. 2004. "Does Co-Authorship Inflate the Share of Self-Citations?" *Scientometrics* 61 (3): 395–404.

González-Teruel, A., G. González-Alcaide, M. Barrios, and M. F. Abad-García. 2015. "Mapping Recent Information Behavior Research: An Analysis of Co-Authorship and Co-Citation Networks." *Scientometrics* 103 (2): 687–705.

Hamilton, D. P. 1990. "Publishing by–and for?–the Numbers." *Science* 250 (4986): 1331–1332.

Hanel, P. H., and J. Haase. 2017. "Predictors of Citation Rate in Psychology: Inconclusive Influence of Effect and Sample Size." *Frontiers in Psychology* 8: 1160.

Hargens, L. L. 1988. "Scholarly Consensus and Journal Rejection Rates." *American Sociological Review* 53 (1): 139–151.

Ho, Y. S., and J. Hartley. 2017. "Sleeping Beauties in Psychology." *Scientometrics* 110 (1): 301–305.

Hoorani, B. H., L. B. Nair, and M. Gibbert. 2019. "Designing for Impact: The Effect of Rigor and Case Study Design on Citations of Qualitative Case Studies in Management." *Scientometrics* 121 (1): 285–306.

Horta, Hugo, and João M. Santos. 2019. "Organisational Factors and Academic Research Agendas: An Analysis of Academics in the Social Sciences." *Studies in Higher Education*. Available online first at: doi:10.1080/03075079.2019.1612351.

Hu, Z., and Y. Wu. 2014. "Regularity in the Time-Dependent Distribution of the Percentage of Never-Cited Papers: An Empirical Pilot Study Based on the Six Journals." *Journal of Informetrics* 8 (1): 136–146.

Ioannidis, J. P. 2015. "A Generalized View of Self-Citation: Direct, Co-Author, Collaborative, and Coercive Induced Self-Citation." *Journal of Psychosomatic Research* 78 (1): 7–11.

Judge, T. A., D. M. Cable, A. E. Colbert, and S. L. Rynes. 2007. "What Causes a Management Article to Be Cited—Article, Author, or Journal?" *Academy of Management Journal* 50 (3): 491–506.

Keyes, D. 1959. *Flowers for Algernon*. London: Mercury Press.

Kulkarni, A. V., B. Aziz, I. Shams, and J. W. Busse. 2009. "Comparisons of Citations in Web of Science, Scopus, and Google Scholar for Articles Published in General Medical Journals." *Journal of the American Medical Association* 302 (10): 1092–1096.

Lance, C. E. and R. J. Vandenberg, eds. 2009. *Statistical and Methodological Myths and Urban Legends: Doctrine, Verity and Fable in the Organizational and Social Sciences*. NY: Routledge.

Li, J. 2014. "Citation Curves of "All-Elements-Sleeping-Beauties": "Flash in the Pan" First and Then "Delayed Recognition"." *Scientometrics* 100 (2): 595–601.

Maslow, A. H. 1943. "A Theory of Human Motivation." *Psychological Review* 50 (4): 370–396.

Merton, R. K. 1968. "The Matthew Effect in Science: The Reward and Communication Systems of Science Are Considered." *Science* 159 (3810): 56–63.

Mingers, J., and H. Willmott. 2013. "Taylorizing Business School Research: On the 'One Best Way' Performative Effects of Journal Ranking Lists." *Human Relations* 66 (8): 1051–1073.

Mohammadi, E., M. Thelwall, S. Haustein, and V. Larivière. 2015. "Who Reads Research Articles? An Alt Metrics Analysis of Mendeley User Categories." *Journal of the Association for Information Science and Technology* 66 (9): 1832–1846.

Nicolaisen, J., and T. F. Frandsen. 2019. "Zero Impact: A Large-Scale Study of Uncitedness." *Scientometrics* 119 (2): 1227–1254.

Nielsen, M. W. 2016. "Gender Inequality and Research Performance: Moving Beyond Individual-Meritocratic Explanations of Academic Advancement." *Studies in Higher Education* 41 (11): 2044–2060.

Osterloh, M., and B. S. Frey. 2015. "Ranking Games." *Evaluation Review* 39 (1): 102–129.

Pendlebury, D. A. 2009. "The Use and Misuse of Journal Metrics and Other Citation Indicators." *Archivum Immunologiae Et Therapiae Experimentalis* 57 (1): 1.

Persson, O., W. Glänzel, and R. Danell. 2004. "Inflationary Bibliometric Values: The Role of Scientific Collaboration and the Need for Relative Indicators in Evaluative Studies." *Scientometrics* 60 (3): 421–432.

Podsakoff, P. M., N. P. Podsakoff, P. Mishra, and C. Escue. 2018. "Can Early-Career Scholars Conduct Impactful Research? Playing "Small Ball" Versus "Swinging for the Fences"." *Academy of Management Learning & Education* 17 (4): 496–531.

Pravdić, N., and R. Pekorari. 1985. "The Citing Practices of the Authors to the National Journals in Mathematics, Physics, and Chemistry." *Scientometrics* 8 (3–4): 233–246.

Prichard, C. 2013. "All the Lonely Papers, Where Do They All Belong?" *Organization* 20 (1): 143–150.

Remler, D. 2014. "Are 90% of Academic Papers Really Never Cited? Reviewing the Literature on Academic Citations." *Impact of Social Sciences Blog*. https://blogs.lse.ac.uk/impactofsocialsciences/2014/04/23/academic-papers-citation-rates-remler/.

Saunders, M., P. Lewis, and A. Thornhill. 2016. *Research Methods for Business Students*. 7th ed. Harlow, UK: Pearson.

Seglen, P. O. 1997. "Citations and Journal Impact Factors: Questionable Indicators of Research Quality." *Allergy* 52 (11): 1050–1056.

Simon, H. A. 1959. "Theories of Decision-Making in Economics and Behavioral Science." *The American Economic Review* 49 (3): 253–283.

Starbuck, W. H. 2003. "Turning Lemons into Lemonade: Where Is the Value in Peer Reviews?" *Journal of Management Inquiry* 12 (4): 344–351.

Starbuck, W. H. 2005. "How Much Better are the Most-Prestigious Journals? The Statistics of Academic Publication." *Organization Science* 16 (2): 180–200.

Subramaniam, M., and M. A. Youndt. 2005. "The Influence of Intellectual Capital on the Types of Innovative Capabilities." *Academy of Management Journal* 48 (3): 450–463.

Tomas, G., and M. Hult. 2003. "An Integration of Thoughts on Knowledge Management." *Decision Sciences* 34 (2): 189–195.

Vandenberg, R. J. 2006. "Introduction: Statistical and Methodological Myths and Urban Legends: Where, Pray Tell, Did They Get This Idea?" *Organizational Research Methods* 9 (2): 194–201.

Van Noorden, R. 2017. "The Science That's Never Been Cited." *Nature* 552 (7684): 162–164.

Vogel, R., F. Hattke, and J. Petersen. 2017. "Journal Rankings in Management and Business Studies: What Rules Do We Play By?" *Research Policy* 46 (10): 1707–1722.

Xu, Xin, Heath Rose, and Alis Oancea. 2019. "Incentivising International Publications: Institutional Policymaking in Chinese Higher Education." *Studies in Higher Education*. Available online first at: doi:10.1080/03075079.2019.1672646.

Zhang, L., R. Rousseau, and W. Glänzel. 2016. "Diversity of References as an Indicator of the Interdisciplinarity of Journals: Taking Similarity Between Subject Fields into Account." *Journal of the Association for Information Science and Technology* 67 (5): 1257–1265.

Appendix

Table A1. Summary of journal names, acronyms, ABS rank and ABS sub-discipline.

Top (4 **)	Acronym	4*	Acronym
Administrative Science Quarterly	ASQ	Journal of Public Administration Research and Theory	JPART
Academy of Management Journal	AMJ	Leadership Quarterly	LQ
American Journal of Sociology	AJS	Journal of Organizational Behavior	JOB
Journal of Management	JOM	Public Administration Review	PAR
3*		**1–2***	
Group & Organization Management	GOM	Organizational Dynamics	OD
Journal of Management Inquiry	JMI	Journal of Organizational Change Management	JOCM
Applied Psychology: An International Review	APIR	Journal of Applied Social Psychology	JASP
British Journal of Sociology	BJS	Personnel Review	PR
International Review of Administrative Science	IRAS	Administration & Society	A&S
Journal of Cross Cultural Psychology	JCCP		

Table A2. Most cited papers 2005–2016.

Author	Journal	Year	Total Cites	Full title
Uzzi, B.	AJOS	2005	426	Collaboration and creativity: The small world problem.
Jansen, JJP	AMJ	2005	457	Managing potential and realised absorptive capacity: How do organizational antecedents matter?
Salanova, M.	JOB	2005	461	Linking organizational resources and work engagement to employee performance and custom.
MacKenzie, SB	JOB	2005	474	The problem of measurement model misspecification in behavioral and organizational research and some recommended solutions.
Obstfeld, D.	ASQ	2005	479	Social networks, the Tertius lungens and orientation involvement in innovation
Powell, W.W.	AJOS	2005	586	Network dynamics and field evolution: The growth of interorganizational collaboration.
Subramaniam, M.	AMJ	2005	688	The influence of intellectual capital on the types of innovative capabilities.