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Abstract

In the marketing discipline, many articles claim to contribute to practice and society. However, the extent to which this is the case depends on how research is reported in newspapers and social media. Relying on the theory of news values, the authors develop a broad conceptual model to explain the reporting of academic research in popular media. Using yearly data, they test this model with a sample of 15,900 marketing-related articles published between 2011 and 2019. The results show that nearly 90% of articles receive no mention in any news media and about 50% of articles receive no mention in social media. However, the articles picked up by popular media have a set of common characteristics that researchers can leverage to create more visibility of their work. For example, only 3% of articles are co-authored by a practitioner, but those articles get 91% more citations in news media and 43% more citations in social media. Having a female author on the team is associated with 29% more news citations and 18% more social media citations. The authors also demonstrate the relevance of social and news media for the practical impact of the reported research.

Keywords

academic articles; bibliometric analysis; big data; citations; managerial impact; managerial importance; managerial relevance; media coverage

Introduction

Over the last decade, over 15,000 peer-reviewed articles have been published in the leading marketing journals, with many, if not most, claiming to contribute to practice and ultimately improve managerial decision-making. However, the degree to which marketing research has an impact on business and society most likely depends on the extent to which the research is reported in newspapers and social media, and several recent studies have highlighted the role of news media and social media in shaping the perception of society and businesses (Chen et al. 2019, Van Heerde, Gijsbrechts, and Pauwels 2015; Stäbler and Fischer 2020).

Anecdotal evidence suggests that media coverage of academic research varies strongly, and while some research articles receive considerable attention in the news media, nine out of ten academic papers remain unnoticed, and in social media, four out of ten academic papers receive no attention. However, occasionally notable exceptions occur— a paper about calorie-labeling (Breck et al. 2017) has been covered in more than 80 newspaper articles and 100 social media posts (Altmetrics 2020). A paper by Tellis et al. (2019) received 14 mentions in the popular press and 43 mentions on social media. The average article¹ in our database, however, receives only 0.6 press and 3.5 social media mentions.

Why does media coverage of academic research vary so enormously? What factors determine whether research is covered in popular media? Is it possible to identify the characteristics of journals, articles, or authors that are more likely to lead to press and social media coverage than others? Prior studies in marketing have analyzed various citation drivers in academic journals, such as quality, domain, visibility, writing style, and personal promotion (Roberts, Kayande, and Stremersch 2014; Stremersch, Verniers, and Verhoef 2007; Warren et al.

¹ The descriptive statistics for news and social media citations are based on a sample of 15,900 articles published between 2011 and 2019.

2021). However, this research has largely ignored how mainstream media, including news media and social media, report on marketing articles. Researchers interested in creating awareness for their work have strong incentives to understand journalists' basis for reporting about academic research and under which conditions research is discussed on social media. In a recent study, Jedidi et al. (2021) investigate the extent to which academic articles speak about topics discussed in practitioner outlets. Our focus is different since we look in the opposite direction by analyzing how academic research diffuses into mainstream media.

We formulate three central research questions. First, which factors determine citations of academic research in the news and social media? Second, how do these factors differ between social media, news media, and academic journals? And third, how do newspaper and social media citations influence marketing practice? In line with prior research (Mingers and Xu 2010), we assume that drivers of citations may be specific to the journal (e.g., subject domain), the article (e.g., reading ease), and the authors (e.g., university affiliation). We investigate how news media (e.g., *New York Times*) and social media platforms (e.g., Facebook and Twitter) report on more than 15,000 marketing articles published in the top marketing journals between 2011 and 2019, and we leverage more than 90,000 data points per media channel. Our dataset was compiled by augmenting information from two external databases (Alemtrics and Dimensions) with extensive manual data collection. In addition, we validate prior findings regarding academic media citations based on a sample of marketing articles since 1937.

The aim of our study is to help researchers draw attention to their work from outside the academic community. Many marketing scholars "worry that the research published in top marketing journals has little influence on marketers, policymakers, consumers, or even other scholars" (Warren et al. 2021, p. 3). Faculty research incentives tend to be misaligned, leading to

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a potential conflict between faculty and deans (Stremersch, Winer, and Camacho, 2021). These observations directly contradict the principles of responsible research, which states that research should be credible, useful for society at large, and apply a larger stakeholder perspective (Haenlein et al., 2021). The principal aim of many marketing scholars is to address issues of importance, operationalized by the number and status of marketing stakeholders who change their behavior in meaningful ways in response to the research (Kohli and Haenlein 2020a; Kohli and Haenlein 2020b; Wierenga 2020; Stremersch 2020). Such behavior change is more likely if research results are communicated through high-reach media and when topics investigated break traditional boundaries (MacInnis et al., 2020) and has ecological value, i.e., reflects what is relevant to marketing stakeholders (Van Heerde et al., 2021). Prior research has pointed out the dominant role of mass media in shaping society's perception, including managers and consumers (Chen et al. 2019). Press media citations partially determine the extent to which researchers are considered leaders in a particular research field, and improved visibility may help researchers attract funding from businesses and policymakers. On a societal level, public media coverage strengthens the legitimacy of science.

We take a quantitative approach to understanding the factors that drive the coverage of academic research in high-reach newspapers and social media. Our analysis provides insights for researchers on how to address the right channel with the right content to maximize impact. We uncover critical and actionable success factors under researchers' control that influence media coverage. We give guidance on how structural factors (e.g., number of co-authors) and content-specific decisions (e.g., sub-domain of research) influence the editorial decision of newspapers and social media to cover academic content. We also show how journal-specific drivers (e.g., frequency of publication) affect media coverage—evidence that helps editors make decisions

that may improve a journal's visibility in news and social media. Finally, our study demonstrates how media citations determine the impact of research on practice.

Related Literature

Three main literature streams are relevant for our study. The first line of research focuses on how marketing articles earn *academic* citations. Baumgartner and Pieters (2003) identify conditions under which marketing research contributes to the overall scientific citations across disciplines and time. Roberts et al. (2014) illustrate how marketing topics in practice relate to academic citations. Steremersch et al. (2007) and Stremersch et al. (2015) investigate a wide range of critical success factors of academic citations such as universalism, social constructivism, and presentation. These constructs represent "what" (e.g., the domain of research), "who" (e.g., authors' publication and record), and "how" (e.g., expositional clarity) of a message should be communicated to receive academic citations. More recently, Warren et al. (2021) investigate the critical role of writing style in obtaining academic citations. These studies help identify potential factors that explain how marketing research may attract the attention of the popular press. The mechanisms of how journalists, editors, and consumers of popular press select and cite research may differ greatly from the process of researchers and academic journals.

A second relevant stream comes from outside the marketing discipline and includes studies that have investigated news media citations in fields such as medicine (e.g., Entwistle 1995), management (e.g., Minger and Xu 2010), economics, and journalism (e.g., Elmer et al. 2008). The vast majority of these studies use qualitative case study approaches or concentrate on single drivers, which limits the generalizability of their findings. The only exceptions appear in the medical field, where some large-scale studies exist (e.g., Dumas-Mallet et al. 2017). However, their context differs substantially from ours because press coverage on medical issues

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is often driven by unique medical-specific drivers. Thus, to the best of our knowledge, our research is the first to systematically investigate news media citations of a wide range of articles in the marketing discipline. As prior research has pointed to the interplay between news media citations and social media citations (e.g., Hewett et al. 2016), we also study the interplay between the different citation sources (i.e., news media, social media, and academic citations).

| | E | mpirical Work | | |
|--|-----------------------|-------------------------|------------------------------|------------------|
| Authors | Academic Citations | News media Citations | Social Media Citations | Focal Discipline |
| Warren et al. (2021) | \checkmark | | | Marketing |
| Baumgartner and Pieters (2003) | \checkmark | | | Marketing |
| Stremersch, Verniers, and Verhoef (2007) | \checkmark | | | Marketing |
| Stremersch et al. (2015) | \checkmark | | | Marketing |
| Roberts, Kayande and Stremersch (2014) | \checkmark | | | Marketing |
| Donthu, Kumar, and Pattnaik (2020) | \checkmark | | | Management |
| Minger and Xu (2010) | \checkmark | | | Management |
| Entwistle (1995) | \checkmark | \checkmark | | Medicine |
| Lai and Lane (2009) | | \checkmark | | Medicine |
| Dumas-Mallet et al. (2017) | | \checkmark | | Medicine |
| Elmer, Badenschier, and Wormer (2008) | | \checkmark | | Journalism |
| Hijmans, Pleijter, and Wester (2003) | | \checkmark | | Journalism |
| This study | \checkmark | \checkmark | \checkmark | Marketing |

Table 1. Illustrative Research on Citation Analysis in Various Disciplines.

Notes: Our aim is not to provide an exhaustive overview but to present a set of representative studies. We do not include research on trade publications of relevance in specific disciplines (e.g., accounting) or research on investor relations

Our study also relates to a third rich research stream—in journalism and communications sciences—that aims to explain the generation of news. From this research stream, we borrow the theory of news values (Galtung and Ruge 1965) to explain under which conditions the popular press cites academic research. The theory of news values applies to online newspapers and social media (Harcup and O'Neill 2017) and has been used frequently in empirical research (e.g., Galtung and Ruge 1965; Harcup and O'Neill 2001), with recent adoption in the marketing literature (Stäbler and Fischer 2020). Table 1 shows illustrative research on citation analysis in

different disciplines.

Theoretical Model

We rely on the theory of news values to explain under which conditions new information (e.g., the publication of a research article) becomes news. The theory of news values, which applies to conventional news sources and also social media (Araujo and van der Meer 2020), suggests that the more "news factors" an article exhibits the more likely journalists are to report on it. In developing critical success factors applicable to academic research, we refer to both the original news factors (Galtung and Ruge 1965) and their significant extension (Harcup and O'Neil 2001).

An example of a news factor is membership in the "power elite"—the coterie of influential and well-known individuals and institutions (Galtung and Ruge 1965). We operationalize this factor as the prestige of the institutions authors are affiliated with. Another news factor refers to the ambiguity of an event. The more clearly an event can be understood and interpreted without multiple meanings, the greater its chance of being selected. To reflect the level of ambiguity, we measure the reading ease of an article. Similarly, the theory of news values suggests that stories with an entertainment character (e.g., related to social issues or humor) are more likely to be reported on because these topics appeal to a larger audience group. We use linguistic word counting to determine the degree to which an article falls into the entertainment domain.

These and other news factors, their meaning, and how they are operationalized in the context of academic research articles are explained in detail in Appendix 1. Figure 1 shows the full conceptual model. These theoretically derived news factors form the basis of our analysis. We discussed these factors with newspaper editors, the PR departments of academic journals, and fellow researchers to find the best way to apply them to news media and social media. In line

with prior research (Mingers and Xu 2010), we group the drivers depending on whether they are specific to the article (e.g., reading ease), authors (e.g., gender), or the journal (e.g., quality). In addition, we screened relevant empirical literature investigating drivers of academic citations (e.g., Stremersch et al. 2015) to identify other variables to consider.





Notes: We investigate the independencies of all outcome variables by introducing lagged variables of the respective media channels. ^aIn an additional analysis we show that news media and social media citations are the essential drivers for practical impact.

Expectations of Drivers' Impact on News and Social Media Coverage

As our conceptual model shows, drivers fall into three main categories: article-specific drivers,

author-specific drivers, and journal-specific drivers.

Article-specific Drivers

A large category of drivers relates to factors exhibited by the article itself.

Number of authors (+). We predict that more authors can create more attention for the research. This effect is also supported by prior empirical research (Leimu and Koricheva 2005, Stremersch et al. 2015).

Accessibility of the article (+). Many academic articles are subject to paywall restrictions of journal publishers. Therefore, we assume that articles available through open access are more likely to be read and distributed, leading to more citations in news media and social media. Prior empirical research suggests a positive effect of open access publications on citations (Bergh, Perry, and Hanke 2006).

Practitioner involvement (+). Practitioners as co-authors are beneficial, offering human capital advantages over academic-only researcher teams (Lin and Bozeman 2006), and companies are likely to promote an employee's research—a response likely to positively influence citations. Thus, we expect that papers with a practitioner involved are likely to have more news and social media citations.

Factors encompassing drivers may also link to the subject of the article, which may be related to a specific research domain and to entertainment.

Different research domains (+/–). An event may be more newsworthy if its topic and subject domain fit into the overall composition or balance of a newspaper or news broadcast (Galtung and Ruge 1965). We perform an exploratory investigation of the top six research domains with the highest frequency of occurrence within our data. Most research published in marketing journals deals with questions within management and commerce (54%), which we use as a reference for our analysis. In addition, we include the categories of psychology and cognitive science (12%), ethics, philosophy, and religious studies (11%), information and computing science (9%), economics (9%), and medical and health studies, as well as those

relating to human society (3%). We capture other topics that may be reported to a smaller extent in the control group "other categories" (4%).

Entertainment domain (+/–). The theory of news values suggests that events are covered not only because they provide serious information but also because they entertain the reader (Harcup and O'Neil 2001). Entertaining articles are humorous or deal with topics such as sex and eroticism, the environment, and social responsibility. Such stories allow for more straightforward storytelling, an approach that is essential for journalists to reach a large audience.

Final considerations relate to the writing style employed in the article, as articles make little impact if the writing is unclear (Warren et al. 2021). We assume that news outlets initially focus primarily on the abstract, and we derive a series of factors related to the abstract's writing style.

Valence (Negativity [+]). Several studies mention that the psychological impact of negative information exceeds the impact of positive information (e.g., Baumeister et al. 2001). Further, negative news is seen as unambiguous and consensual and generally more likely to be unexpected (Galtung and Ruge 1965). Thus, we suggest that negative stories receive more press media citations than positive news.

Reading ease (+). The theory of news values suggests that the more clearly an event can be understood and interpreted, the greater its chance of being selected. We thus predict that reading ease positively influences news and social media citations.

Use of buzz words (+). The theory of news values also suggests that unexpected and surprising content is more likely to be selected as news because it contrasts with prior beliefs and thoughts (Harcup and O'Neil 2001). Similarly, some stories simply have more appeal than others, particularly those related to the the excessive size or impact of an event (Galtung and

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Ruge 1965). A paper using buzz words is likely to be cited more frequently than articles of research that do not use buzz words.

Author-specific Drivers

Female (+). We predict articles with at least one female author to have higher news and social media citations. Long-standing social norms and gender roles (even if outdated today) lead to unconscious biases that women must work harder to get promoted. Consequently, female authors might be more likely to put more resources than males into promoting their research in popular media or be more skilled in doing so (Lutchmaya et al. 2001; Roter et al. 2002). Relatedly, journalists and editors may be more likely to report on research articles of female authors to change stereotype-related thinking in society (e.g., Shor et al. 2019).

Author's social media presence (+). We predict that an author's social media presence increases the number of popular press media citations. Internet users are likely to rely on popular search engines (e.g., Google) to identify potential experts. If a researcher has received social media mentions for her prior work, she will likely appear prominently on such search engines. Twitter is, for example, indexed by Google and receives high search ranks. Therefore, prior social media presence creates visibility, which should, in turn, increase the chances of a researcher (and her work) to be identified by the authors of news and social media posts. This view is consistent with the theory of news values, which states that events involving people or organizations (e.g., journals) who are already well-known to a potential readership are more likely to be covered in the popular press.

U.S. school affiliation (+). The actions of elites are seen as more consequential, and thus, are more likely to be selected (Galtung and Ruge 1965), and research by marketing scholars affiliated with US institutions receives more academic citations than the work of non-US-based

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marketing scholars (Stremersch and Verhoef 2005), possibly because a more significant part of the research domain is located in the United States, giving marketing scholars with U.S. affiliations increased visibility.

Top 10 school (+). In line with the theory of news values, we predict that stories involving powerful and well-known institutions are more likely to receive high media coverage. Specifically, we predict a marketing scholar's affiliation with a reputable university increases social and news media citations, since top schools are associated with higher credibility and quality.

Journal-specific Drivers

Quality (+). As prior empirical research showing that journal rankings influence citations (Stremersch et al. 2007; Judge, Cable, Colbert, and Rynes 2007), we predict that a high-quality journal article receives more media attention.

Longevity (+). We expect a journal that has been published for a considerable period to get more news media and social media citations than a relatively new journal. Over time, journals become more familiar to journalists and editors and easier to read.

Publication frequency (+). A journal published frequently might be better known than a journal published only occasionally, and publication frequency may be interpreted as a sign of journal quality. Therefore, we assume that articles published in a journal with high publication frequency are more likely to receive social and news media citations.

U.S. journal (+). We argue that US journals receive more attention because "elite" nations may have greater visbility (Stremersch and Verhoef 2005). In addition, actions of elites are seen as more consequential, and thus, may be more likely to receive attention (Galtung and Ruge 1965).

Journal's social media presence (+). The mere existence of a journal's social media profile on Facebook or Twitter may increase news and social media citations (Drury 2008). First, social media channels give journalists and consumers additional room to discuss academic research, and as journals communicate and advertise published papers on social media channels, consumers and journalists become aware of their research: Twitter accounts lead to more article downloads and citations (e.g., Shuai, Pepe, and Bollen 2012), and the use of Twitter is beneficial to generate visibility and impact because researchers can share information about their publications to a broad audience (Schnitzler, Davies, Ross, and Harris 2016).

Independencies of News Media, Social Media, and Academic Citations

Social and news media citations (+). Prior research has shown that social media coverage is highly correlated with coverage in traditional news media (Hewett, Rand, Rust, and van Heerde 2016), as journalists and editors use social media to discern which topics are currently demanded by consumers. The theory of news values also suggests that social media may predict something to happen, thus evoking a mental "pre-image" of an event. Consumers active on social media also refer to articles discussed in newspapers.

Academic citations (+/-). While the interplay between social and news media citations has been analyzed, how academic citations enter the picture is less clear. Research studies that are highly relevant to an academic audience and that may receive numerous academic citations may not be of much consequence to a broader non-academic audience. On the other hand, researchers may cite literature they believe is important for the entire field. Since which effect dominates is not clear, we explore how academic citations influence mainstream media.

Data

Data Sources

We collaborate with two database providers: Altmetrics[®], which granted us access to data on citations of marketing articles over time in online newspapers and social media, and Dimensions[®], which provided us with access to data on citations in academic journals. To operationalize the factors in our conceptual framework, we greatly enriched these two datasets with data collected manually from secondary sources.

Sample of Academic Articles

Our sample of academic articles includes articles published in the 41 most significant journals in the field of marketing (Baumgartner and Pieters (2001). We investigate all articles published in these journals between January 2011 and October 2019 that are tracked by Altmetrics and have a valid DOI—a unique identifier that classifies academic research. This sample consists of 15,900 unique articles comprising a great variety of conceptual and empirical papers. We exclude book reviews, retraction notes, and duplicates. We investigate the impact of the proposed drivers on social media and news media citations. To determine the impact of those drivers on academic citations, we additionally included 10,711 articles published in those journals between 1937 and 2010, leading to a total sample of 26,611 articles.

Sample of News Media and Social Media Channels

The sample of news media channels we use to measure news media citations includes over 2,900 English and non-English global online news outlets covering high-reach newspapers in both developed countries (e.g., *New York Times*) and emerging economies (e.g., *Times of India*).²

The sample of social media channels used to measure social media citations includes the

² For a detailed list of journals covered, see https://www.altmetric.com/about-our-data/our-sources/news/

world's largest social media platforms: Facebook, Google+, Linkedin, Pinterest, Twitter, and Weibo. Prior research has relied mostly on Facebook and Twitter to proxy social media attention (e.g., Hewett et al. 2016; Mochon et al. 2017).

Measurement of News Media, Social Media, and Academic Citations

Altmetrics collects citations in news and social media by tracking a manually curated list of RSS feeds from news websites. Altmetrics picks up mentions of articles if the news article or the social media post contains a direct hyperlink to a scholarly paper or if it consists of unique identifiers such as the paper's title, DOI, SSRN, or URN.

While this approach works in most cases, not all sources use links or scholarly identifiers when discussing research. Altmetrics accommodates this absence by using text mining.³ Since text mining relies on references that match with metadata registered in Crossref, this approach can work on sources that are written in various languages. To avoid incorrect matching (leading to false positives), Altmetrics requires basic metadata to create a successful final match, such as the publication date, author, and journal title.

A robust methodology and extensive coverage have made Altmetrics a standard for many academic journals (including the *Journal of Marketing*) to advertise and market their papers. Its approach has been validated by academic research (e.g., Trueger et al. 2015). Consistent with prior literature on academic citations, we use yearly data and employed Python 3.7 to scrape the data from the Altmetrics explorer webpage. Citations in academic journals stem from the Dimensions database. We manually collected yearly academic citations from the Dimensions webpage for all articles from October 1937 to October 2019.

³ For details on the approach, see https://www.altmetric.com/about-our-data/how-it-works/; https://help.altmetric.com/support/solutions/articles/6000235999-news-and-mainstream-media; https://help.altmetric.com/support/solutions/articles/6000235936-facebook

Descriptive Statistics on Citations

Table 2 reports count statistics of the top three articles of news media, social media, and academic citations. We also highlight descriptive statistics of news media, social media, and academic citations by journal in Table 3. Looking at news media citations, the top three journals are the *Journal of Consumer Research, Journal of Consumer Psychology*, and *Journal of Public Policy and Marketing*. For social media citations, the *Journal of Economic Psychology, Journal of Consumer Research*, and *Journal of Marketing Management* are leaders. For academic citations, the *Journal of Marketing, Journal of Consumer Research*, and *Journal of Consumer Research*, and *Journal of Consumer Research*, and *Journal of Marketing Management* are leaders. For academic citations, the *Journal of Marketing, Journal of Consumer Research*, and *Journal of Marketing Management* are leaders. For academic citations, the *Journal of Marketing, Journal of Consumer Research*, and *Journal of Consumer Research*, and *Journal of Consumer Research*, and *Journal of the Academy of Marketing Science* are in the top place.

| Most Cited Article in | | | | | | | | |
|-----------------------|---|--|--|--|--|--|--|--|
| Rank | News Media | Social Media | Academic Journals | | | | | |
| 1 | Werle, Carolina O. C.; Wansink, Brian; Payne, Collin R. (2014). Is it fun or exercise? The framing of physical activity biases subsequent snacking. <i>Marketing Letters</i> [207] | Powdthavee, Nattavudh; Riyanto, Yohanes E.; Knetsch, Jack L. (2018). Lower-rated publications do lower academics' judgments of publication lists: Evidence from a survey experiment of economists. <i>Journal of</i> <i>Economic Psychology</i> [1,134] | Fornell, Claes; Larcker, David F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. <i>Journal of</i> <i>Marketing Research [19,740]</i> | | | | | |
| 2 | David, Meredith E.; Haws, Kelly L. (2016). Saying "No" to Cake or "Yes" to Kale: Approach and Avoidance Strategies in Pursuit of Health Goals. <i>Psychology &</i> <i>Marketing</i> [119] | Sarwar, Chaudhary Imran (2012). Future of Ethically Effective Leadership. <i>Journal of Business Ethics</i> [730] | Bagozzi, Richard P.; Yi, Youjae (1988). On the Evaluation of Structural Equation Models. Journal of the Academy of Marketing Science [7,568] | | | | | |
| 3 | Newman, Kevin P.; Brucks, Merrie (2016). When are natural and urban environments restorative? The impact of environmental compatibility on self-control restoration. <i>Journal of</i> <i>Consumer Psychology</i> [112] | Mehta, Ravi; Zhu, Rui (Juliet); Cheema, Amar (2012). Is Noise Always Bad? Exploring the Effects of Ambient Noise on Creative Cognition. <i>Journal</i> <i>of Consumer Research</i> [617] | Davis, Fred D.; Bagozzi, Richard P.; Warshaw, Paul R. User Acceptance of Computer Technology: A Comparison of Two Theoretical Models (1989). <i>Management Science</i> [5,776] | | | | | |

Table 3. Most Cited Articles in News Media, Social Media, and Academic Journals.

Notes: Count of citations in square brackets

| | News Media | | Social Media | | Academic Media | | Media | | |
|---|------------|----------|--------------|------|----------------|------|-------|---------|-------|
| | 0 | Citation | S | (| Citations | | | Citatic | ons |
| | Mean | S.D. | Max | Mean | S.D. | Max | Mean | S.D. | Max |
| Average of all journals | 0.59 | 3.93 | 207 | 3.59 | 16.81 | 1134 | 50 | 196 | 19740 |
| Top marketing journals | | | | | | | | | |
| Journal of Marketing | 1.57 | 4.73 | 59 | 3.56 | 9.64 | 134 | 148 | 391 | 4874 |
| Journal of Marketing Research | 1.77 | 7.06 | 76 | 3.13 | 6.35 | 62 | 93 | 697 | 19740 |
| Journal of Consumer Research | 3.64 | 8.49 | 88 | 9.33 | 29.72 | 617 | 97 | 219 | 3085 |
| Marketing Science | 1.01 | 3.76 | 48 | 2.38 | 9.89 | 140 | 52 | 96 | 1381 |
| Management Science | 0.64 | 3.45 | 62 | 3.93 | 12.51 | 222 | 68 | 214 | 5776 |
| International Journal of Research in Marketing | 0.30 | 1.38 | 12 | 1.77 | 2.84 | 21 | 41 | 89 | 897 |
| Other marketing journals | | | | | | | | | |
| Business Horizons | 0.23 | 1.03 | 8 | 5.55 | 8.77 | 115 | 37 | 221 | 4731 |
| California Management Review | 0.33 | 1.60 | 14 | 6.23 | 21.14 | 222 | 67 | 138 | 1441 |
| Decision Sciences | 0.16 | 1.16 | 12 | 0.56 | 2.76 | 37 | 37 | 107 | 1714 |
| European Journal of Marketing | 0.11 | 0.70 | 9 | 1.24 | 3.23 | 45 | 34 | 76 | 1554 |
| Industrial Marketing Management | 0.05 | 0.47 | 8 | 1.71 | 5.31 | 94 | 32 | 61 | 914 |
| Journal of Advertising | 0.30 | 1.28 | 15 | 3.72 | 20.79 | 302 | 42 | 64 | 717 |
| Journal of Advertising Research | 0.28 | 1.36 | 11 | 0.17 | 0.95 | 9 | 24 | 39 | 371 |
| Journal of Business & Industrial Marketing | 0.02 | 0.18 | 2 | 0.94 | 1.95 | 12 | 19 | 37 | 422 |
| Journal of Business Ethics | 0.20 | 1.34 | 26 | 2.82 | 15.97 | 730 | 32 | 54 | 1217 |
| Journal of Business Logistics | 0.10 | 0.79 | 8 | 0.80 | 1.64 | 15 | 52 | 127 | 1302 |
| Journal of Business Research | 0.22 | 1.11 | 16 | 2.50 | 12.35 | 320 | 37 | 77 | 1175 |
| Journal of Business-to-Business Marketing | 0.00 | 0.00 | 0 | 6.15 | 31.81 | 186 | 11 | 23 | 175 |
| Journal of Consumer Affairs | 0.91 | 4.25 | 42 | 2.74 | 8.73 | 97 | 27 | 62 | 484 |
| Journal of Consumer Marketing | 0.31 | 2.91 | 39 | 1.76 | 3.78 | 37 | 37 | 79 | 931 |
| Journal of Consumer Policy | 0.16 | 0.69 | 6 | 6.60 | 20.98 | 157 | 25 | 44 | 262 |
| Journal of Consumer Psychology | 2.26 | 8.15 | 112 | 6.62 | 20.26 | 308 | 40 | 73 | 732 |
| Journal of Direct Marketing ^a | _ | _ | _ | _ | _ | _ | 10 | 11 | 36 |
| Journal of Economic Psychology | 0.50 | 3.73 | 78 | 9.52 | 56.39 | 1134 | 28 | 59 | 1103 |
| Journal of Global Marketing | 0.24 | 1.18 | 7 | 1.26 | 2.16 | 13 | 9 | 14 | 125 |
| Journal of International Business Studies | 0.12 | 0.72 | 9 | 3.64 | 4.52 | 46 | 83 | 178 | 2956 |
| Journal of International Marketing | 0.11 | 0.36 | 2 | 0.53 | 1.20 | 8 | 32 | 38 | 230 |
| Journal of Marketing Education | 0.06 | 0.45 | 5 | 3.18 | 5.25 | 37 | 14 | 21 | 150 |
| Journal of Marketing Management | 0.16 | 0.85 | 10 | 6.85 | 18.12 | 288 | 18 | 40 | 869 |
| Journal of Marketing Theory & Practice | 0.41 | 2.37 | 20 | 0.64 | 1.62 | 10 | 66 | 363 | 3353 |
| Journal of Nonprofit & Public Sector Marketing | 0.02 | 0.15 | 1 | 0.79 | 1.60 | 13 | 9 | 13 | 90 |
| Journal of Personal Selling & Sales Management | 0.22 | 0.92 | 6 | 0.96 | 1.57 | 7 | 22 | 24 | 96 |
| Journal of Product Innovation Management | 0.09 | 0.61 | 7 | 2.50 | 8.63 | 139 | 43 | 71 | 895 |
| Journal of Professional Services Marketing ^a | _ | _ | _ | _ | _ | _ | 8 | 12 | 32 |
| Journal of Public Policy & Marketing | 1.42 | 8.74 | 102 | 2.15 | 8.47 | 85 | 21 | 34 | 275 |
| Journal of Retailing | 0.87 | 2.29 | 21 | 2.27 | 10.42 | 142 | 72 | 153 | 2113 |
| Journal of Services Marketing | 0.04 | 0.24 | 2 | 1.61 | 3.25 | 25 | 31 | 46 | 554 |
| Journal of the Academy of Marketing Science | 0.40 | 2.60 | 36 | 5.11 | 7.52 | 69 | 87 | 336 | 7568 |
| Marketing Education Review | 0.40 | 2.59 | 17 | 1.23 | 1.39 | 5 | 5 | 7 | 39 |
| Marketing Letters | 1.00 | 12.59 | 207 | 2.11 | 12.23 | 187 | 23 | 48 | 677 |
| Psychology & Marketing | 0.95 | 8.06 | 119 | 3.51 | 13.05 | 200 | 33 | 55 | 680 |

Table 2. Descriptive Statistics on Citations for Articles per Journal.

Notes: ^a Journal did not exist after 2011 (or has been re-named). Descriptive statistics are based on a sample of 15,900 articles. For only descriptive statistics of academic media citations, we illustrate the descriptive statistics based on a sample of 26,611 articles

Measurement of Drivers

While our dependent variable (citations) can be obtained from existing database providers, most of the article-specific, author-specific, and journal-specific information, which provides the independent variables in our model, is not readily accessible. We therefore collected this information manually by hiring nine research assistants who worked a total of about 900 hours to help collect all necessary information. Table 4 summarizes how we collected and measured all drivers. For brevity, we describe only some of the measurements and give details in Table 4. We present the descriptive statistics on all variables in Table 5.

Table 4. Measurement of Independent Variables.

| Driver | Measurement | Source | | | | | |
|------------------------------|--|---|--|--|--|--|--|
| Article-specific driver | | | | | | | |
| Number of authors | We introduce a variable that counts the number of authors. We take LN to allow for non-linear effects (e.g., decreasing marginal returns). Our sample consists of articles that have more than 50 authors. | • Web research | | | | | |
| Accessibility of the article | We introduce a dummy variable that indicates whether an article is available open access (=1) | • Altmetrics © | | | | | |
| Practitioner involved | We introduce a dummy variable if one of the authors is not affiliated at a university but at a company (=1) | • Web research | | | | | |
| Research domain | The domain classification includes the major fields of research according the. The categories are assigned and provided by Dimensions. We use dummy coding to classify the categories. 30% of the papers were assigned to more than one category. We assigned an article to Management and Commerce only if it is purely classified as Management and Commerce, otherwise we assigned to one of the other categories. In the very rare cases that an article was assigned to several domains (besides Management and Commerce), we assigned it to the bigger category. Finally, we combined the domains human society and medical issues as the majority of articles are classified in both domains. The following categories result: (1) Management and Commerce, (2) Psychology and Cognitive Science, (3) Information and Computing Sciences, (4) Economics, (5) Ethics, Philosophy, and Religious studies, (6) Medical and Health Studies, and Human Society, (7) Other Categories or not identified | Dimensions © Australian and New Zealand Standard Research Classification | | | | | |
| Entertainment domain | We count the number of words that relate to entertainment domains (e.g., Sex and Eroticism) and take the LN | • Online dictionaries | | | | | |
| Valence | We use a sentiment analysis to determine the negativity and positivity of an abstract. Specifically, we count the relative number of positive minus negative words an abstract contains using the Loughran and McDonald (2011) dictionary | • Loughran and McDonald (2011) | | | | | |
| Reading ease | We apply the Flesch reading-ease test to the abstract. Numbers range restricted between 0–100 and higher scores indicate material that is easier to read. | • Flesch (1948) • Warren et al. | | | | | |

| | | (2021) | | |
|-----------------------------------|---|-----------------------------|--|--|
| Use of buzz words | To identify the use of buzz words, we count the number of words that relate to the magnitude and surprising factor of an article and take the LN. | • Online dictionaries | | |
| Author-specific | drivers | | | |
| Gender: female | We use a dummy variable indicating if at least one female is author gender (male = 1). We searched each of the authors on the web to determine his/ her gender. | • Web research | | |
| Author's social media presence | al We count the number of previous papers for which an author has received social media mentions and take logs. In the case of an author team, we take the average social media value of an author team. By not summing up the social media values we avoid multicollinearity issues due to correlations with the variable "number of authors." | | | |
| U.S. school affiliation | We use dummy coding indicating whether at least one author is affiliated in the U.S. (=1). | • Web research | | |
| Top 10 school of the world | We use dummy coding indicating whether at least one author is affiliated at one of the worldwide top 10 schools according to the Times Higher Education (=1). | • Times Higher Education | | |
| Journal-specific | drivers | | | |
| Quality | Dummy variable indicating top marketing journal such as Journal of Marketing, Journal of Marketing Research, Marketing Science, Journal of Consumer Research, Management Science, and International Journal of Research in Marketing. | • Stermesch et al (2007) | | |
| Longevity | Number of years a journal had existed when the paper was published | • Web research | | |
| Publication frequency | Number of published articles in the year. This variable may change from year to year. | • Web research | | |
| Journal's social media presence | Indicates whether a journal is present on Facebook or Twitter. This variable may change from year to year. | • Web research | | |
| U.S. journal | we used dummy coding indicating if the journal is from the U.S. or from elsewhere. | •Scimago rankings | | |
| Independencies | between media channels | | | |
| Lagged dependent variables | We use the lagged (t-1) news media, social media, and academic citations as independent variables and take their logarithms. | • Altmetrics® | | |
| Control variable | 28 | | | |
| Number of keywords | We count the number of keywords | • Web research | | |
| Article has abstract | We include a dummy variable for articles that do not have an abstract | • Web research | | |
| Time since publication | We measure time effects through a count variable in years (alternatively, in weeks for weekly data) | • Altmetrics © | | |
| Season | We include a dummy for the season when the paper was published (fall, winter, summer, spring) | • Web research | | |

Note: For identification purposes, we added +1 for variables that enter the model logarithmically.

Table 5. Descriptive Statistics

| | Mean | SD | Min | Max |
|---|--------|--------|-------|-------|
| Dependent variables (in year T) | - | | | |
| News media citations | 0.10 | 1.44 | 0 | 183 |
| Social media citations | 0.60 | 5.93 | 0 | 1039 |
| Academic media citations | 5.67 | 21.59 | 0 | 3152 |
| Article-specific drivers | | | | |
| Structural decision | | | | |
| Number of authors | 0.88 | 0.46 | 0 | 4.08 |
| Accessibility of the article | 0.24 | 0.43 | 0 | 1 |
| Practitioner involvement | 0.03 | 0.17 | 0 | 1 |
| Subject domain | | | | |
| Research domain | | | | |
| Management and Commerce (reference) | 0.53 | 0.50 | 0 | 1 |
| Psychology and Cognitive Science | 0.13 | 0.33 | 0 | 1 |
| Information and Computing Science | 0.09 | 0.29 | 0 | 1 |
| Economics | 0.09 | 0.28 | 0 | 1 |
| Ethics, philosophy and religious studies | 0.11 | 0.31 | 0 | 1 |
| Medical and health studies, and human society | 0.03 | 0.16 | 0 | 1 |
| Other categories or not identified | 0.04 | 0.19 | 0 | 1 |
| Entertainment domain | 1.40 | 0.85 | 0 | 4.20 |
| Writing style (abstract) | | | | |
| Valence | -0.01 | 0.04 | -0.35 | 0.24 |
| Reading ease | 10.35 | 10.92 | 0 | 70.92 |
| Use of buzz words | 0.53 | 0.59 | 0 | 3.71 |
| Author-specific drivers | | | | |
| Gender: Female (=1) | 0.56 | 0.50 | 0 | 1 |
| Author's social media presence | 0.40 | 0.50 | 0 | 3.64 |
| U.S. school affiliation | 0.53 | 0.50 | 0 | 1 |
| Top 10 school | 0.06 | 0.24 | 0 | 1 |
| Journal-specific drivers | | | | |
| Quality | 0.22 | 0.42 | 0 | 1 |
| Longevity | 37.93 | 12.30 | 18 | 83 |
| Publication frequency | 168.59 | 158.01 | 12 | 764 |
| U.S. journal | 0.47 | 0.50 | 0 | 1 |
| Journal's social media presence | 0.40 | 0.49 | 0 | 1 |
| Independencies between media channels | | | | |
| News media lagged | 0.02 | 0.20 | 0 | 5.21 |
| Social media lagged | 0.13 | 0.45 | 0 | 6.95 |
| Academic citations lagged | 0.74 | 0.92 | 0 | 6.62 |
| Control variables | | | | |
| Number of keywords | 4.16 | 2.49 | 0 | 25 |
| Has abstract | 0.98 | 0.13 | 0 | 1 |
| Time since publication | 2.11 | 2.43 | -2 | 8 |
| Season: Winter (reference) | 0.25 | 0.44 | 0 | 1 |
| Spring | 0.25 | 0.43 | 0 | 1 |
| Summer | 0.24 | 0.43 | 0 | 1 |
| Fall | 0.25 | 0.43 | 0 | 1 |

Notes: Descriptive statistics are based on a sample of 15,900 articles and 95,566observations. Only for descriptive statistics of academic media citations, we illustrate the descriptive statistics based on a sample of 26,611 articles and 318,286 observations.

Article-specific Drivers

Structural decisions. We use a count variable to measure the number of authors and dummy variables to determine the accessibility of an article (= open access) and the involvement of a practitioner as a co-author.

Subject domain. The Dimensions database, which we use to obtain academic citations, assigns a research domain to each article, following the Australian and New Zealand Standard Research Classification System.

To measure to what degree an article lies in an entertainment domain, we use linguistic word counting of the abstract since we assume that journalists will base their decision to report on academic research on the summary provided. Our research assistants manually collected all 26,611 abstracts from the journal websites. To identify to what degree an article has an entertainment character, we count the number of words related to entertainment domains.

Writing style. We use sentiment analysis to determine the negativity and positivity of an abstract: we count the relative number of positive minus negative words in an abstract using the Loughran and McDonald (2011) dictionary (Hewett et al. 2016). To measure reading ease, we use the Flesch reading-ease test (Warren et al. 2021). To identify the use of buzz words, we count the number of words related to the magnitude and surprisingness factor of an article.

Author-specific Drivers

We manually retrieved author names from the journal website or the Altmetrics explore website, producing a list of 35,832 author names. Research assistants then manually searched these authors on the web to determine their gender. While we find that in 2019 the average number of female authors (0.99) is still below the average number of male authors (1.96), the growth rate over the last 20 years is much higher for female authors (linear trend over time: $\beta = .026$, p = .00) than for male authors ($\beta = .008$, p = .01).

Besides author names, we also collected information about the authors' affiliation. We used dummy coding to identify whether at least one author is affiliated with a US school. Additionally, we checked whether one author is affiliated with a top 10 school of the world according to the Times Higher Education Ranking. Finally, we assessed an author's social media presence by counting the number of previous papers for which the author has received social media mentions.

Journal-specific Drivers

Following Stremersch et al. (2007), we measure the quality of a journal as a dummy variable indicating the top six marketing journals (i.e., *Journal of Marketing, Journal of Marketing Research, Marketing Science, Journal of Consumer Research, Management Science,* and *International Journal of Research in Marketing*). In addition, we manually collected whether a journal has a social media presence via Twitter or Facebook and translated this information into dummy variables. Hereby we also capture changes that may have occurred over time through scanning the entire history of Twitter and Facebook and identifying the date when the site (if any) was created. Finally, we used dummy coding indicating whether the journal is from the US.

Methodology

Model Specification of News Media, Social Media, and Academic Citations

To estimate the impact of potential drivers on social media, news media, and academic citations, we use a Poisson model, a well-established model for count data (e.g., Trusov, Bodapati, and Bucklin 2010). This model is based on the assumption that the count of individual yearly citations follows a Poisson distribution with citation parameter λ_{it} which may vary across articles (i) and time (t). Accordingly, we model the number of yearly citations γ_{it} as a Poisson regression:

(1)
$$\gamma_{it} \sim \text{Poisson}(\lambda_{it})$$

We derive the Poisson regression model from the Poisson distribution by specifying the relationship between the citation parameter λ_{it} and explanatory variables. We group the explanatory variables into five sets (i.e., article-, author-, and journal-specific drivers plus lagged citations and control variables), denoted by the vector \mathbf{x}_{it} . We use the lagged (t-1) news media, social media, and academic citations as independent variables and take their logarithms. The $\boldsymbol{\beta}$ parameters in Equation (2) are to be estimated.

(2)
$$\lambda_{it} = \alpha_i + \beta'_{article} \mathbf{x}_i^{article} + \beta'_{author} \mathbf{x}_i^{author} + + \beta'_{journal} \mathbf{x}_{it}^{journal} + \beta'_{lagged_citations} \mathbf{x}_{it}^{lagged_citations} + \beta'_{control} \mathbf{x}_{it}^{control}$$

where $\alpha_i = \alpha_0 + \mu_i$ and $\mu_i \sim P(0, \sigma_{\mu}^2)$.

By specifying an event-specific constant α_i , we address potential issues due to correlated error terms caused by the panel structure over time and control for unobserved heterogeneity. We capture their joint influence in the unobserved term μ_i and variance σ_{μ}^2 . We estimate the overall mean α_0 and variance σ_{μ}^2 . The estimated Hessian for the Poisson model is based on the actual second derivatives of the log-likelihood. Thus, we receive maximum likelihood estimators. We use LIMDEP 10.0 to estimate the model.

We also measure and discuss alternative models such as a negative binomial regression or a log-linear regression. The results of these checks are reported in the robustness section. Our conclusions about the estimated coefficients remain unchanged.

Endogeneity and Causality Concerns

The large number of published articles and their news, social media, and academic citations create an effective sample size of more than 90,000 observations per dependent variable. We investigate potential independencies of academic, social, and media citations by including lagged variables. Additionally, we control for various variables, such as a trend over time or seasonality. We treat the publication of an article as an exogenous shock. Equation 2 models the endogenous decision process of reporting for news media and social media. We discuss three potential endogeneity issues.

First, journalists may anticipate or become aware of the content of accepted articles before their publication. As journalists strive to report research results in a timely manner (Galtung and Ruge 1965), potentially before a paper is officially published, our dependent variables may be subject to a strong measurement bias. However, as outlined above, Almetrics uses text mining to map research articles to news citations. This approach also covers mentions of articles before their official publication date and maps them correctly to the relevant academic source. We use a conservative approach and consider citations up to the maximum observation period of 365 days before the paper was actually published.

Second, endogeneity issues may also arise since our sample does not include *all* articles published in the last decade. Some may be missing owing to removal from the Almetrics database, changes in their DOIs, erroneous links, or missing metadata, or because they are very recent and have not yet received attention in any news media, social media, or academic channels. Since our analysis focuses on historical papers and controls for when a paper has been published, we consider this bias relatively minor. Still, we matched all articles for which we received data from Altmetrics with all articles that have been listed by Web of Science (WoS)[®]

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between 2011 to 2018. An outer-inner sample comparison shows that our sample contains articles that receive a few more academic citations on average than articles in the population. Since academic citations barely correlate with news (r = .024) and social media (r = .035), the analyses of our focal models may not be affected. However, for a sub-sample of data that match the average academic citations of the population, we find the results are robust (see Table WA7.1).

Third, omitted variables may cause endogeneity issues. We consider this risk limited in our case since we cover all theoretical constructs proposed by the theory of news values. Furthermore, we added a series of control variables mentioned by prior research (e.g., Stremersch et al. 2015) or through our interviews with newspaper editors, the PR departments of academic journals, and fellow researchers. Specifying an article-specific constant in Equation (2) allows us to control for unobservable article-specific drivers, further reducing the potential for endogeneity concerns. However, our (real-world) study relies on the assumption that the error term is randomly distributed among non-observable variables, which may be (theoretically) violated under certain conditions.

Results

Table 6 and Table 7 show the estimation results of the models for news media, social media, and academic media citations. We include coefficient estimates, standard errors, and significance levels (*p*-values). Given the large sample sizes of 90,000 observations for the news/ social media models and 300,000 for the academic media model, we use *strong support* to indicate a significance level of 1% or less and *support* to indicate a significance level between 1% and 5%.

Table 6. Estimation Results for News Media and Social Media Citations.

| | | | N M | 1. | | | g | · 1 M - 1' | | |
|--|---------|----------|--------------|---------------|-----------------|------------|-------------|--------------|--------------|-----------------|
| | | A 1 | News Me | dia | | | Sc | cial Media | 1 | |
| | | Articles | published | 2011-2019 | | | Articles pu | iblished 20 | 15.000 | |
| | | Numbe | er of articl | es: 15,900 | | | Number | of articles: | 15,900 | |
| | 0.0 | Number o | of observat | tions: 95,566 | 1 | C C | Number of | observation | ns: 95,566 | 1 |
| | Coer. | SE | exp(b) | Partial eff. | <i>p</i> -value | Coef. | SE | exp(b) | Partial eff. | <i>p</i> -value |
| Intercept | -7.2986 | 0.3306 | | | 0.00% | -3.4495 | 0.0931 | | | 0.00% |
| Article-specific drivers: Structural decisions | | | | | | | | | | |
| Number of authors | 0.4387 | 0.0877 | 1.55 | 0.0430 | 0.00% | -0.0148 | 0.0235 | 0.99 | -0.0089 | 52.81% |
| Accessibility of the article | 0.0467 | 0.0864 | 1.05 | 0.0046 | 58.93% | 0.4045 | 0.0227 | 1.50 | 0.2417 | 0.00% |
| Practitioner involved | 0.6479 | 0.2068 | 1.91 | 0.0635 | 0.17% | 0.3548 | 0.0440 | 1.43 | 0.2120 | 0.00% |
| Article-specific drivers: Subject domain | | | | | | | | | | |
| Research domain | | | | | | | | | | |
| Management and commerce (baseline) | | | | | | | | | | |
| Psychology and cognitive science | 1.4324 | 0.1132 | 4.19 | 0.1405 | 0.00% | 1.0803 | 0.0365 | 2.95 | 0.6455 | 0.00% |
| Information and computing science | -0.2378 | 0.1314 | 0.79 | -0.0233 | 7.04% | 0.6293 | 0.0482 | 1.88 | 0.3760 | 0.00% |
| Economics | 0.4348 | 0.1521 | 1.54 | 0.0426 | 0.43% | 0.7179 | 0.0321 | 2.05 | 0.4290 | 0.00% |
| Ethics, philosophy, and religious studies | -0.1989 | 0.1119 | 0.82 | -0.0195 | 7.55% | -0.1880 | 0.0507 | 0.83 | -0.1124 | 0.02% |
| Medical and health studies, and human society | 1.4206 | 0.1630 | 4.14 | 0.1393 | 0.00% | 1.1021 | 0.0432 | 3.01 | 0.6586 | 0.00% |
| Other categories or not identified | -0.1763 | 0.2180 | 0.84 | -0.0173 | 41.87% | 0.6169 | 0.0544 | 1.85 | 0.3686 | 0.00% |
| Entertainment domain | 0.2171 | 0.0447 | 1.24 | 0.0213 | 0.00% | 0.1657 | 0.0128 | 1.18 | 0.0990 | 0.00% |
| Article-specific drivers: Writing style | | | | | | | | | | |
| Valence | -2.0358 | 0.8504 | 0.13 | -0.1996 | 1.67% | 1.2599 | 0.2048 | 3.52 | 0.7528 | 0.00% |
| Reading ease (abstract) | 0.0241 | 0.0033 | 1.02 | 0.0024 | 0.00% | 0.0099 | 0.0012 | 1.01 | 0.0059 | 0.00% |
| Use of buzz words | 0.2659 | 0.0623 | 1.30 | 0.0261 | 0.00% | -0.0045 | 0.0167 | 1.00 | -0.0027 | 78.92% |
| Author-specific drivers | | | | | | | | | | |
| Female (=1) | 0.2524 | 0.0730 | 1.29 | 0.0248 | 0.05% | 0.1629 | 0.0220 | 1.18 | 0.0973 | 0.00% |
| Author's social media presence | 0.8415 | 0.0730 | 2 32 | 0.0825 | 0.00% | 0.6299 | 0.0219 | 1.88 | 0 3764 | 0.00% |
| U.S. school affiliation | 0.9482 | 0.0771 | 2.52 | 0.0930 | 0.00% | 0.0182 | 0.0219 | 1.00 | 0.0109 | 42 69% |
| Top 10 school | 0.3340 | 0.1488 | 1 40 | 0.0328 | 2 47% | 0.4166 | 0.0429 | 1.52 | 0.2489 | 0.00% |
| Iournal-specific drivers | 0.5540 | 0.1400 | 1.40 | 0.0520 | 2.4770 | 0.4100 | 0.042) | 1.52 | 0.2407 | 0.0070 |
| Quality | 0.6906 | 0 1281 | 1 00 | 0.0677 | 0.00% | -0.6187 | 0.0376 | 0.54 | -0.3697 | 0.00% |
| Longevity | 0.0160 | 0.0030 | 1.02 | 0.0017 | 0.00% | 0.0368 | 0.0014 | 1.04 | 0.0220 | 0.00% |
| Dublication frequency | 0.0109 | 0.0039 | 1.02 | 0.0017 | 0.00% | 0.0308 | 2360D 04 | 1.04 | 0.0220 | 0.00% |
| I ublication nequency | 0.0013 | 0.0001 | 1.00 | 0.0001 | 0.00% | 0.0005 | 0.0262 | 0.80 | 0.1325 | 0.00% |
| U.S. journal | 0.2773 | 0.0923 | 1.52 | 0.0272 | 0.27% | -0.2217 | 0.0202 | 0.80 | -0.1323 | 0.00% |
| Interdemendencies of modia channels | 0.4208 | 0.0200 | 1.52 | 0.0413 | 0.00% | 0.7750 | 0.0082 | 2.17 | 0.4019 | 0.00% |
| News modia lagged | 0 2044 | 0.0064 | 0.67 | 0.0297 | 0.00% | 0.2028 | 0.0024 | 1 22 | 0 1212 | 0.00% |
| Social modia lagged | -0.3944 | 0.0004 | 1.15 | -0.0387 | 0.00% | 0.2028 | 0.0024 | 0.82 | 0.1212 | 0.00% |
| A andomia aitationa lagged | 0.1393 | 0.0001 | 1.13 | 0.0137 | 0.00% | -0.2010 | 0.0010 | 0.62 | -0.1204 | 0.00% |
| Control control serie blac | -0.2288 | 0.0009 | 0.80 | -0.0224 | 0.00% | -0.3472 | 0.0025 | 0.58 | -0.5270 | 0.00% |
| North of the second | 0.0146 | 0.0155 | 1.01 | 0.0014 | 24 (00/ | 0.0524 | 0.0046 | 1.05 | 0.0212 | 0.000/ |
| Number of keywords | 0.0146 | 0.0155 | 1.01 | 0.0014 | 34.08% | 0.0524 | 0.0046 | 1.05 | 0.0313 | 0.00% |
| Has abstract | 0.8366 | 0.2857 | 2.31 | 0.0820 | 0.34% | 0.3963 | 0.0861 | 1.49 | 0.2368 | 0.00% |
| Time since publication | 0.0426 | 0.0036 | 1.04 | 0.0042 | 0.00% | 0.0028 | 0.0012 | 1.00 | 0.0017 | 2.28% |
| Seasonality: Spring | 0.0151 | 0.0981 | 1.02 | 0.0015 | 87.78% | 0.1393 | 0.0297 | 1.15 | 0.0832 | 0.00% |
| Seasonality: Summer | 0.1721 | 0.0950 | 1.19 | 0.0169 | 7.01% | 0.0351 | 0.0305 | 1.04 | 0.0209 | 25.07% |
| Seasonality: Fall | -0.1831 | 0.0925 | 0.83 | -0.0180 | 4.79% | -0.0495 | 0.0279 | 0.95 | -0.0296 | 7.64% |
| Alpha (disturbance parameter) | 18.0075 | 0.5196 | | | 0.00% | 3.5521 | 0.0457 | | | 0.00% |
| LL (Full random effect model) | -21,497 | | | | | -96,126 | | | | |
| Restricted LL (constant and no random effect) | -45,204 | | | | | -192,251 | | | | |
| McFadden R ² | 52.2% | | | | | 50.0% | | | | |

We also provide quasi elasticities exp(b), which indicate the amount of change in the number of citations for a one-unit change of the independent variable, and the partial (marginal) effects, which are estimated on the means of all independent variables. All models are highly significant, show good model fit, and do not yield multicollinearity issues (all VIFs < 5). Overall, the news and social media models have R^2 statistics of about 50%, indicating that our model covers the primary sources of variation in media citations.

News and Social Media Citations

Article-specific drivers. Our empirical results are broadly consistent with theoretical expectations. We find strong support for the positive impact of the number of authors on news media citations ($b^{NM} = .44$), possibly because news media citations depend on public relations efforts and more authors mean resources from more institutions dedicated to promoting the research. We do not find support for the same effect on social media citations, conceivably because the more egalitarian social media space makes the role of public relations agencies less critical. We find strong support for the impact of accessibility on social media citations ($b^{SM} = .40$) but no support for accessibility on news media citations, possibly because open access matters less for professional users and journalists. Involving a practitioner increases citations for both news media ($b^{NM} = .65$) and social media ($b^{SM} = .35$), with strong support for the latter.

In the subject domain, we find strong support for an influence on news and social media coverage, consistent with expectations. Articles published in marketing journals in the research domains of psychology/ cognitive science ($b^{NM} = 1.43$ and $b^{SM} = 1.08$), economics ($b^{NM} = .43$ and $b^{SM} = .72$), and medical/ health studies ($b^{NM} = 1.42$ and $b^{SM} = 1.10$) are cited more frequently than the baseline of management and commerce, probably owing to the broader public's higher interest in these issues.

With respect to writing style, we see strong support for a positive influence of reading ease on citations ($b^{NM} = .02$, $b^{SM} = .01$), most likely because it makes the content more accessible to non-experts. We see interesting findings for valence and find strong support for a negative influence on news media citations ($b^{NM} = -2.04$) and strong support for a positive influence on social media citations ($b^{SM} = 1.26$), suggesting that journalists prefer to report negative results, while for social media, more important is that the news is valenced (vs. neutral). The use of buzz words has a strong significant impact on news media citations ($b^{NM} = .27$), but is not significant for social media citations.

Author-specific drivers. Concerning author characteristics, we find strong support for the effect of gender—articles with a female co-author are cited substantially more in both news and social media ($b^{NM} = .25$, $b^{SM} = .16$). We elaborate in the discussion. We also find strong support for an author's social media presence ($b^{NM} = .84$, $b^{SM} = .63$) and for the positive impact of reputation on citations for both US school affiliation ($b^{NM} = .94$, $b^{SM} = .02$) and being part of a Top 10 school ($b^{NM} = .33$, $b^{SM} = .42$).

Journal-specific drivers. All journal-specific drivers show strong support of our expectations. Journal longevity ($b^{NM} = .02$, $b^{SM} = .04$), publication frequency ($b^{NM} = .002$, $b^{SM} = .001$), and a social media presence ($b^{NM} = .37$, $b^{SM} = .85$) all positively affect citations. Journal quality influences citations positively for news media ($b^{NM} = .70$) but negatively for social media citations ($b^{SM} = -.61$), possibly because high-quality journals are more credible (increasing their appeal for journalists) but focus on more complex relationships and more niche topics, which are harder to communicate on social media. We find strong support the positive impact of U.S. journals on news media citations ($b^{NM} = .30$) but a negative impact on social media citations ($b^{SM} = -.22$).

Academic Media

The (McFadden) R^2 of our model of academic citations is higher (76%), possibly because academic citations are more systematic and therefore easier to explain. As highlighted above, prior research has looked into selected drivers of academic citations, which allows us to compare our results to previously published work. In addition, our more extensive sample allows us to determine the effects of drivers that have not yet been investigated.

Article-specific drivers. Our study shows that the number of authors ($b^{AM} = .08$) and article accessibility ($b^{AM} = .12$) positively influence citations. While the results on accessibility are intuitive since an article is likely to be cited more if it can be accessed through open access, results in prior literature regarding the number of authors have been inconsistent. While Stremersch et al. (2007) find a negative effect (full model), Stremersch et al. (2015) find negative, positive, and non-significant effects depending on the model (M1–M6). In the most recent study, Warren et al. (2021) find non-significant effects for the number of authors with a sample of 1,640 articles. We find that more authors lead to more citations. Finally, we find a surprising effect not discussed in prior literature: involving a practitioner harms academic citations ($b^{AM} = .06$).

For the subject domain, we also find strong effects. Articles in psychology/ cognitive science ($b^{AM} = .07$) are cited more frequently than the baseline of management and commerce, while articles in ethics/ philosophy ($b^{AM} = .21$), and information/ computing science ($b^{AM} = .19$) are cited less frequently. This pattern may reflect the higher importance of psychology as a foundational discipline for the marketing field. Like the results for news and social media, articles in the entertainment domain receive a higher number of citations ($b^{AM} = .07$).

With respect to writing style, we see strong support for valence, with articles with

positive valence receiving more citations ($b^{AM} = 1.23$), possibly because articles reporting positive (i.e., confirmatory) findings tend to be cited more often. The importance of reading ease is strongly supported ($b^{AM} = -.004$). Its impact on academic citations is negative, indicating that articles that are easier to read receive fewer academic citations, consistent with Stremersch et al. (2015, 2007) and Warren et al. (2021). We find support for the positive impact of buzz words on academic citations ($b^{AM} = .02$).

Author-specific drivers. For author-specific drivers, we see no effect of gender on academic citations, consistent with work finding no significant impact of female authors on the scientific popularity of articles in *IJRM* (Donthu et al. 2021) and with the universalist perspective that the influence of scientific ideas should not depend on who professes them. The author's social media presence has a positive impact on academic citations ($b^{AM} = .08$). In addition, author reputation, measured by having a US affiliation ($b^{AM} = .08$) or being part of a Top 10 school ($b^{AM} = .04$), has a strong positive impact on academic citations, broadly consistent with Stremersch et al. (2015, 2007). While US affiliation is insignificant in Stremersch et al. (2007), business school ranking is significant (full model). The same applies to Stremersch et al. (2015), where US affiliation is not significant but business school ranking significant in four out of six models.

Journal-specific drivers. Journal quality ($b^{AM} = .08$), longevity ($b^{AM} = .01$), and publication frequency ($b^{AM} = .0005$) all strongly and positively affect academic citations, confirming the positive impact of age of journal and number of articles published on the index of structural influence (Baumgartner and Pieters 2003). We find support for the positive effect of a social media account on academic citations ($b^{AM} = .03$).

Table 7. Estimation Results for Academic Media Citations.

| | Academic Media | | | | | |
|--|---------------------------------|-----------------|----------------|-----------|--------|--|
| | Articles published 1937-2019 | | | | | |
| | Number of articles: 26 611 | | | | | |
| | Number of observations: 318.286 | | | | | |
| | Coef. | <i>p</i> -value | | | | |
| Intercept | -0.9932 | 0.0209 | - F (-) | | 0.00% | |
| Article-specific drivers: Structural decisions | 0.7702 | 0.0202 | | | 0.0070 | |
| Number of authors | 0.0856 | 0.0094 | 1.09 | 0.4851 | 0.00% | |
| Accessibility of the article | 0 1154 | 0.0104 | 1.12 | 0 6540 | 0.00% | |
| Practitioner involved | -0.0594 | 0.0252 | 0.94 | -0 3367 | 1.83% | |
| Article-specific drivers: Subject domain | 0.0000 | 0.0202 | 0.71 | 0.0007 | 1.0070 | |
| Research domain | | | | | | |
| Management and commerce (baseline) | | | | | | |
| Psychology and cognitive science | 0.0650 | 0.0149 | 1.07 | 0 3682 | 0.00% | |
| Information and computing science | -0 1948 | 0.0171 | 0.82 | -1 1042 | 0.00% | |
| Economics | 0.0257 | 0.0161 | 1.03 | 0 1455 | 10.98% | |
| Ethics philosophy and religious studies | -0.2100 | 0.0172 | 0.81 | -1 1905 | 0.00% | |
| Medical and health studies and human society | -0.0464 | 0.0172 | 0.01 | -0.2631 | 8.02% | |
| Other categories or not identified | -0.0958 | 0.0205 | 0.95 | -0 5428 | 0.02% | |
| Entertainment domain | 0.0707 | 0.0205 | 1.07 | 0.5420 | 0.00% | |
| Article-specific drivers: Writing style | 0.0707 | 0.0055 | 1.07 | 0.4000 | 0.0070 | |
| Valence | 1 2256 | 0 1028 | 3 4 1 | 6 9477 | 0.00% | |
| Reading ease | -0.0037 | 0.1020 | 1.00 | -0.0211 | 0.00% | |
| Use of huzz words | 0.00057 | 0.0004 | 1.00 | 0.1162 | 1.05% | |
| Author-specific drivers | 0.0205 | 0.0000 | 1.02 | 0.1102 | 1.0570 | |
| Female (-1) | 0.0173 | 0 0000 | 1.02 | 0.0083 | 5 /1% | |
| Author's social media presence | 0.0175 | 0.0090 | 1.02 | 0.0985 | 0.00% | |
| I S school affiliation | 0.0770 | 0.0000 | 1.00 | 0.4377 | 0.00% | |
| Top 10 school | 0.0371 | 0.0091 | 1.04 | 0.2105 | 0.00% | |
| Iournal specific drivers | 0.0822 | 0.0164 | 1.09 | 0.4001 | 0.00% | |
| Quality | 0.0778 | 0.0124 | 1.08 | 0.4409 | 0.00% | |
| Longovity | 0.0778 | 0.0124 | 1.00 | 0.4409 | 0.00% | |
| Dublication frequency | 0.0093 | 0.0004 8D 05 | 1.01 | 0.0528 | 0.00% | |
| I S journal | 0.0005 | 0.0006 | 0.08 | 0.0020 | 5 36% | |
| Social modia presence | -0.0180 | 0.0090 | 1.03 | -0.1033 | 0.00% | |
| Interdemendencies of modio channels | 0.0279 | 0.0010 | 1.05 | 0.1585 | 0.00% | |
| Nows madia lagged | 0.0303 | 0.0020 | 1.04 | 0 2230 | 0.00% | |
| Social modia lagged | 0.0393 | 0.0029 | 1.04 | 0.2230 | 0.00% | |
| A cadomic citations lagged | 0.0970 | 0.0013 | 1.10 2.02 | 3 0006 | 0.00% | |
| Control voriables | 0.7059 | 0.0004 | 2.02 | 5.9900 | 0.0070 | |
| Number of knywords | 0.0050 | 0.0017 | 1.01 | 0.0283 | 0 3/04 | |
| Has abstract | 0.0030 | 0.0017 | 1.01 | 3 5 2 2 3 | 0.34% | |
| Time since publication | 0.0251 | 0.0190 | 1.00 | 0.1101 | 0.00% | |
| Seesenality Spring | 0.0210 | .9D-04 | 1.02 | 0.1191 | 0.00% | |
| Seasonality, Summer | -0.0107 | 0.0110 | 0.99 | -0.0003 | 55.78% | |
| Seasonality, Sullinei | -0.0437 | 0.0113 | 0.90 | -0.2369 | 0.01% | |
| Seasonanty: Fail | -0.0557 | 0.0117 | 0.95 | -0.3130 | 0.00% | |
| Inews media/ Social media data available | -0.0494 | 0.0010 | 0.95 | -0.2799 | 0.00% | |
| Aipita (disturbance parameter) | 0.3797 | 0.0033 | | | | |
| LL (Fuil random effect model) | -058,296 | | | | | |
| Restricted LL (constant and no random effect) | -2,770,446 | | | | | |
| McFadden R ² | 76.2% | | | | | |

The Citation Echoverse

Previous research has shown that communication channels can form an echoverse in which coverage of a news item in one channel affects the coverage of the same news item in another channel (Hewett et al. 2016). Our analysis using lagged variables finds strong support for such effects for the interplay of news media, social media, and academic media. Since the relevant variables (i.e., number of citations) enter the model as logarithms, we can interpret the coefficients directly as elasticities to see how a 1% change in channel X in year t-1 affects citations in channel Y in year t.

We find the most substantial effects for academic citations, where a 100% change in academic citations in the previous year leads to 70.4% (= elasticity of .7039) more citations in the current year. Highly cited articles tend to be cited more often, much like preferential attachment in social network formation (Barabasi and Albert 1999). News media and social media citations in t-1 also increase academic citations in t with quasi-elasticities of .04 and .10, respectively. Therefore, the effect of lagged academic citations is about seven times stronger than the effect of lagged social or news media citations.

Notably, the effect of a 1% increase in academic citations in t-1 on news and social media citations in t is negative (-.23 and -.55), most likely since news and social media prefer to report on more recent findings. We find interesting cross-over effects where one incremental past citation leads to .14 (social media to news media) and .20 (news media to social media) citations in the current year, confirming the findings of Hewett et al. (2016).

Robustness Checks

To ensure methodological choices do not influence our findings, we performed a series of robustness checks.

Alternative model specifications. We estimated fixed effects for articlesand fixed effects for journals. None of the estimations led to any other results. We do not use article or journal fixed effects in our main analysis because they do not allow us to identify the effect of time-invariant drivers (e.g., research domain or journal quality). In addition, conditional fixed effects do not produce consistent estimates in Poisson models (Warren et al. 2021; Greene 2003).

Alternative models. Following Trusov, Bodapati, and Bucklin (2010), we use the standard Poisson model to investigate the impact of drivers on news, social, and academic media citations. The model may also be estimated by using a negative binomial model, which is less restrictive. The estimated coefficients do not lead to any other conclusions (Table WA8.3). Finally, we use a standard log-linear regression with an article-specific random constant. The results do not lead to any other conclusions (Table WA8.4). An additional way to model the data would be a zeroinflated Poisson model, which seems suitable since many articles in our sample receive no media citations at all. However, a zero-inflated Poisson model also assumes that the excess of zeros is generated by a separate process from the count values and that the excess zeros can be modeled independently (Greene 2002) , which cannot be theoretically justified in our case.

Alternative measurements of the dependent variables. As an alternative measurement for our dependent variable, we code the dependent variable binary, enabling us to investigate whether coverage and non-coverage are driven by the same drivers. Using a logistic regression, we come to similar conclusion for most variables (Table WA8.5).

General Discussion

Implications for Marketing Scholars

How can marketing scholars use our findings to achieve a higher number of news and social media citations and, consequently, a higher impact of their research? To address this question,

we determine the effect size of each driver by analyzing how the number of news or social media citations changes if the driver increases either by one standard deviation (for metric variables) or by one unit (for dummy variables). At the same time, all other variables are held constant at their sample mean.

First, the choice of the subject domain is critical. Work in psychology/ cognitive science or medical/ health receives three times as much news and twice as many social media citations as our baseline of management and commerce. This finding is consistent with the broader argument that marketing research should become less narrow and more responsible, and aim to reach decision-makers beyond the traditional scope of the firm and its immediate stakeholders (Chandy et al. 2021). Our findings support the statement that such work is more impactful, as measured by citations in popular media.

Second, marketing scholars should choose their author team carefully. Involving a practitioner doubles news media citations and increases social media citations by nearly 50%. Having at least one team member from a Top 10 institution is associated with an increase in news and social media citations of 50%. If the team member is from a US school, news media citations rise by 150%. Collaborating with a female colleague leads to 30% more news and 20% more social media citations. Increasing the author team size from an average of 2.5 to 3.8 is associated with a 34% increase in news media citations.

While the subject domain and author team composition are usually settled at the early stage of a research project and are difficult to adapt later, authors can take a series of actions in ongoing projects. Authors should establish a presence on social media since this presence is associated with 50% more news media and 40% more social media citations. They should also make their work accessible in terms of writing (easy-to-read abstracts have 30% more news

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media citations) and open-access (50% increase in social media citations). Finally, using words that fall into the entertainment domain (e.g., human interest, humor) or buzz domain (e.g., words indicating magnitude or surprisingness) is associated with increased news and social media citations.

Implications for Journal Editors and Publishers

While most factors we analyze are under the control of authors and marketing scholars, journal editors and publishers can take some actions related to citations of research published in their outlets.

First, editors can encourage research on issues with broader impact, for example through organizing special issues. Such initiatives signal the importance of the given topics, which in turn spurs research in those fields. Actions encouraging collaborative research with companies, such as the Gary L. Lilien ISMS-MSI Practice Prize, can have a similar effect, reflecting alliance with practitioners and resulting in higher citations.

Second, journal editors should actively manage their social media presence since this presence is associated with a 50% increase in news media and a 120% increase in social media citations. Some journals, such as the *International Journal of Research in Marketing*, have a dedicated social media editor as part of their team. Others, such as the *Journal of Marketing*, encourage authors to participate in webinars to disseminate their work online. Other more "traditional" activities, such as increasing publication frequency, barely increase media citations. For example, doubling the publication frequency from an average of 170 papers per year to 330 papers is associated with only 25% more citations.

The Role of Gender

We observe a strong effect of gender on both news media and social media citations. Having one

female author on the team can boost citations by nearly 30% for news media (exp[b]) = 1.29) and nearly 20% for social media (exp[b] = 1.18). In addition, as Figure 2 shows, the effect on news media citations is linear in the number of female co-authors: every incremental female scholar on the author team increases news media citations.





Three reasons may explain such a finding. First, female academics may put extra effort into selfpromoting their work, with these efforts translating into higher awareness and citations in news and social media. Evidence for such a conjecture is mixed. On the one hand, prior work has shown a significant gender gap in self-promotion. However, this gap goes in the opposite direction since, on average, women tend to describe their ability and performance *less* favorably than equally performing men (Exley and Kessler 2019). This self-promotion gap is apparent when looking at self-citations in academic articles as a proxy for self-promotion, where men are substantially more likely to cite their own work than women (King et al. 2017). On the other hand, unclear is whether this average effect also applies to high-status and highly successful women, who form the basis of our analysis. Articles in the popular and business press regularly advise female leaders and entrepreneurs to engage in personal branding (Forbes 2021), and conceivably such calls for action have increased female academics' self-promotion efforts. In academic writing, the effect of self-citation gender disappears when controlling for confounding factors, such as significant career outcomes (Azoulay and Lynn 2020). In addition, female academics may be more skilled in self-promotion. Women have been shown to have a more extensive vocabulary than men (Lutchmaya et al. 2001), and female physicians are better communicators than their male counterparts (Roter et al. 2002). These skills may translate in the article (i.e., articles written in collaboration with female co-authors may be better written and more accessible to journalists) and the follow-up actions involved in publicizing an article (e.g., writing press announcements, engaging with journalists, and using PR departments).

Second, journalists may want to actively contribute to closing the gender gap by paying more attention to the work of female faculty. This assumption is consistent with work showing that female chief executives, business executives, and company founders receive more mentions in news media and social media than their male counterparts (Shor et al. 2019). Furthermore, the marketing departments of business schools may emphasize the work of female faculty, as female faculty have been shown to have positive effects on students, especially female ones (Carrell et al. 2010; Mansour et al. 2020). Institutions may want to emphasize their presence, which can lead to more awareness of their work among journalists.

Finally, a third possible reason for our results may lie in the content of the article itself. While our model controls for many content-related factors (e.g., research domain, entertainment domain), other factors are harder to measure. Conceivably, articles written by female co-authors may be more creative and more interesting to journalists. While a robust relationship between gender and creativity is hard to establish (Abraham 2016; Baer and Kaufman 2008), recent research has shown that content created by the most popular female artists tends to be more

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novel than content created by their male counterparts (Mauskapf et al. 2018). Similar dynamics could be in place here.

To examine this explanation, we generated word clouds for all articles that include a female co-author and compared them to the ones with male-only author teams. While this analysis does not allow any conclusions on an article's creativity or innovativeness, it shows that subtle differences may occur in the content of articles written by all-male versus diverse author teams that could drive our findings.

The Link to Practical Impact

One could argue that despite the importance of being covered in the news and social media, media coverage should not be the goal of research but, at best, a mediating factor. What matters is the impact and importance of the research, measured by the number of marketing stakeholders affected by it, their status, and their expected behavior shift (Kohli and Haenlein 2021). As argued above, we believe that such impact is more likely to occur if research is publicized in popular media. However, is this actually the case?

We performed two additional analyses to investigate the link between media mentions and possible practical impact. First, we looked at all academic articles in our sample that received a major award in one of the leading marketing journals.⁴ In total, we identified 73 articles in our dataset receiving at least one of 14 awards. The first panel of Figure 3 shows that award winners have 2.4 times more academic citations, 2.4 times more news media citations, and 1.8 times more social media citations. While causality cannot be established, practical impact (as measured by awards) is clearly correlated with mention in the news and social media.

⁴ International Journal of Research in Marketing, Journal of Consumer Research, Journal of Marketing, Journal of Marketing Research, Management Science, Marketing Science.



Figure 3. Practical impact of social and news media citations.

Analysis II: Citations of policy mentions

8.88

2.15 2.00 1 38 1.00 0.57 0.00 Academic media News media Social media citations citations citations (10x) (MD, p=.01) (MD, p=.04) (MD, p = .00)■ Public policy mention ■ No public policy mention Notes: Papers that are cited on public policy mentions (N=444) in all selected journals. We used data from Altmetrics to determine whether a research paper has been mention in a public policy

document (for details see almetric.com). Sample period (papers and

citiatons): 2011-2019. Sample size: 15,900

6.70

3.50

Notes: Covered award papers (N= 73) in JM, JMR, JCR, MrSc, MS, and IJRM. P-values of mean differences (MD) are corrected for journal-specific fixed effects. Sample period (papers and citiatons): 2011-2019. Sample size: 3,504

As a second proxy of practical impact, we looked at whether an academic article is mentioned in a public policy document. In total, 444 (3%) articles in our total sample of 15,900 had at least one public policy mention. The second panel of Figure 3 shows that those articles receive, on average, 4.1 times more academic citations, 2.4 times more news media citations, and 1.9 times more social media citations. While the direction of causality is hard to establish, news and social media mentions are a possible mediator to a practical impact.

10.00

9.00

8.00

7.00

6.00

5.00

4.00

3.00

Limitations and Further Research

Responsible research in business and management (RRBM 2017) aims to develop credible knowledge that is useful for the larger society and to ensure that this knowledge is broadly disseminated beyond the traditional space of academic journals and conferences. To the best of our knowledge, our study is the first attempt to analyze this knowledge dissemination process in marketing. We focus on how research is translated into popular news media and social media and which factors influence this process. Naturally, this raises a series of follow-up questions.

First, as important as knowledge dissemination in popular media may be, it is only an intermediate step in research having a true impact, measured by how relevant stakeholders change their behavior (Kohli and Haenlein 2021). While our analysis shows a relationship between impact (e.g., awards, policy mentions) and media citations, this relationship is more than likely to be substantially more complicated. Which role do managerial journals in the border between academic and popular media such as the *Harvard Business Review* and *Sloan Management Review* play in this process? Are articles more likely to be covered by news media if managerial journals have first popularized them? How do the characteristics of the news media themselves influence managers reaction to the research? Which journals are most likely to change managerial behavior? Understanding the process underlying disseminating research through popular media would be a fruitful avenue for further investigation.

Second, most factors included in our model are time-invariant. Our model is based on annual citation data, but it could be interesting to look at dynamics more granularly. Daily or weekly data could allow understanding the time required for academic research to diffuse in the popular media space or how long a given article is discussed in the press. These data would also allow analyzing more fine-grained interdependencies between media channels (e.g., on the news media level) and a better understanding of the underlying chain of influence. In the same area, looking into the content of the news articles themselves could provide exciting insights since this effort would allow us to understand whether and how and for what reason academic research is referenced.

Finally, one of our most striking results is the significant and robust impact of gender on

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citations. While we could speculate about potential reasons for this effect, our analysis does not test them empirically. Nevertheless, we provide clear evidence that female scholars add unique skills to a co-author team that positively affects subsequent citations and, ultimately, impact.

Conclusion

Public awareness of academic research in marketing seems virtually nonexistent. Of the articles in our database, 89% received no mention in news media and 43% received no mention in social media. Given the substantial cost of publishing in academic journals—possibly \$400,000 per article (Terwiesch and Ulrich 2014)—serious concerns arise.

While improving knowledge dissemination is a complicated and long-term process, some factors seem straightforward to address. Only 3% of articles are co-authored by a practitioner, but those articles have 91% more citations in news media and 43% more citations in social media. The average number of male authors per article is twice that of female authors (1.9 vs. 0.9), but having even one female author on the team is associated with 29% more news and 18% more social media citations. Articles in domains related to health or medical studies have 314% more news and 201% more social media citations than those in the management/ commerce category. Clearly, minor changes in author teams or topic focus can have a substantial impact. In some cases, a fundamental shift in focus may be needed, away from traditional firm-related questions to societal or planetary-level questions. We hope that our work can help publicize existing work and shape knowledge creation to ensure a higher impact on firms and society.

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| News Values Mentioned in the Literature | Explanation of the News Value | Measurable Drivers in the Context of Academic Citations |
|--|---|---|
| Original theory of news values | (Galtung and Ruge 1965) | |
| Reference to power elite (1) | Stories involving powerful and well-known individuals, organizations, or institutions | Top 10 school of the worldQuality of the journal |
| Consonance (2) | The news selector may predict (or want) something to happen, thus forming a mental "pre-image" of an event. | Lagged social media citations Lagged academic citations Lagged news media citations |
| Relevance / Meaningfulness (3) | This news selector relates to stories that are of interest and value to particular readership profiles. | Practitioner involved Research domain Gender: female |
| Continuity (4) | Once a topic/issue has become headline news it remains in the media spotlight for some time—even if its amplitude has been greatly reduced—because it has become familiar and easier to interpret. | Longevity of the journal Lagged social media citations Lagged academic citations Lagged news media citations |
| Unambiguity (5) | The less ambiguity, the more likely the event is to become news. The more clearly an event can be understood and interpreted without multiple meanings, the greater the chance of it being selected. | Reading ease |
| Composition (6) | An event may be more newsworthy because it fits into the overall composition or balance of a newspaper or news broadcast. | Research domain |
| Frequency (7) | An event that unfolds at the same or similar frequency as the news medium is more likely to be selected. | Publication frequency |
| Reference to elite nations (8) | The actions of elite nations are seen as more consequential and thus are more likely to be selected. | U.S. school affiliation U.S. journal |
| Unexpectedness/Surprisingness (9) | The most unexpected and surprising events will have the greatest likelihood of being selected as news. | • Use of buzz words |
| Reference to persons (10) | Reporters are more likely to write of persons and not structures because storytelling demands "identification" among readers. | Number of authors Entertainment domain (includes human interest) |
| Reference to something negative (11) | Negative news is more likely to be reported as it could be seen as unambiguous and consensual, generally more likely to be unexpected. Further, negative news occurs over a shorter period of time. | • Valence |
| Threshold (12) | Events are more likely to be reported if they pass a threshold. This may imply the intensity, the quality of the news source, etc. | Quality of the journal Accessibility of the article |
| Major extension of news factor | s ¹ : (Harcup & O'Neil 2011) | |
| Celebrity (13) | Events involving people or organizations (in our context journals) who are already well-known to a potential readership. | Twitter presence Social media presence of journal Social media presence of author |
| Newspaper agenda (14) | Stories that set or fit to the news organization's agenda are more likely to be reported on. | Research domainGender: female |
| Entertainment (15) | Stories with entertainment character relating to sex, show business, humans, animals, the environment, social issues and humor are more likely to be reported on. | • Entertainment domain |
| Good news (16) | Events with positive overtones such as rescues and cures influence editorial content | Valence |
| Magnitude (17) | Events and stories that are potentially perceived as sufficiently significant, either in the numbers of people involved or in potential impact | • Use of buzz words |

Appendix 1: Generation of Drivers based on the Theory of News Values