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Social network utilization and the impact of academic research in marketing

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ABSTRACT

The forces that drive the impact of academic research articles in the marketing discipline are of great interests to authors, editors, and the discipline's policy makers. A key understudied driver is social network utilization by academic researchers. In this paper, we examine how activating one's social network can contribute to the impact of academic research and what factors lead researchers to utilize their social network. We treat social networks as a resource that researchers can potentially invoke to supplement other resources available to them. We propose a framework of antecedents for the use of professional social networks by academics. The framework captures researchers' relevant personal and professional experience, as well as conditions associated with the project at hand. Specifically, we study an academic researcher's (1) personal background (gender and country of origin economic advancement), (2) professional development (time since PhD completion and editorial review board (ERB) membership), and (3) ad-hoc human capital directly involved in the research project (team size). The current study draws upon research from scientometrics, social networks, and resource availability and use, and involves an empirical analysis of a sample of 1329 articles published between 1980 and 2008 in top marketing journals. We predict and generally find that women researchers, researchers originating from less economically advanced countries, or those working with fewer co-authors on a research project are more likely to utilize their social network than their peers. We find weaker evidence for our prediction that years since PhD completion and ERB membership are negatively associated with social network utilization. Importantly, we further surmise and find that, in turn, social network utilization enhances the impact of a research article.

1. Introduction

What are the factors that drive the impact of academic research articles? What are the characteristics of publication activity in a discipline? These questions are of great importance and interest to academic scholars, journal editors, and publishers. Similar questions have sparked significant research efforts in the marketing discipline, which include the study of the discipline's history and evolution, nature of contributors, readability of publications, and their impact (e.g., Baumgartner & Pieters, 2003; Goldenberg, Libai, Muller, & Stremersch, 2010; Mela, Roos, & Deng, 2013; Mitra & Golder, 2008; Sawyer, Laran, & Xu, 2008; Seggie & Griffith, 2009; Stremersch & Verhoef, 2005; Stremersch, Verniers, & Verhoef, 2007; Stremersch, Camacho, Vanneste, & Verniers, 2015; Tellis, Chandy, & Ackerman, 1999).

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The present study aims to contribute to marketing scientometrics by examining the understudied role of social network utilization in academic research. Social networks constitute an important resource in knowledge creation and dissemination, and may therefore have meaningful implications for the impact of academic research (Shipilov, 2006). Indeed, academic social network utilization, defined as the professional ties that one activates as part of academic activity, can constitute a resource that is central to scholarship (Friedkin, 1980; Ynalvez & Shrum, 2011). Our main contention is that social network utilization contributes to the impact of academic research and that one can identify which academic researchers are more likely than others to utilize their social network, and what research conditions may prompt or hinder such utilization.

We treat academic social networks as a resource that scholars can use to supplement other resources available to them in their efforts to produce impactful research and develop a framework of antecedents to academics' use of these social networks. The list of antecedents we study is not exhaustive but it aims to look at an academic researcher's "journey", including one's personal background, moving to the professional sphere, and ending with a particular research context experiences. Specifically, we study an academic researcher's (1) personal background (gender and country of origin economic advancement), (2) professional development (time since PhD completion and editorial review board (ERB) membership), and (3) ad-hoc human capital in the particular research project (team size). Our key argument is that the extent to which researchers utilize their professional social networks is a function of these antecedents. We also propose that the utilization of social networks is positively associated with the subsequent impact of an academic research article.

This paper contributes to prior work in marketing in three central ways. First, we shed light on a key mechanism that may enhance the impact of research. Specifically, we examine what characteristics of academic researchers and the research teams they are involved with lead to an increase or decrease in the utilization of their academic social networks. Broadly, our work in this respect fits well with research on social networks in marketing (e.g., Stephen & Toubia, 2010). Second, we focus on the role of social networks as a supplementary resource that may compensate for other unavailable resources. Studying strategies to mitigate deficiencies is of value not only because it is especially ubiquitous for academics but also because it is not at all intuitive what the consequences of resource shortages would be given the mixed evidence in the literature (e.g. Gielens, Van de Gucht, Steenkamp, & Dekimpe, 2008, Moreau & Dahl, 2005, Ynalvez & Shrum, 2011). Third, our measure of social network utilization is a methodological contribution to scientometric research in marketing. We operationalize this measure by counting the number of acknowledgements to other scholars the article lists. Notably, we link social network utilization to the impact of academic research articles, as measured by the number of citations an article receives.

The sample frame for our study consists of articles published in five prominent journals in marketing: International Journal of Research in Marketing (IJRM), Journal of Marketing (JM), Journal of Marketing Research (JMR), Marketing Science (MKS), and Journal of Consumer Research (JCR). We sampled articles published between 1980 and 2008 for a total of 1329 articles.

The rest of the paper is organized as follows. We first provide a theoretical background that draws from research on scientometrics in marketing, social networks, and resource availability and use. We then develop a set of hypotheses about the relationship between authors' personal and professional status, the use of social networks, and the subsequent impact of academic research in marketing. Next, we present the empirical study, its findings and several robustness checks. Finally, we discuss the study's limitations and implications, as well as future research opportunities.

2. Theoretical background

2.1. Scientometric research in marketing

Scientometric research in marketing has focused on the discipline's history, philosophy, evolution, and nature of contributions and contributors. Over the years, these issues have been the subject of a number of studies (e.g. Baumgartner & Pieters, 2003, Golder, 2000, Goldman, 1979, Mela et al., 2013, Seggie & Griffith, 2009, Stremersch & Verhoef, 2005, Stremersch et al., 2007, Stremersch et al., 2015, Tellis et al., 1999, Vargo & Lusch, 2004). These studies presented key developments in the marketing discipline, including: changes in the discipline's dominant logic, orientation and scope; changes in the discipline's views as to its role within the firm and in society; the nature of the research topics studied and research methods used; the growth in the number of researchers, articles and journals; the internationalization of research activity; and the discipline's increasing fragmentation into sub-areas (Goldman & Grinstein, 2010; Wilkie & Moore, 2003). Prior research, however, has neither studied the role of social networks in enhancing the impact of academic research in marketing, nor the factors prompting or hindering social network utilization.

That said, partially related to our research are a number of papers. Seggie and Griffith (2009) studied publication activity in marketing and its relationship with tenure decisions. Their analysis reveals that, as far as personal background characteristics, gender matters. In particular, of the top 58 most prolific marketing scholars only 7 were women. Furthermore, within their sample of 2257 authors publishing between 1982 and 2006, only 443 were women. They also suggest a link between researchers' time since PhD completion and publication productivity (see also Ynalvez and Shrum (2011)). Stremersch and Verhoef (2005) examined the internationalization of the marketing discipline. They showed an increase in international authorship relative to U.S. authorship, with more authors from developing countries. They suggested that there are benefits to the discipline from increased internationalization and the associated heterogeneity of contributors, but, on the other hand, the internationalization of some of the leading journals (JM, JMR) has reduced their impact. Stremersch et al. (2007) examined several drivers of article impact. The authors found that the number of citations a marketing article receives depends more on "what is said" (e.g., quality of an article) than on "who says it" (e.g., author's visibility), and more on "who says it" than on "how it is said" (e.g., expositional clarity).

2.2. Social networks as a resource in academic research

Resources – such as time, financing, knowledge, experience, reputation or human capital – are critical drivers of performance outcomes, both in academic and non-academic contexts (Gielens et al., 2008; Hyytinen & Toivanen, 2005; Ynalvez & Shrum, 2011). The role of resources in academic settings is perhaps especially critical given the pressure to "publish or perish" that may require the mobilization of all possible means to achieve publication. A valuable resource academic researchers can use to supplement other resources is professional social networks.

Social networks involve formal and informal, personal and professional relationships between individuals or groups (Hansen, 1999). They yield social capital, which is "available through, and derived from, the network of relationships possessed by an individual or social unit" (Nahapiet & Ghoshal, 1998, p. 243). In the context of academic scholarship, individual researchers are actors in social networks composed of professional cliques, which are likely to affect an academic article's development and impact (Eaton, Ward, Kumar, & Reingen, 1999; Friedkin, 1980). Access to social networks and the associated social capital provide two key benefits in this setting: (a) others' knowledge and experience can improve the quality of the research, and (b) social ties can help propagate the work by directly circulating it and by indirectly drawing attention to it through signaling (Ben-Ari, 1987; Gargiulo, 1993; Laband & Tollison, 2000). Both processes can play a role in enhancing an article's impact. A rich body of scientometrics literature provides evidence that the foremost function of social networks in academic research is improving the quality of the research, and that the primary driver of an article's impact is its quality. First, authors' main motivation for requesting their peers' assistance prior to publication is to improve the paper. This is evident across the social sciences, humanities, and natural sciences (Cronin, Shaw, & La Barre, 2004). Furthermore, there is strong evidence that peer review, formal or informal, improves the quality of research articles (Cronin, 2001; Cronin & Shaw, 2007). Second, circulating the work is important, but is likely performed only if a paper is inherently valuable, as there is little motivation to cite or promote mediocre or poor work. This is evident in the findings of Stremersch et al. (2007) who suggest that articles' impact is positively and significantly associated with quality indicators. The present study's data provides additional empirical support for this contention. Thus, this paper focuses on the contribution of social networks to the impact of a research article through an article's quality.

2.3. A framework of social network utilization and its drivers

We propose a framework for capturing a host of antecedents to academic researchers' use of social networks. The antecedents we examine relate to researchers' personal, professional, and particular research setting experiences.

Social networks are a resource available to academic researchers that may supplement or even compensate for deficiencies in other resources. But what drives some researchers to increase or decrease their use of this resource compared with their peers? For example, research suggests that an on-going scarcity of resources may lead individuals to develop a tendency to optimally utilize opportunities and better exploit available resources even long after the scarcity is over (Bronfenbrenner, 1979; Frederick & Lowenstein, 1999; Kanter, 1977). In addition, research on social networks in organizations has found that individuals experienced with limited resources often possess a wider social network than their peers do (Ibarra, 1992; Lin, 1982). In a similar vein, to improve their economic and social status, individuals experienced with limited resources – such as immigrants – were found to extensively utilize social networks, leveraging them in business and entrepreneurial activities (Granovetter, 1995; Portes, 1995). In the context of research teams, work overload constrains a small team more than a large team, and thus members of a small team are likely to adapt by effectively managing other resources at their disposal (Gibbert, Hoegl, & Vilikangas, 2007).

Utilization of available resources is especially important for academic research, which is inherently difficult, time consuming, and involves considerable risks. Consequently, scholars may engage in actions that allow them to confront resource constraints effectively (Hoegl & Gibbert, 2007). Academic researchers and research teams that are accustomed to resource shortages because they faced such shortages for prolonged periods or those currently experiencing deficiencies in experience, knowledge, or human capital, may thus find it beneficial to utilize their social networks to supplement other available resources.

Next, we develop a set of hypotheses that link personal background, professional development, and ad-hoc human capital to the tendency to increase or decrease social networks utilization in academic research activity.

2.3.1. Personal background

An individual's personal background is meaningful for understanding one's present set of skills, behaviors, and performance (Bronfenbrenner, 1979; Browning, Leventhal, & Brooks-Gunn, 2005; Jackson, 2006). For our purposes, taking into account individuals' experiences with resource availability and social status may explain why some people develop a stronger tendency to seize resources and opportunities once these are available to them. Specifically, some individuals grew up with plentiful resources whereas others might have faced a scarcity of resources for prolonged periods. Our framework includes two central personal background characteristics—gender and country of origin economic advancement. Both of these characteristics are likely to affect an individual's behavior as a researcher and the tendency to utilize various academic resources.

2.3.1.1. Gender. Much more than men, women are experienced with adversity due to their social status in a variety of contexts (Ibarra, 1992; Tharenou, 1999). This adversity in social status characterizes many societies, to differing degrees, and is often fostered by the central social institutions in a woman's childhood: parents, teachers, and friends (Glass, 1990; Tiedemann, 2000). Importantly, this social adversity is later evident in one's professional life, whether academic or not (Ginther & Kahn, 2006; Jeppesen & Lakhani, 2010; Lutz, 1990; Toren, 2000). Due to their unique social status, women must be more resourceful

to achieve similar results to peer men and are therefore likely to develop a tendency to seize resources and opportunities available to them. For instance, in an organizational setting, women utilize a broader social network than men (Ibarra, 1992) and overall improve their job-related political senses and inter-personal capabilities (Kanter, 1977). This, in turn, enables women researchers to utilize their social networks more extensively when compared to men.

2.3.1.2. Country of origin economic advancement. An academic researcher's country of origin plays an important role in terms of socio-economic background. Some countries lack the economic capabilities of highly advanced countries, and are more limited in their ability to fund infrastructure development, education, and welfare (Chase-Dunn & Grimes, 1995; Van Rossem, 1996; Wallerstein, 1974). The more (less) advanced the economic status of a country is, the more (less) an individual is likely to enjoy resources. Compared with individuals from highly economically advanced countries, those from less economically advanced countries are likely to be more experienced in handling a variety of adverse conditions, all related to limited resources and opportunities, such as education, professional alternatives, wages, and financial funds. These may lead individuals from less economically advanced countries to develop a tendency to seize resources and opportunities available to them, such as social networks. Importantly, this is likely to be the case even after moving to an economically advanced country (Levels, Dronkers, & Kraaykamp, 2008).

2.3.2. Professional development

Academic researchers' professional development, and the knowledge associated with it, are expected to increase as one's career progresses. Experienced researchers have gone through a learning process and honed their set of academic capabilities (Seggie & Griffith, 2009). This process leads to the creation of multiple types of resources such as knowledge, funding, and reputation (Ynalvez & Shrum, 2011). Specifically, we examine two central antecedents of professional development: time since PhD completion and ERB membership.

2.3.2.1. Time since PhD completion. The longer the time since obtaining the PhD degree, the more an academic researcher is likely to gain experience and knowledge required to succeed in the profession (Seggie & Griffith, 2009; Ynalvez & Shrum, 2011). As a result, experienced researchers are less likely to feel the need to draw upon their professional social network to gain access to peers' advice or experience. Conversely, the shorter the time that has elapsed since PhD completion, the greater a researcher's tendency to rely on social network resources for feedback and assistance, thereby compensating for the hitherto limited professional knowledge.

2.3.2.2. ERB membership. Editorial review boards typically include a limited number of the leading academic researchers in the discipline (Stremersch et al., 2007). These scholars are highly knowledgeable and enjoy reputational resources due to their experience, productivity, and impact on the discipline. Further, due to their frequent exposure to state of the art research – as part of their editorial responsibilities – their knowledge base continuously and disproportionately increases. These aspects are likely to render utilizing their professional social network to gain access to knowledge and professional advice somewhat redundant. As a result, whereas the professional social network of ERB members is likely to be substantial, they may be less likely to feel the need to utilize it. Alternatively, non-ERB members are likely to seek more feedback and assistance from their social network to supplement their less extensive professional knowledge compared with ERB members.

2.3.3. Ad-hoc human capital

Academic researchers can have more or less available resources in the context of specific research projects. Prior studies have focused on ad-hoc resources such as time (or time pressure), monetary resources (or lack thereof), and work overload (e.g. Amabile, Regina, Coon, Lazenby, & Herron, 1996, Andrews & Smith, 1996). We study a central characteristic of the research project: the size of the team, i.e., the number of researchers directly involved in its authorship.

2.3.3.1. Team size. For academic research teams, the human resource – the number of researchers directly contributing to the development effort and hence to the article's quality – is key. Prior research has highlighted the benefits of a large number of team members to a project's success, including more collective work hours, better problem solving, and higher levels of cross-fertilization and judgment (Sethi, Smith, & Park, 2001). Since 1900, academia has witnessed a steady and noteworthy acceleration in the number of articles published by teams and an increase in team size due to the above advantages (Eaton et al., 1999; Laband & Tollison, 2000). More authors on a research initiative increase both the potential resources available to the research and the potential number of opportunities to present the work to peers and receive comments and suggestions, which may obviate the need to draw upon other resources, such as social ties (Stremersch et al., 2007). Conversely, a small team of authors poses an adversity in terms of limited human capital and may trigger a process of seeking out additional input sources. Hence, single authors and small teams of authors are more likely to compensate for their paucity in direct human capital by actively soliciting comments, suggestions, and inputs from others (Hartley, 2003).

In sum, we formally state the following hypotheses:

H1a. Participation of women authors positively affects the utilization of the research team's social network.

H1b. Participation of authors originating from less economically advanced countries positively affects the utilization of the research team's social network.

H2a. Professional experience of authors in terms of years since PhD completion negatively affects the utilization of the research team's social network.

H2b. Professional experience of authors in terms of ERB membership negatively affects the utilization of the research team's social network.

H3. A greater number of co-authors negatively affects the utilization of the research team's social network.

Noteworthy is that our dependent variable – social network utilization – is at the article- and thus team-level, whereas our predictions reflect both team level characteristics (number of co-authors and their collective years of experience as evident in their time since PhD completion) and individual-level characteristics (gender, country of origin economic development, and ERB membership). Conceptually, this approach is in line with prior research on teamwork that demonstrate that teams are comprised of individuals, and that team performance relies on a combination of individual- and team-related skills and capabilities (Griffin & Hauser, 1996; Khurana & Rosenthal, 1998). Empirically, we will address this by measuring individual-level predictors at the team-level and by analyzing individual-level predictors and outcomes in a robustness check.

2.4. Social network utilization and the impact of research articles

As discussed above, social networks are resources highly relevant to academic research. Social networks facilitate the transfer of information and knowledge, which, in turn, can improve performance outcomes (Cronin, 1995; Friedkin, 1980). We focus on one's utilized social network—the ties that one actually activates to prompt a specific response. The number of ties activated affects the possible benefits to be derived from one's network (Palmatier, 2008). Specifically, authors can activate many or few of the ties in their social networks, thus gaining access to more or less social capital (Van den Bulte & Wuyts, 2007). The larger the social network utilized, i.e., the more individuals who are prompted for input, the greater the potential for benefiting from social capital. For academic researchers, social capital prior to publication includes feedback, comments, and suggestions from peers that contribute to the quality of the article. Indeed, prior research has demonstrated that social networks and the associated social capital play a key role in enhancing an article's quality, and that authors' main motivation for requesting peer assistance is to improve the quality of their work (Cronin & Shaw, 2007; Cronin et al., 2004).

Once prompted, peers may be willing to contribute to the quality of the work of the soliciting authors because (1) they wish to help advance the field, improve the quality of research conducted, and help their colleagues develop professionally; or (2) because of personal reasons, such as building good will, reciprocating for help they received in the past, or hoping for future reciprocity for their work. Moreover, contacted peers can offer not only their own knowledge but also that of their own social connections; thus, authors can potentially benefit from a "two-step" access to a wider pool of social capital (Gargiulo, 1993).

Overall, activating more individuals in one's social network means access to more social capital, which in turn should positively affect an article's impact. For these reasons, social network utilization is an important driver of an article's quality, and thus its subsequent impact:

H4. The larger the social network utilized by a research team—the greater the article's impact.

3. Methods

3.1. The sample

Five marketing journals – IJRM, JM, JMR, MKS, and JCR – constitute the sample frame for the study. These five publications are prominent journals in the marketing discipline, and appeal to a wide audience (Stremersch et al., 2007). All five journals have evolved with the marketing discipline, and reflect prevailing trends in marketing research over time. They differ in the type of work they publish and in the profiles of their contributors (Baumgartner & Pieters, 2003; Tellis et al., 1999; Wilkie & Moore, 2003). This sampling frame also corresponds with prior scientometric studies in marketing research (Stremersch et al., 2007; Tellis et al., 1999). We randomly selected a single issue for each year from 1980 to 2008 for the journals JM, JMR, and JCR. Because IJRM and MKS began publication in 1984 and 1982, respectively, and have fewer articles per issue, we randomly selected two issues for each year from these journals. This allowed some counter-balancing of the sample and better accounting for authors originating from less economically advanced countries, who are better represented in these two journals. We collected data on all articles in the sampled issues. Following Stremersch and Verhoef (2005), we excluded book reviews, software reviews, commentaries and the like, as well as any other article that was clearly not peer-reviewed, such as editorials. Our sample consists of 1329 articles: 207 from IJRM, 228 from JM, 288 from JMR, 323 from MKS, and 283 from JCR.

3.2. Measures

3.2.1. Dependent variables

To measure authors' social network utilization, we used the number of acknowledgments for comments, suggestions, and inputs listed in the article. Prior research has emphasized the importance in academic work of acknowledging scientific, financial, technical, and administrative contributions to a research article (Cronin, 1995; Cronin et al., 2004). We therefore examined the list of acknowledgments in each article, and counted acknowledgements of specific individuals' comments, suggestions, and inputs for the following reasons. First, acknowledging specific individuals is strongly related to theories of social networks. Second, an

increase in the quality of an article is typically attributable to personal interaction between individual scholars (Cronin, 1995; Cronin & Shaw, 2007). Third, prior research on an extensive sample of articles has found that acknowledgements to specific individuals far exceed any other type of acknowledgements (Giles & Councill, 2004). This pattern is evident in our data as well.

Our ultimate dependent variable is the impact of a given academic research article, measured by the total number of citations the article received from subsequent articles. The number of citations received by a research article is a bibliometric tool, widely used by scholars as a proxy for the impact of scientific work; the larger the number of citations, the greater the article's impact. Citation analysis is also frequently used by marketing researchers (e.g. Cote, Leong, & Cote, 1991, Stremersch et al., 2007). We collected citation data for the period 1980–2011 from the Social Science Citation Index between January and March 2012 to account for the expected lag between publication and subsequent citations of an article (Cote et al., 1991).

3.2.2. Independent variables

3.2.2.1. Personal background. We captured participation of women authors in an article by counting the number of women authors. We determined an author's gender using the photograph on her/his bio page or website or as given in the article itself. To capture authors' country of origin economic advancement we used the following procedure. First, we identified the country where each author had completed undergraduate studies. Stremersch and Verhoef (2005) designated the country of undergraduate studies as the author's country of origin after finding that moving abroad for undergraduate studies was rare and the correlation between the country of origin and the country of undergraduate education is very high. Given that we examine a similar period, we follow the procedure of Stremersch and Verhoef (2005). To classify authors' country of origin as less/more economically advanced we used the 2008 International Monetary Fund (IMF) classification of countries. The IMF classification includes advanced countries and developing countries (Nielsen, 2011). For consistency, in this paper we use the terms more/less economically advanced countries, respectively. The IMF classification is robust over time, as we also demonstrate in a robustness check. Economically advanced countries in our sample include countries such as the United States, the United Kingdom, Canada, and the Netherlands. Less economically advanced countries include, for example, India, China, Brazil, and Turkey. We used the number of authors from less economically advanced countries who participated in the authorship of an article as our measure.

3.2.2.2. Professional development. Based on authors' bio pages, for each author we calculated the number of years since PhD completion at the time of the article's publication. To account for the collective experience that all collaborating authors brought to the research endeavor, we used the cumulative years since PhD completion of all the authors. The reason is that our theory suggests that co-authors bring to the table their collective and potentially synergistic experience. Using the average instead of cumulative years since PhD completion in a robustness check yielded similar results. To account for authors' ERB membership, we first identified the ERB lists of the five studied marketing journals for the years 1980–2008. For each article in our sample, we then counted the cumulative number of ERB memberships of all co-authors when the article was published.

3.2.2.3. Ad-hoc human capital. Team size was measured by the number of contributing authors listed on the first page of an article.

3.2.3. Control variables

Our analysis controls for additional effects, potentially relevant to authors' usage of social network or an article's impact.

Because authors' academic affiliations might affect the quality and impact of their research, for each article we collected data on the number of authors from top-tier business-schools. Following Stremersch et al. (2007), we collected data on the business schools' rankings. We used the BusinessWeek index closest to the year of publication based on the 1988, 1998, and 2008 indices. The BusinessWeek index is the most widely used, considered the most influential, and its rankings are stable over time (Morgeson & Nahrgang, 2008). We used the number of authors from the top 25 business schools (a cutoff used by the BusinessWeek index) as our measure. For each article, we also controlled for authors' prior publications by counting the cumulative number of prior publications for all co-authors at the time of publication (according to the ABI Inform database).[1] We measured authors' PhD university reputation. Given that many marketing scholars did not obtain their PhD degrees in business schools (but rather in psychology, economics, and other departments), it seems that looking at the PhD university reputation would be more revealing than looking at the reputation of the university's business school. This measure was coded as 1 if an author's PhD was obtained from one of the top 25 universities at the time according to the U.S. News and World Report ranking, which is the most reputable of university rankings. We controlled for social network quality by counting the number of acknowledgees from top-tier schools, applying the same approach as with authors' affiliation with a top-tier business school. We controlled for articles' subject area and method type. Following prior research (Stremersch et al., 2007; Tellis et al., 1999), we trained a research assistant who worked in parallel with two of the authors to assign each article to one of four subject areas and one of four method types. The few classification disagreements were resolved via discussion among the authors and the research assistant. The four subject areas are (1) general theory (e.g., exchange theory), (2) managerial/strategy (e.g., market orientation), (3) consumer behavior (e.g., intertemporal choice), and (4) methodology (e.g., scale development). The method type is the set of techniques the article uses; the four types are (1) conceptual (e.g., review papers), (2) empirical (e.g., survey research), (3) methodological (e.g., new method), and (4) analytical (e.g., mathematical modeling). We included dummy variables to control for publication outlet (IJRM, JM, JMR, MKS, and JCR). To control for time effects, we

[1] To address quality vs. quantity issues of prior publications, we used prior publications in the five focal journals in a robustness check, finding that our results are unchanged.

used year of publication dummy variables and a time trend in additional analyses. Finally, consistent with previous research, we also controlled for an article's order in issue,[2] number of references, number of pages, and whether it won an award (Stremersch et al., 2007).

3.2.4. Treatment of missing data

Per the identification of women authors, when a photograph was missing, we used the author's first name as a gender indicator. The authors of the present study independently classified names. The very few cases of disagreement were treated as missing data points. We were unable to determine the gender of 8 out of 3019 authors. For 45 articles we could not identify all the authors' country of undergraduate education because of a missing biography or missing information in a biography. As might be expected, the older the publication, the more difficult it was to obtain data on authors' country of origin. We employed a missing data procedure with an EM algorithm to deal with missing data (Howell, 2008). We could not find the year of PhD completion for 49 authors. Our examination of these revealed that many of them never received a PhD degree, for example, because they were practitioners rather than scholars. In cases where more than one of these co-authored an article, we excluded the articles from the analysis. We could not find information on prior publications for 28 authors in 28 articles, of which we dropped two articles because they were single-authored.

3.3. Model

To test H1a–H3 we estimated a zero-inflated Poisson model, where the inflation equation is:

$$\Pr(y_i = 0) = \alpha_1 + \sum \beta_k \text{Subject} + \sum \beta_l \text{Method} + \sum \beta_m \text{Publication}_i + \sum \beta_n \text{Time} + \omega_i, \tag{1}$$

where i is a subscript for article, Subject is subject area dummy variables, Method is method type dummy variables, Publication is journal outlet dummy variables, and Time is year dummy variables. These variables are inherent to the marketing discipline. They represent idiosyncratic differences between sub-areas and over time within the marketing discipline, and are thus likely to affect both network utilization patterns (H1a–H3) and citation patterns (H4) of marketing articles. For example, it is possible that social networking and citation patters differ between teams publishing in Journal of Consumer Research vs. Marketing Science and between researchers publishing conceptual vs. empirical articles. Similarly, it is likely that social networking habits and article citation patterns vary over time. Therefore, we use these variables as predictors of the probability of $y_i = 0$. The Poisson equation is:

$$\begin{aligned} \text{SocialNetwork}_i = {} & \alpha_1 + \varkappa_1 \text{Women}_i + \varkappa_2 \text{EconomicAdvance}_i + \varkappa_3 \text{YearsPhD}_i + \varkappa_4 \text{ERB}_i + \\ & \varkappa_5 \text{NumberAuthors}_i + \sum \gamma_{6-15} \text{Controls}_i + \varepsilon_i, \end{aligned} \tag{2}$$

where SocialNetwork is social network utilization measured by number of acknowledgements, Women is the number of women authors, EconomicAdvance is the number of authors from less economically advanced countries, YearsPhD is the cumulative number of authors' years since PhD completion, ERB is the cumulative number of ERB members among the authors, NumberAuthors is the number of co-authors, and Controls is control variables that include the number of authors at top-tier business schools, number of authors with PhDs from top-tier universities, cumulative number of prior publications, dummy variables of publication outlet, order in issue, number of pages, and number of references.

To test H4 we estimated the above zero-inflation Eq. (1), followed by the following Poisson equation:

$$\begin{aligned} \text{Impact}_i = {} & \alpha_1 + \delta_1 \text{SocialNetwork}_i + \delta_2 \text{Women}_i + \delta_3 \text{EconomicAdvance}_i + \delta_4 \text{YearsPhD}_i \\ & + \delta_5 \text{ERB}_i + \delta_6 \text{NumberAuthors}_i + \sum \delta_{7-18} \text{Controls}_i + \upsilon_i, \end{aligned} \tag{3}$$

where Impact is the article's impact and Controls is the control variables listed in Eq. (2) with the addition of network quality, measured by the number of acknowledgees from top-tier business schools, and a dummy variable specifying if the article received an award.

3.4. Outlier analysis

We conducted outlier analysis prior to hypotheses testing. Controlling for outliers is important because a small number of data points may substantially affect overall results (Hadi, 1992). We adopted a very conservative approach and eliminated only articles of which the number of citations exceeded 5 standard deviations from the mean (Stremersch & Verhoef, 2005). Using this approach, we identified and removed 9 outlier articles from our sample; these articles received an unusually high number of citations, substantially inflating the sample's standard deviation (e.g., Cronin and Taylor (JM, 1992), Ganesan (JM, 1994), Hoffman and Novak (JM, 1996)).

[2] We also tested our models substituting order in issue with a lead article variable (whether an article was leading an issue), which does not change the nature of our findings and is consistently insignificant.

3.5. Selection bias

Potentially, our data may raise a selection-bias issue. One could argue that specific personal background characteristics may lead some researchers, especially women and authors from less economically advanced countries, to be subject to stricter scrutiny due to selection bias in academia; that is, articles with those authors have to surpass a more stringent bar to get published. Consequently, if published, their articles are likely to be of higher quality and thus more extensively cited. Importantly, we do not hypothesize a direct effect of authors' personal background on an article's impact. Our key argument is that utilization of social networks can enhance an article's impact. Nevertheless, we addressed the potential selection bias by conducting two-step sample-selection Poisson analyses (Miranda & Rabe-Hesketh, 2006) in addition to our main models and find similar results. We report these results in Appendix A.

4. Findings

4.1. Descriptive findings

Table 1 reports descriptive characteristics of the key variables in our analysis. Women participated in 418 articles. Authors from less economically advanced countries participated in 515 articles. The cumulative number of years since PhD completion across all co-authors on an article (measured at the time the article was published) was close to 24 years. A total of 626 articles in our sample had at least one author on at least one ERB at the time of publication. Articles with two authors were most common ($n = 586$), followed by articles with three authors ($n = 372$), a single author ($n = 284$) and four authors ($n = 73$). Very few articles had five authors or more ($n = 14$). The impact of an article, as measured by the number of citations it received, ranges from 0 to 465. The number of acknowledgments – the size of the social network utilized – ranges from 0 to 21. In terms of subject areas, we classified 184 articles as general theory, 380 as managerial/strategy, 514 as consumer behavior, and 251 as methodology. In terms of method types, we classified 139 articles as conceptual, 773 as empirical, 132 as methodological, and 285 as analytical. For a summary of the descriptive findings and a correlation matrix, see Tables 1 and 2.

4.2. Hypotheses testing

Table 3 reports the model estimations for H1a–H3. H1a and H1b relate to personal background characteristics and posits that participation in an article of women authors and authors originating from less economically advanced countries positively affects the utilization of the research team's social network. The results support H1b ($\beta = .055$, $p = .025$), whereas H1a is supported with marginal significance ($\beta = .056$, $p = .066$).

H2a and H2b relate to professional development characteristics and posits that the academic experience of authors, in terms of cumulative years since PhD completion or participation of authors with ERB membership, negatively affects the utilization of the research team's social network. The results suggest that cumulative seniority of authors is not significantly associated with social network utilization ($\beta = -.0001$, $p > .1$; this effect is however negative and significant in the selection model presented in Appendix A) and that ERB membership is negatively associated with the use of social networks with marginal significance ($\beta = -.035$, $p = .057$; although this effect is not significant in the selection model presented in Appendix A). Overall, the support for H2a and H2b is weak.

H3 posits that a large team of co-authors is less likely to utilize social networks. We indeed find that the number of authors is negatively associated with social network utilization ($\beta = -.149$, $p < .001$), in support of H3.

H4 predicts that the larger the social network utilized by the research team—the greater the article's impact. Table 4 reports the model estimation. We indeed find that the size of the utilized social network is positively associated with the article's impact ($\beta = .020$, $p < .001$), in support of H4.

Table 1
Descriptive characteristics of the study's main variables.

	Number of articles with:								Mean	Range
	0	1	2	3	4	5	6	>7		
Acknowledgments	531	137	134	129	104	98	58	132	2.433	0–21
Number of citations									44.717	0–465
Women authors	908	330	74	14	0	0	0	0	.392	0–3
Authors from less economically advanced countries	813	336	139	38	1	0	0	0	.551	0–4
Cumulative years since PhD completion									23.97	0–135
ERB memberships	702	496	119	11	0	0	0	0	.581	0–3
Number of authors		284	586	372	73	12	0	2	2.213	1–11

4.3. Robustness checks and additional analyses

4.3.1. Robustness checks

First, as discussed above, our dependent variable – social network utilization – is at the article- and thus team-level, whereas predictions reflect both team and individual characteristics. Thus, it would be valuable to examine if testing our predictions using a sub-sample consisting of only single-authored articles to match individual-level predictions and outcomes yields similar results. Testing our predictions on this sub-sample of 284 single-authored articles, we find that both women authors and authors from less economically advanced countries are positively associated with social network utilization ($\beta = .251$, $p < .01$ and $\beta = .158$, $p < .05$, respectively).[3] We also find that years since PhD completion is negatively associated with social network utilization ($\beta = -.013$, $p < .05$), that ERB membership is negatively associated with social network utilization with marginal significance ($\beta = -.105$, $p = .09$), and that social network utilization is positively associated with an article's impact ($\beta = .067$, $p < .01$).

Second, it could be argued that the error terms of a model estimating the effects on article impact and of a model estimating the effects on social network utilization are correlated. We therefore tested our predictions by analyzing a system of two equations in a seemingly unrelated regressions (SUR) setup using a conditional mixed process model (Roodman, 2011) that accounts for correlation of the error terms. Table 5 presents the results of this estimation, which uses the logs of count dependent variables. We find that both women authors and authors from less economically advanced countries are positively associated with social network utilization ($\beta = .070$, $p = .06$ and $\beta = .099$, $p < .01$, respectively). Years since PhD completion and ERB membership are however not associated with social network utilization ($\beta = -.003$ and $\beta = .013$, $p > .1$). Team size is negatively associated with social network utilization ($\beta = -.139$, $p < .01$). Finally, consistent with our original results, social network utilization is positively associated with an article's impact ($\beta = .313$, $p < .01$).

Third, to establish the robustness of our findings, we used nested zero-inflated Poisson models, excluding the effects of women authors, authors from less economically advanced countries, cumulative years since PhD completion and ERB membership, and all four, respectively. Overall, the results (Table 6) demonstrate that even when excluding variables inherent to our framework, our findings regarding social network utilization are largely robust.

Fourth, we tested if the effect of country of origin economic advancement is robust over time. Specifically, replacing the 2008 IMF measure with a 1999 IMF measure replicates our findings. Fifth, we tested if the effect of country of origin economic advancement is robust when using a country-allocation scheme different than that of the IMF. We thus examined our models using the 2008 United Nations' continuous measure of economic strength of countries, again, replicating our findings.

Sixth, whereas our main analysis accounts for the number of authors, it does not distinguish between an article written by a single woman author and a team that consists of one woman author and three men authors. Similarly, it does not distinguish between an article written by a single author from a less economically advanced country and a team that consists of one such author and three authors from economically advanced countries. To address this point we replaced the number of women authors with the percent of women authors and the number of authors from less economically advanced countries with their ratio of all authors. We find that our results remain robust for women authors, and directionally suggestive for authors from less economically advanced countries ($\beta = .077$, $p = .123$).

Seventh, we tested whether our key findings are robust to the exclusion of the covariates in the zero-inflated model (Eq. (1)) or their inclusion in Poisson models (Eqs. (2) and (3)). Excluding these covariates improves our initial key results (e.g., for women authors $\beta = .099$, $p < .001$; authors from less economically advanced countries $\beta = .147$, $p < .001$; years since PhD completion $\beta = -.003$, $p = .06$). Adding these covariates to the Poisson model in Eq. (2) increases the significance level for years since PhD completion ($\beta = -.007$, $p < .01$). Women authors and ERB membership are directionally suggestive but insignificant ($\beta = .013$ and $\beta = -.027$ respectively, $p > .1$). Adding these covariates to the Poisson model in Eq. (3), our key findings do not change (social network utilization: $\beta = -.022$, $p < .001$).

Finally, as reported in the selection section, our sample selection models presented in Appendix A accentuate the robustness of our findings.

4.3.2. Additional analyses

We performed an additional set of analyses. First, to test the appropriateness of fixed effects for journal and for year of publication, we conducted Hausman tests. For both journal and year in our first model, we find $\chi^2_{(32)} = 5956.35$ and $\chi^2_{(17)} = 2677.53$ respectively, $p < .01$, indicating the appropriateness of fixed effects. For both journal and year in our second model, we find $\chi^2_{(41)} = 6602.11$ and $\chi^2_{(22)} = 1580.06$ respectively, $p < .01$, indicating the appropriateness of fixed effects here too.

Second, it is interesting to examine the effect of a time trend. Thus, we used a time trend in Eq. (3). As may be expected, the time trend is negatively associated with the impact of articles ($\beta = -.0322$, $p < .01$). This result remains similar when using a time trend in the preceding zero-inflation equation.

Third, an alternative explanation for the positive impact of women authors on social network utilization may be that for women authors a communal orientation, i.e., caring more for others, is the force driving increased utilization of social networks (e.g., Winterich, Mittal, & Ross, 2009). However, our theory suggests that women ask for help and does not address their tendency to care for others. We argue that soliciting input from one's social network is closely associated with such asking for help, whereas caring for others is not directly manifested in one's network utilization. Further, to test for communal orientation, we first replaced

[3] To achieve convergence in this small sample, we used a Poisson rather than an inflated-zero Poisson model and omitted the time fixed effects. Missing data led to a loss of 6 observations in the social network model and of 30 observations in the impact model.

Table 2
Correlation matrix of the study's variables.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Article's impact	1														
2. Social network utilization	.065*	1													
3. Women authors	−.064*	.028	1												
4. Authors from less economically advanced countries	−.102**	.057*	−.018	1											
5. Cumulative years since PhD completion	−.078**	−.137**	.106**	.150**	1										
6. ERB memberships	.012	−.061*	−.000	.165**	.364**	1									
7. Number of authors	−.069*	−.131**	.226**	.253**	.702**	.332**	1								
8. Authors from top-tier business schools	.050	−.010	−.015	.176**	.178**	.283**	.224**	1							
9. Reputation of PhD university	−.015	.109**	.004	.148**	.152**	.162**	.150**	.324**	1						
10. Cumulative prior publications	−.046	−.124**	.020	.071**	.714**	.468**	.523**	.229**	.116**	1					
11. Order in issue	−.131**	.001	.047	.015	−040	-,067*	−.008	−.099**	−.074**	−.029	1				
12. Number of references	.215**	.076**	.083**	−.052	.112**	.063*	.056*	−.071**	−.084**	.112**	−.162**	1			
13. Number of pages	.139**	.136**	.001	.054*	.070*	.110**	.065*	.107**	.098**	.048	−.383**	.429**	1		
14. Award	−.012	−.002	−.004	.045	−.000	−.030	−.006	−.017	−.023	.005	.082**	−.005	−.017	1	
15. Quality of social network	.034	.700**	.001	.054*	−.168**	−.015	−.176**	.202**	.242**	−.131**	−.054*	−.026	.157**	−.008	1
16. General theory	.105**	.060*	−.068*	−.050	−.054*	−.047	−.089**	−.003	−.018	−.037	−.057*	.089**	.075**	.034	.041
17. Managerial/Strategy	−.028	−.012	−.021	.061*	.075*	.027	.072**	−.032	−.006	.025	−.038	.096**	.057*	−.015	−.045
18. Consumer behavior	−.029	.084**	.168**	.011	−.056**	−.047	−.025	.001	.062*	.039	.037	−.055*	−.007	−.032	.100**
19. Methodology	−.024	−.144**	−.124**	−.040	.030	.070*	.026	.038	−.053	.053	.048	−.122**	−.123**	.025	−.108**
20. Conceptual	.073**	−.052	−.024	−.128**	−.044	−.041	−.139**	-,097**	−.076**	−.030	−.063*	.222**	.015	.013	−.059*
21. Empirical	.052	.107**	.132**	.009	.010	−.035	.091**	−.076**	−.027	−.001	.091**	.055*	−.030	.000	.043
22. Methodological	−.036	−.051	−.010	−.040	.063*	.000	.010	−.005	−.034	−.051	−.037	−.060*	−.015	.061*	−.034
23. Analytical	−.091**	−.052	−.132**	.114**	−.025	.073**	−.013	.167**	.114**	−.012	−.035	−.188**	.036	−.058*	.017
24. IJRM	−.202**	−.116*	.088**	−.013	.149**	.002	.106****	−.136**	−.114**	.066*	−.204**	.066*	.112**	.021	−.127**
25. JM	.118**	−.036	.017	−.035	.028	−.024	.079**	−063*	−.154**	.003	.031	.213**	−.014	.051	−.125**
26. JMR	.064*	−.033	−.056*	.019	−.046	.048	−.001	.079**	.042	−.018	.167**	−.109**	−.276**	−.056	.012
27. MKS	−.075**	.054*	−.158**	.125**	.019	.080**	−.030	.200**	.232**	.030	−.176**	−182**	.322**	−.006	.188**
28. JCR	.084**	.113**	.128*	−.106**	−.131**	−.113**	−.134**	−.110**	−.043	−.075**	.167**	.045	−.144**	−.005	.018

* $p < .05$.
** $p < .01$.

Table 2 (*continued*)

Variables	16	17	18	19	20	21	22	23	24	25	26	27	28
1. Article's impact													
2. Social network utilization													
3. Women authors													
4. Authors from less economically advanced countries													
5. Cumulative years since PhD completion													
6. ERB memberships													
7. Number of authors													
8. Authors from top-tier business schools													
9. Reputation of PhD university													
10. Cumulative prior publications													
11. Order in issue													
12. Number of references													
13. Number of pages													
14. Award													
15. Quality of social network													
16. General theory	1												
17. Managerial/Strategy	−.253**	1											
18. Consumer behavior	−.318**	−.502****	1										
19. Methodology	−.193**	−.305**	−.383**	1									
20. Conceptual	.261**	−.025	−.089**	−.089**	1								
21. Empirical	−.114**	.026	.310**	−.315**	−.403**	1							
22. Methodological	−.074**	−.098**	−.160**	.379**	−.113**	−.391**	1						
23. Analytical	.002	.058*	−.189**	.169**	−.178**	−.616**	−.173**	1					
24. IJRM	−.028	.026	−.064*	.073****	.056*	−.048	.058*	−.027	1				
25. JM	.014	.259**	−.123**	−.158**	.092**	.082**	−.077**	−.111**	−.195**	1			
26. JMR	−.062*	−.066*	−.068*	.217**	−.132**	−.005	−.028	.125**	−.225**	−.239**	1		
27. MKS	.072**	.029	−.053	−.031	−.044	−.230**	.111**	.229**	−.243**	−.257**	−.298**	1	
28. JCR	−.001	−.227**	.296**	−.105*	.044	.213**	−.068*	−.240**	−.223**	−.236**	−.273**	−.294**	1

Table 3
Antecedents of social network utilization in academic research teams in marketing: estimation results for Eqs. (1) and (2).

	DV: Social network utilization coefficients (SE)	
Women authors	.056	(.030)†
Authors from less economically advanced countries	.055	(.024)*
Years since PhD completion	−.000	(.002)
ERB membership	−.035	(.018)†
Number of authors	−.149	(.033)***
Authors from top-tier business schools	.013	(.024)
Reputation of PhD university	.193	(.040)***
Prior publications	.000	(.000)
Order in issue	.013	(.006)*
Number of references	.002	(.000)*
Number of pages	.006	(.004)
Publication outlet		
IJRM	−.200	(.072)**
JM	−.205	(.061)***
JMR	−.153	(.056)**
MKS	−.062	(.058)
JCR		
Intercept	1.403	(.090)***
Inflation model (logit)		
Subject area		
Methodology		
General theory	−.654	(.243)**
Managerial/strategy	−.378	(.208)†
Consumer behavior	−.284	(.201)
Method type		
Analytical		
Conceptual	.262	(.247)
Empirical	−.136	(.172)
Methodological	.210	(.241)
Publication outlet		
IJRM	1.024	(.219)***
JM	−.194	(.219)
JMR	.201	(.203)
MKS	.207	(.201)
JCR		
Log Likelihood	−2644.69	
Likelihood ratio χ^2	111.12***	
N	1313	

Time fixed effects are included in the analysis but not displayed.
* $p < .05$.
** $p < .01$.
*** $p < .001$.
† $p < .1$.

our measure of women authors with Hofstede's (2001) national culture dimension of femininity (masculinity) that captures a communal orientation. This analysis suggests that Hofstede's femininity dimension is not significant when replacing our measure ($\beta = .001$, $p > .1$). To further test communal orientation, we collected data on authors' country of origin's helping others tendencies, which is at the heart of a communal orientation (Winterich et al., 2009). We used the 2010 World Giving Index score reported by Charities Aid Foundation as it was the first edition of this index ever released. This 0–100% index accounts for the percentage of the population giving money to charities, volunteered or helped a stranger in the last month. Again, replacing our measure of women authors with the World Giving Index reveals that the latter is insignificant ($\beta = -.001$, $p > .1$, for both cumulative and average giving scores).

Fourth, it is valuable to learn if authors from less economically advanced countries positively affect social network utilization when controlling for the fact that some of those countries are collectivistic in nature and thus perhaps networking is part of a collectivist origin rather than economic adversity. We collected data on collectivism/individualism characteristics of the country of origin of authors (Hofstede, 2001). We used the average score of collectivism/individualism for the authors' country of origin (results are robust for using the cumulative scores of all authors). Consistent with our theoretical arguments, we find a significant effect of participation of authors from less economically advanced countries on social network utilization ($\beta = .082$, $p < .05$), and no significant association between collectivism and social network utilization. In addition, replacing the measure of authors from less economically advanced countries with the collectivism measure does not yield a significant effect of country of origin's collectivism on social network utilization.

Fifth, it is interesting to examine if authors with a PhD degree from US universities significantly affect the utilization of networks above and beyond PhDs from top-tier universities and country of origin. Adding the number of authors with PhDs from US universities to Eq. (2), we find that they do not significantly affect social network utilization ($\beta = .001$, $p > .1$).

Table 4
Antecedents of article impact in academic research teams in marketing: Estimation results for Eqs. (1) and (3).*

	DV: Article impact coefficients (SE)	
Social network utilization	.020	(.002)***
Women authors	−.117	(.007)***
Authors from less economically advanced countries	−.117	(.006)***
Years since PhD completion	−.001	(.000)**
ERB membership	.023	(.004)***
Number of authors	−.003	(.007)
Authors from top-tier business schools	.088	(.005)***
Reputation of PhD university	−.031	(.009)**
Prior publications	−.001	(.000)***
Order in issue	−.060	(.001)***
Number of references	.003	(.000)***
Number of pages	.025	(.000)***
Award	.066	(.026)**
Acknowledgees from top-tier business schools	−.034	(.003)***
Publication outlet		
IJRM	−1.339	(.019)***
JM	−.067	(.012)***
JMR	−.061	(.012)***
MKS	−.441	(.015)***
JCR		
Intercept	3.984	(.020)***
Inflation model (logit)		
Subject area		
Methodology		
General theory	−.613	(1.148)
Managerial/strategy	−1.280	(1.110)
Consumer behavior	.000	(.921)
Method type		
Analytical		
Conceptual	.320	(.962)
Empirical	−1.263	(.967)
Methodological	.044	(1.107)
Publication outlet		
IJRM	.832	(1.159)
JM	−.433	(1.098)
JMR	−.826	(1.149)
MKS	−.018	(1.211)
JCR		
Log Likelihood	−25572.84	
Likelihood ratio χ^2	12,969.54***	
N	1131	

Time fixed effects are included in the analysis but not displayed.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

Sixth, our framework suggests that social network utilization may compensate for the lack of other resources. It would therefore be interesting to examine if network utilization interacted with professional development and team size affects articles' impact. We added these to Eq. (3) and found that the interaction of time since PhD and network utilization and the interaction of team size and network utilization are positive and significant ($\beta = .001$ and $\beta = .015$ respectively, $p < .01$). The interaction of ERB membership and network utilization is negative and significant ($\beta = -.011$, $p < .01$). Adding these interactions increases model fit ($\chi^2_{(3)} = 172.53$, $p < .01$). These findings suggest that input from peers can reverse the negative or non-significant effects of time since PhD and team size on article impact. In this respect, large teams and teams with experienced authors in terms of years since PhD completion can increase article impact if they use their social network. However, for ERB members, such interactions are sub-optimal, suggesting that as far as research impact is concerned, teams with ERB members are better-off relying on the authors' knowledge.

Seventh, it is interesting to examine if acknowledgements to other commonly acknowledged actors or settings, such as participants of seminars, conferences, research assistants, and review teams, have a similar effect on article impact as acknowledgements to specific individuals. About 65% of the articles in our sample have acknowledged such actors. Adding this "other acknowledgements" variable to Eq. (3) reveals that, unlike acknowledgements to individuals, the effect of other acknowledgements is insignificant ($\beta = -.001$, $p > .1$). This is consistent with prior research suggesting that no type of acknowledgement is as beneficial as acknowledging specific individuals (Giles & Councill, 2004).

Table 5
Antecedents of social network utilization and article impact: Estimation with correlated error terms.

	DV: Social network utilization coefficients (SE)		DV: Article impact coefficients (SE)	
Social network utilization			.293	(.026)***
Women authors	.084	(.038)†	−.239	(.064)***
Authors from less economically advanced countries	.090	(.030)**	−.185	(.053)**
Years since PhD completion	−.002	(.002)	−.007	(.003)†
ERB membership	.008	(.020)	.041	(.036)
Number of authors	−.159	(.036)***	.316	(.061)***
Authors from top-tier business schools	−.053	(.027)†	.190	(.049)***
Reputation of PhD university	.127	(.048)**	−.047	(.085)
Prior publications	−.000	(.000)	−.000	(.001)
Order in issue	−.022	(.008)**	.030	(.012)*
Number of references	−.001	(.001)	.003	(.001)*
Number of pages	.004	(.005)	.067	(.009)***
Award			−.267	(.184)
Acknowledgees from top-tier business schools			−.031	(.026)
Subject area				
Methodology				
General theory	.045	(.086)	.390	(.143)**
Managerial/strategy	.034	(.075)	.222	(.126)†
Consumer behavior	−.027	(.073)	.264	(.121)*
Method type				
Analytical				
Conceptual	−.358	(.093)***	.799	(.153)***
Empirical	−.052	(.061)	.541	(.108)***
Methodological	−.174	(.088)*	.725	(.148)***
Publication outlet				
IJRM	−.587	(.081)***	−.355	(.133)**
JM	−.300	(.077)***	.399	(.130)**
JMR	−.320	(.070)***	.522	(.113)***
MKS	−.298	(.079)***	.014	(.146)
JCR				
	Wald $\chi^2 = 8593.87$***			
	$N = 1313$			
	Log Likelihood = −3205.97			

Time fixed effects are included in the analysis but not displayed.
* $p < .05$.
** $p < .01$.
*** $p < .001$.
† $p < .1$.

Finally, to assure that self-citations do not bias our results, we assembled self-citation data for a sub-sample of 125 articles, accounting for all the five studied journals. We find that the mean of self-citations for articles with women authors, $M = 2.37$ ($n = 40$), is similar to that of articles without women authors, $M = 2.29$ ($n = 85$), $t = .12$, $p > .1$; the mean of self-citations of articles with authors from less economically advanced countries, $M = 2.45$ ($n = 60$), is similar to that of articles without authors from less economically advanced countries, $M = 2.20$ ($n = 65$), $t = .41$, $p > .1$; and the mean of self-citations for articles with authors with an average of more than 10 years since their PhD completion, $M = 2.83$ ($n = 55$), is similar to that of articles with authors with an average of less than 10 years since PhD completion, $M = 1.92$ ($n = 71$), $t = .13$, $p > .1$. A single exception is that articles with authors who are ERB members self-cite more than non-ERB members ($M = 3.03$ ($n = 62$) and $M = 1.61$ ($n = 63$), $t = -2.39$, $p < .05$).

5. Discussion and implications

This study sheds light on a key resource that may help academic researchers enhance the impact of their publications: professional social networks. We proposed a framework of antecedents that help explain academic researchers' use of social networks. The framework captures relevant personal and professional experience, as well as conditions associated with the project at hand. Specifically, we studied an academic researcher's personal background (gender and country of origin economic advancement), professional development (time since PhD completion and ERB membership), and ad-hoc human capital in the particular research project (team size).

Our findings suggest that some researchers, such as women authors and authors from less economically advanced countries are more likely to utilize their professional social networks. Conversely, relatively large research teams are less likely to utilize their professional social networks. Our results also provide support (albeit weaker) for the notion that greater professional experience of the research team is associated with less social network utilization. Finally, we demonstrate that social network utilization, in turn, enhances the impact of research articles.

Table 6
Antecedents of social network utilization in academic research teams in marketing: Estimation results of nested models for Eqs. (1) and (2).

	DV: Social network utilization coefficients (SE)							
Women authors			.050	(.030)†	.058	(.030)†		
Authors from less economically advanced countries	.052	(.024)*			.050	(.024)*		
Years since PhD completion	.000	(.002)	−.000	(.002)				
ERB membership	−.037	(.018)*	−.030	(.018)				
Number of authors	−.136	(.032)***	−.130	(.032)***	−.155	(.028)***	−.126	(.026)***
Authors from top-tier business schools	.013	(.024)	.018	(.024)	.004	(.023)	.010	(.023)
Reputation of PhD university	.193	(.040)***	.193	(.040)***	.189	(.040)***	.189	(.040)***
Prior publications	.000	(.000)	.000	(.000)	−.000	(.000)	−.000	(.000)
Order in issue	.013	(.006)*	.014	(.006)*	.014	(.006)*	.015	(.006)*
Number of references	.001	(.000)*	.001	(.000)*	.001	(.000)*	.001	(.000)*
Number of pages	.006	(.004)	.006	(.004)	.006	(.004)	.006	(.004)
Publication outlet								
IJRM	−.216	(.072)**	−.200	(.072)**	−.214	(.072)**	−.229	(.071)***
JM	−.215	(.060)***	−.203	(.060)***	−.205	(.061)***	−.214	(.060)***
JMR	−.165	(.055)**	−.145	(.055)**	−.160	(.055)**	−.165	(.055)**
MKS	−.082	(.057)	−.050	(.058)	−.072	(.058)	−.080	(.056)
JCR								
Intercept	1.414	(.089)***	1.394	(.089)***	1.409	(.089)***	1.410	(.088)***
Inflation model (logit)								
Subject area								
Methodology								
General theory	−.658	(.243)**	−.652	(.242)**	−.652	(.243)**	−.662	(.242)**
Managerial/strategy	−.379	(.208)†	−.376	(.208)†	−.371	(.208)†	−.379	(.207)†
Consumer behavior	−.282	(.201)	−.290	(.201)	−.279	(.201)	−.293	(.200)
Method type								
Analytical								
Conceptual	.255	(.246)	.269	(.247)	.278	(.246)	.281	(.245)
Empirical	−.140	(.171)	−.135	(.172)	−.141	(.172)	−.138	(.171)
Methodological	.201	(.241)	.212	(.241)	.194	(.241)	.184	(.240)
Publication outlet								
IJRM	1.008	(.218)***	1.021	(.218)***	1.015	(.218)***	.997	(.217)***
JM	.197	(.219)	.185	(.218)	.194	(.219)	.188	(.218)
JMR	.202	(.203)	.203	(.203)	.205	(.203)	.214	(.202)
MKS	.229	(.200)	.206	(.200)	.197	(.201)	.219	(.200)
JCR								
Log Likelihood	−2651.7		−2649.49		−2651.96		−2663.72	
Likelihood ratio χ^2	108.55***		105.95***		108.02***		101.56***	
N	1316		1314		1316		1321	

Time fixed effects were included in the analysis but not displayed.
* $p < .05$.
** $p < .01$.
*** $p < .001$.
† $p < .1$.

5.1. Implications for scientometric research in marketing

This research contributes to prior scientometric work in marketing in two meaningful ways. First, it sheds light on a resource that can enhance the contribution of individual scholars and research teams to the performance of academic output. In particular, our study demonstrates the positive effect of social network utilization on an article's post publication impact. To the best of our knowledge, this is the first attempt to empirically test the value of academic social capital in the marketing literature context.

Second, the current research studies the tendency to utilize social networks by authors who are either experienced in facing adversity or are limited in their professional development—an unexplored area. In this respect our findings are in line with and substantively add to the work by Stremersch et al. (2007) that suggests that an article's impact depends on "who" its authors are.

5.2. Theoretical implications

5.2.1. Personal background

We find that research teams comprised of women or authors originating from less economically advanced countries leverage social networks to a greater extent than their counterparts. This finding contributes to the debate about the effects of adversity and constraints on individuals, teams, and organizations. Although it is often suggested that resources are critical drivers of performance outcomes (e.g. Gielens et al., 2008, Ynalvez & Shrum, 2011), a growing body of research argues that resource constraints, as well as other challenges and circumstances, may actually be valuable (e.g., Hoegl et al., 2008; Rosenzweig & Grinstein, 2016; Rosenzweig & Mazursky, 2014). Our findings support the latter stream of research.

5.2.2. Professional development

Our framework consisted of three sets of antecedents to academic social network utilization. While personal background and ad-hoc human capital largely showed significant results, the impact of professional development is weak. We find a marginally significant negative effect of ERB membership on social network utilization and inconsistent effects of years since PhD completion across our models. A possible reason is that experienced researchers are likely to have a larger professional network relative to less experienced researchers. This, in turn, may lead experienced researchers to use social networks more than predicted, perhaps not so much due to a need but rather due to an ease of accessibility. Alternatively, the weak or null effects may suggest that professional development is simply not as strong driver of resource utilization as personal background. Possibly, personal background, the effect of which is longitudinal and encompasses more than just one's professional setting, has a more inherent and persistent impact on individuals' behavior in terms of resource utilization. Scholars' professional development may only have a limited effect on resource-related behavior.

5.2.3. Team size

Our findings indicate that the activation of social ties is inversely related to the number of co-authors. Two implications arise. First, a small team of authors may view social networks as way to compensate for the limited human resources directly dedicated to the research project (Hartley, 2003). Second, many co-authors may feel they do not need to reach out to external resources for input as there already are enough "cooks in the kitchen." These findings are noteworthy because large teams of co-authors presumably have collectively more network ties to activate and benefit from, and yet seem less inclined to tap into these ties. Moreover, our results suggest that large teams can increase their article's impact by using their networks more.

5.2.4. Social network quality

One may argue that an article's impact is influenced not only by the size of the utilized network but also by its composition. Consistent with the idea that authors' main motivation for tapping into their social network is to obtain feedback and assistance is to improve the quality of their own work (Cronin & Shaw, 2007; Cronin et al., 2004), the quality of the utilized network, i.e., who the providers of the acknowledged input are, could be quite relevant. Indeed, one might expect some variability in the usefulness of social network inputs, as contributions from certain acknowledged scholars may be of greater value than the contributions from others (Cronin, McKenziev, Rubio, & Weaver-Wozniak, 1993).

We therefore conducted an additional analysis to test the return from acknowledgees of differing quality — in particular, examining whether networks comprised of researchers from top-tier business schools matter (Begh, Perry, & Hanke, 2006; Stremersch et al., 2007). To test this, we added an interaction effect of social network and network quality to Eq. (3) (see Table 7), finding that the positive effect of social network utilization increases with an increase in the number of acknowledgees from top-tier business schools ($\beta = .0036$, $p < .01$). Overall, this suggests that the higher the quality of the network utilized, the higher the article's impact.

5.3. Implications for marketing scholars and for the discipline's policy makers

Our findings have implications for marketing scholars and for the discipline's policy makers, such as journal editors and sponsoring organizations. For authors, our results reveal possible criteria for selecting co-authors who may be inclined to utilize social networks more extensively; thus adding an indirect resource to the project that is associated with greater chances of future impact. Research projects that generate publishable articles often entail hurdles involving resources or the execution of certain phases (such as technical or creative elements, or obtaining data). Given that social networks are a valuable resource, co-authors who extensively utilize their social network may enhance the impact of the research.

Furthermore, an article can be viewed as a new idea that requires market input to mold. Asking peers for suggestions and comments is very similar to conducting market research or test-marketing (Peter & Olson, 1983). Authors should treat their article as an emerging product that could benefit from suggestions for improvement, correction of flaws, and other input that can enhance its quality and subsequent marketability. Soliciting the council of peers who are, in effect, the target market, is likely to prove useful. Our finding that extensive use of social networks leads to greater article impact supports this conclusion.

Editors and scholars in charge of policy making, such as officers of professional organizations and journal advisory boards, may want to encourage authors to rely more heavily on colleagues' input and feedback well before submitting to a journal; editorial boards frequently suggest doing so to increase the likelihood of acceptance. We find, however, that soliciting pre-submission input also increases post-publication impact. Editors want their journals to be widely cited; thus this could be useful advice for them to dispense to prospective authors. Editors and policy makers may also want to facilitate the visibility of women scholars and scholars originating from less economically advanced countries, such as by encouraging workshop chairs at conferences to involve them or by holding conferences in locations associated with these groups, because their attendance may positively affect exposure and prompt considering them as collaborators.

The distinction between contributing to an article's quality and to its visibility/diffusion is a key issue in understanding the benefits of social networks. In the theoretical section, we offered a number of arguments in support of the view that access to social networks benefits an article mostly by enhancing its quality. Indeed, an analysis based on a subset of our sample finds that visibility/diffusion benefits from social capital are limited. We examined all the articles in our sample published in 1998 ($N = 48$), and identified those scholars acknowledged in them ($N = 133$). We then examined all the citations that these articles had received

Table 7
Antecedents of article impact in academic research teams in marketing including the moderating impact of quality of the social network utilized: Estimation results for Eqs. (1), and (3).

	DV: Article impact coefficients (SE)	
Social network utilization	.017	(.002)***
Women authors	−.115	(.007)***
Authors from less economically advanced countries	−.114	(.006)***
Years since PhD completion	−.001	(.000)**
ERB membership	.024	(.004)***
Number of authors	−.002	(.007)
Authors from top-tier business schools	.089	(.005)***
Reputation of PhD university	−.031	(.009)**
Prior publications	−.001	(.000)***
Order in issue	−.060	(.001)***
Number of references	.003	(.000)***
Number of pages	.026	(.001)***
Award	.063	(.026)*
Acknowledgees from top-tier business schools	−.059	(.005)***
Social network utilization × Acknowledgees from top-tier business schools	.003	(.000)***
Publication outlet		
IJRM	−1.342	(.019)***
JM	−.067	(.012)***
JMR	−.059	(.012)***
MKS	−.442	(.015)***
JCR		
Intercept	3.989	(.020)***
Inflation model (logit)		
Subject area		
Methodology		
General theory	−.613	(1.148)
Managerial/strategy	−1.280	(1.110)
Consumer behavior	.000	(.921)
Method type		
Analytical		
Conceptual	.320	(.962)
Empirical	−1.263	(.967)
Methodological	.044	(1.107)
Publication outlet		
IJRM	.832	(1.159)
JM	.433	(1.098)
JMR	−.826	(1.149)
MKS	−.018	(1.211)
JCR		
Log Likelihood	−25559.52	
Likelihood ratio χ^2	12996.17***	
N	1131	

Time fixed effects were included in the analysis but not displayed.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

in the span of twelve years (by August 2010), and specifically noted citations from the set of acknowledgees. If many of an article's citations appeared in articles written by acknowledgees, we might conclude that acknowledgees contribute meaningfully to visibility and diffusion. We find, however, that only 4.7% of the articles' total number of citations ($N = 1167$) were from acknowledgees. This finding corresponds with prior scientometrics research that highlights the low correlation between acknowledgments and future citations (Cronin et al., 1993). It suggests that authors primarily acknowledge peers for input they have already provided rather than for future "marketing" of the paper. This finding also suggests that acknowledgees' contribution to the visibility and diffusion of an article is limited. The open question, then, is what scholars can do to promote not only quality improvement but also post publication dissemination. In our case, authors presenting at seminars and conferences are typically expected to present work in progress rather than published work. This expectation is due to the audience's desire to hear the cutting edge research and feel that their suggestions will matter, that is, affect the final version of the article. This social conduct, however, limits authors' ability to diffuse their work post publication.

5.4. Implications for practitioners

Whereas the results of this study offer implications primarily for scholars and the discipline's policy makers, our findings might have relevance for practitioners.

First, while we test our predictions in an academic context and as such any attempt to generalize beyond this setting should be done with caution, our findings regarding the positive effect of social network utilization on performance may be generalizable to non-academic settings. Human capital is a critical resource for work teams of, for example, R&D projects. In this respect, and given their focus on generating research output, R&D teams may behave in a similar manner to academic teams. Thus, when scarce, R&D team members may be able to compensate for human capital by increasing the activation of their appropriate professional social networks. As such, managers can encourage work teams – and R&D teams in particular – to increase their use of relevant social networks by funding participation in conferences and conventions for networking purposes or by creating communication channels with academia or prominent people in related (non-competitive) industries; thus increasing the potential performance of their teams.

Second, as resource shortages and other adversities characterize many projects and organizations, managers can try to identify employees that are potentially more experienced with handling such situations. Specifically, personal background characteristics such as gender and country of origin may be useful in the identification process.

Third, an area of growing importance in which networks can play a significant role is collaborative brainstorming, promoting, for instance, new innovative ideas or problem solving (Mason & Watts, 2012; Stephen, Zubcsek, & Goldenberg, 2016). Recent research suggests that excessive connectivity between brainstorming participants may hinder innovativeness (Stephen et al., 2016) and that different brainstorming goals may require different network structures (Mason & Watts, 2012). Our findings may therefore be useful for organizations promoting collaborative brainstorming, because they highlight key antecedents that drive connectivity, and participants that are more or less likely to connect to other participants.

5.5. Limitations and future research directions

Our data collection efforts and analyses focused on specific issues and we attempted to control for as many aspects as possible. That said, our study has several limitations that could benefit from further research. First, we focus on both individual-level and team-level characteristics that may affect social network utilization, however, we measure social network utilization at the article (team) level. Whereas examining individuals on the team in relation with article performance seems logical and is supported by research on R&D teams (e.g., Griffin & Hauser, 1996), one could argue that the interplay between individual and team levels is not necessarily straightforward. For example, when multiple scholars co-author an article, it is difficult to determine who contributes what and which contribution is most impactful. For instance, one author may extensively utilize her social network, but it is her co-author who contributes to the quality of the research even more due to her outstanding writing and analytical abilities. Future research could expand the individual-level test that we offer here, by considering, for example, the effect of social network utilization by individual scholars on corresponding individual achievements, such as personal awards, a researcher's H-index, or appearance in research productivity lists (such as the one compiled by the American Marketing Association).

Second, the three sets of antecedents of social network utilization we study reflect stages in the journey of academic researchers but are likely not exhaustive. Future research can identify other factors that may impact social network utilization in academic settings, studying for example, other personal background characteristics (e.g., industry background) or project specific situations (e.g., geographical distance between co-authors). It will also be valuable to generalize our findings to disciplines other than marketing, or to other forms of research endeavors, such as R&D teams, measuring professional networking and technological impact using patent citation data.

Third, in the context of professional development, academic researchers' prior publications may be viewed as a relevant antecedent to social network utilization. However, researchers differ in their publication strategies, and this drives differences in scholars' careers and experiences (Tchetchik, Grinstein, Manes, Shapira, & Durst, 2015). For instance, publishing only in top-tier marketing journals may have different consequences than a similar or even higher number of publications in mid- and lower-tier marketing journals; publishing in generalist journals may have different consequences than publishing in specialized journals; and publishing mostly within the marketing discipline may have different consequences than publishing in other disciplines as well. Because of these complexities and the fact that we do not explicitly examine the various publication strategies, we control for prior publications but do not treat them as professional development predictors of social network utilization. Future research can examine the effect of different publishing strategies on social network utilization.

Fourth, authors possess private information about the quality of their research, and may solicit input from others if they have a high opinion of its quality. These aspects may suggest potential endogeneity bias (Manchanda, Rossi, & Chintagunta, 2004), where authors utilize their social network only for their highly impactful papers. Our model does not directly control for this potential endogeneity and future research may consider examining this matter in depth, applying, for example, surveys and interviews.

Future research could also benefit from a more detailed analysis of the interaction between citation and acknowledgment patterns. It might prove useful, for example, to identify acknowledgees who repeatedly help colleagues and to compare their contributions to an article's impact to those of other acknowledgees, and also examine citation and social network utilization patterns across different marketing domains or across different management disciplines.

Appendix A

We address selection-bias by introducing endogenous selection Poisson analyses (Miranda & Rabe-Hesketh, 2006) in addition to testing our hypotheses using zero-inflated Poisson regression analyses. We can account for this type of a selection mechanism in

that we know which article involved an author experienced with adversity, and thus may have had to cross a higher bar to be published.

We estimate a pair of equations. The main equation is a Poisson model:

$$\Pr(y_i;\mu_i) = \frac{\mu_i^{y_i}\exp(-\mu_i)}{y_i!}$$
$$\ln(\mu_i) = \mathbf{x}_i'\boldsymbol{\beta} + \theta S_i + \varepsilon_i.$$

where S_i is the switching variable: $S_i = 1$ indicates the presence of at least one author experienced with adversity. The error term ε_i is not present in the usual Poisson model: here, it allows for overdispersion and for correlation with the switching equation.

The switching equation is:

$$S_i^* = \mathbf{z}_i\boldsymbol{\gamma} + \lambda\varepsilon_i + \zeta_i$$
$$S_i = \begin{cases} 1 & \text{if } S_i^* > 0 \\ 0 & \text{otherwise} \end{cases}$$

where $\zeta_i \sim N(0, 1)$ are independent of ε_i, and λ is a parameter that determines the degree of correlation between the Poisson equation and the switching equation.

We use a generalized linear latent and mixed models (gllamm) procedure to fit the selection model, with a Poisson distribution for the outcome variable, a log link function, and 6 quadrature points (Miranda & Rabe-Hesketh, 2006). We report the results in Tables A1 and A2.

Table A1
Antecedents of social network utilization in academic research teams in marketing: Two-step sample-selection Poisson model

	DV: Social network utilization coefficients (SE)		Selection model (women authors and authors from less economically advanced countries) coefficients (SE)	
Women authors	.205	(.084)*		
Authors from less economically advanced countries	.186	(.041)***		
Years since PhD completion	−.009	(.003)*		
ERB membership	−.009	(.034)		
Number of authors	−.179	(.064)**	.178	(.440)***
Authors from top-tier business schools	−.027	(.049)		
Reputation of PhD university	.288	(.105)**		
Prior publications	−.000	(.001)		
Order in issue	−.003	(.017)	.017	(.014)
Number of references	.003	(.001)**	−.001	(.001)
Number of pages	0.28	(.006)***	.016	(.009)
Subject area				
Methodology				
General theory	.637	(.142)***	.240	(.152)
Managerial/strategy	.424	(.138)**	.163	(.133)
Consumer behavior	.336	(.134)*	.391	(.128)**
Method type				
Analytical				
Conceptual	−.320	(.190)†	.162	(.162)
Empirical	.286	(.105)**	.156	(.108)
Methodological	.252	(.233)	.301	(.151)*
Publication outlet				
IJRM	−.547	(147)***	−.152	(.135)
JM	−.454	(.119)***	−.312	(.128)*
JMR	−.288	(.130)†	−.382	(.120)***
JCR				
MKS	−.314	(.160)*	−.680	(.134)***
	Wald $\chi^2 = 484.90$***			
	$N = 1329$			
	Log Likelihood = −3475.58			

Time fixed effects are included in the analysis but not displayed.
* $p < .05$.
** $p < .01$.
*** $p < .001$.
† $p < .1$.

Table A2
Antecedents of article impact in academic research teams in marketing: Two-step sample-selection Poisson model (SE)

	DV: Article impact coefficients (SE)		Selection model (women authors and authors from less economically advanced countries) coefficients (SE)	
Social network utilization	.0054	(.003)†		
Women authors	−.1973	(.011)***		
Authors from less economically advanced countries	−2142	(.011)***		
Time since PhD completion	−.0014	(.000)*		
ERB membership	.0002	(.005)		
Number of authors	−.0680	(.013)***	.1712	(.044)***
Authors from top-tier business schools	.1641	(.009)***		
Reputation of PhD university	.1281	(.012)***		
Prior publications	−.0013	(.000)***		
Order in issue	−.0508	(.002)***	.0157	(.014)
Number of references	.0023	(.000)***	−.0016	(.001)
Number of pages	.0434	(.001)***	.0175	(.009)†
Award	−.0199	(.029)	.2603	(.152)†
Acknowledgees from top-tier business schools	.0010	(.005)		
Subject area				
Methodology				
General theory	.1825	(.024)***	.2603	(.152)†
Managerial/strategy	.1063	(.021)***	.1770	(.133)
Consumer behavior	.0687	(.022)**	.4059	(.127)**
Method type				
Analytical				
Conceptual	−.0245	(.024)	.1590	(.162)
Empirical	.2431	(.023)***	.1692	(.108)
Methodological	.1787	(.028)***	.3242	(.151)*
Publication outlet				
IJRM	−1.3761	(.038)***	−.160	(.135)
JM	−.2201	(.016)***	−.3373	(.128)**
JMR	−.0778	(.018)***	−.3720	(.120)**
MKS	−.5170	(.025)***	−.6955	(.134)***
JCR				
	Wald $\chi^2 = 8984.34^{***}$ $N = 1329$ Log Likelihood = −6804.30			

Time fixed effects are included in the analysis but not displayed.
* $p < .05$.
** $p < .01$.
*** $p < .001$.
† $p < .1$.

References

Amabile, T., Regina, C., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of Management Journal*, *39*(October), 1154–1184.

Andrews, J., & Smith, D. (1996). In search of the marketing imagination: Factors affecting the creativity of marketing programs for mature products. *Journal of Marketing Research*, *33*(2), 174–187.

Baumgartner, H., & Pieters, R. (2003). The structural influence of marketing journals: A citation analysis of the discipline and its subareas over time. *Journal of Marketing*, *67*(April), 123–139.

Ben-Ari, E. (1987). On acknowledgements in ethnographies. *Journal of Anthropological Research*, *43*(1), 63–84.

Bergh, D. D., Perry, J., & Hanke, R. (2006). Some predictors of *SMJ* article impact. *Strategic Management Journal*, *27*(1), 81–100.

Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.

Browning, C., Leventhal, T., & Brooks-Gunn, J. (2005). Sexual initiation in early adolescence: The nexus of parental and community control. *American Sociological Review*, *70*(5), 758–778.

Chase-Dunn, C., & Grimes, P. (1995). World-system analysis. *Annual Review of Sociology*, *21*, 387–417.

Cote, J., Leong, S. M., & Cote, J. (1991). Assessing the influence of Journal of Consumer Research: A citation analysis. *Journal of Consumer Research*, *18*(December), 402–410.

Cronin, B. (1995). *The scholar's courtesy: The role of acknowledgements in the primary communication process*. London and Los Angeles: Taylor Graham.

Cronin, B. (2001). Hyperauthorship: A postmodern perversion or evidence of a structural shift in scholarly communication practices? *Journal of the American Society for Information Science and Technology*, *52*, 558–569.

Cronin, B., & Shaw, D. (2007). Peers and spheres of influence: Situating Rob Kling? *The Information Society*, *23*, 221–233.

Cronin, B., McKenziev, G., Rubio, L., & Weaver-Wozniak, S. (1993). Accounting for influence: Acknowledgments in contemporary sociology. *Journal of the American Society for Information Science and Technology*, *44*(August), 406–412.

Cronin, B., Shaw, D., & La Barre, K. (2004). Visible, less visible, and invisible work: Patterns of collaboration in 20th century chemistry. *Journal of the American Society for Information Science and Technology*, *55*(January), 160–168.

Cronin, J. J., Jr, & Taylor, S. A. (1992). Measuring service quality: a reexamination and extension. *The Journal of Marketing*, *56*(3), 55–68.

Eaton, J., Ward, J., Kumar, A., & Reingen, P. (1999). Structural analysis of co-author relationships and author productivity in selected outlets for consumer behavior research. *Journal of Consumer Psychology*, *8*(1), 39–59.

Frederick, S., & Lowenstein, G. (1999). Hedonic adaptation. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundation of hedonic psychology* (pp. 302–329). New York: Russell Sage Foundation.

Ganesan, S. (1994). Determinants of long-term orientation in buyer-seller relationships. *The Journal of Marketing*, *58*(2), 1–19.
Friedkin, N. (1980). A test of structural features of Granovetter's strength of weak ties theory. *Social Networks*, *2*, 411–422.
Gargiulo, M. (1993). Two-step leverage: Managing constraints in organizational politics. *Administrative Science Quarterly*, *38*(March), 1–19.
Gibbert, M., Hoegl, M., & Vilikangas, L. (2007). Praise of resource constraints. *MIT Sloan Management Review*, *48*(3), 15–17.
Gielens, K., Van de Gucht, L. M., Steenkamp, J. -B. E. M., & Dekimpe, M. G. (2008). Dancing with a giant: The effect of Wal-Mart's entry into the United Kingdom on the performance of European retailers. *Journal of Marketing Research*, *XLV*(October), 519–534.
Giles, C. L., & Councill, I. G. (2004). Who gets acknowledged: Measuring scientific contributions through automatic acknowledgement indexing. *Proceedings of the National Academy of Sciences of the United States of America*, *101*(51), 17599–17604.
Ginther, D. K., & Kahn, S. (2006). *Does science promote women? Evidence from academia 1973–2001. No. w12691.* National Bureau of Economic Research.
Glass, J. (1990). The impact of occupational segregation on working conditions. *Social Forces*, *68*, 779–796.
Goldenberg, J., Libai, B., Muller, E., & Stremersch, S. (2010). The evolving social network of marketing scholars. *Marketing Science*, *29*(May), 561–567.
Golder, P. N. (2000). Historical method in marketing research with new evidence on long-term market share stability. *Journal of Marketing Research*, *37*(May), 156–172.
Goldman, A. (1979). Publishing activity in marketing as an indicator of its structure and disciplinary boundaries. *Journal of Marketing Research*, *16*(November), 485–494.
Goldman, A., & Grinstein, A. (2010). Stages in the development of market orientation research: A longitudinal assessment. *European Journal of Marketing*, *44*(9/10), 1384–1409.
Granovetter, M. (1995). The Economic Sociology of Firms and Entrepreneurs. In A. Portes (Ed.), *The Economic Sociology of Immigration: Essays on Networks, Ethnicity, and Entrepreneurship* (pp. 128–165). New York: Russell Sage Foundation.
Griffin, A., & Hauser, J. R. (1996). Integrating R&D and marketing: A review and analysis of the literature. *Journal of Product Innovation Management*, *13*(3), 191–215.
Hadi, A. (1992). Identifying multiple outliers in multivariate data. *Journal of the Royal Statistical Society*, *54*, 761–771.
Hansen, M. T. (1999). The search transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Administrative Science Quarterly*, *44*, 82–111.
Hartley, J. (2003). Single authors are not alone: Colleagues often help. *Journal of Scholarly Publishing*, *34*(January), 108–113.
Hoegl, M., & Gibbert, M. (2007). *Are Material Resources Really Drivers of Innovation Team Performance?* Paris: Paper presented at the European Academy of Management Conference, 16–19 May.
Hoegl, M., Gibbert, M., & Mazursky, D. (2008). Financial constraints in innovation projects: When is less more? *Research Policy*, *37*(8), 1382–1391.
Hoffman, D. L., & Novak, T. P. (1996). Marketing in hypermedia computer-mediated environments: Conceptual foundations. *The Journal of Marketing*, *60*(3), 50–68.
Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations.* Thousand Oaks, CA: Sage Publications.
Howell, D. C. (2008). *Fundamental statistics for the behavioral sciences* (6th ed.). Belmont, CA: Thomson Wadsworth.
Hyytinen, A., & Toivanen, O. (2005). Do financial constraints hold back innovation and growth? Evidence on the role of public policy. *Research Policy*, *34*, 1385–1403.
Ibarra, H. (1992). Homophily and differential returns: Sex differences in network structure and access in an advertising firm. *Administrative Science Quarterly*, *37*(September), 422–447.
Jackson, M. (2006). Personality traits and occupational attainment. *European Sociological Review*, *22*(2), 187–199.
Jeppesen, L. B., & Lakhani, K. R. (2010). Marginality and problem-solving effectiveness in broadcast search. *Organization Science*, *21*(5), 1016–1033.
Kanter, R. (1977). *Men and women of the corporation.* New York, NY: Basic Books Inc.
Khurana, A., & Rosenthal, S. R. (1998). Towards holistic "front ends" in new product development. *Journal of Product Innovation Management*, *15*(1), 57–74.
Laband, D., & Tollison, R. (2000). Intellectual collaboration. *Journal of Political Economy*, *108*(June), 632–662.
Levels, M., Dronkers, J., & Kraaykamp, G. (2008). Immigrant children's educational achievement in Western countries: Origin, destination, and community effects on mathematical performance. *American Sociological Review*, *73*(October), 835–853.
Lin, N. (1982). Social resources and instrumental action. In P. Marsden, & N. Lin (Eds.), *Social structure and network analysis* (pp. 131–145). Beverly Hills, CA: Sage.
Lutz, C. (1990). The erasure of women's writing in sociocultural anthropology. *American Ethnologist*, *17*(November), 611–627.
Manchanda, P., Rossi, P., & Chintagunta, P. (2004). Response modeling with non-random marketing mix variables. *Journal of Marketing Research*, *41*(November), 467–478.
Mason, W. A., & Watts, D. J. (2012). Collaborative learning in networks. *Proceedings of the National Academy of Sciences*, *109*(3), 764–769.
Mela, C. F., Roos, J., & Deng, Y. (2013). A keyword history of marketing science. *Marketing Science*, *32*(1), 8–18.
Miranda, A., & Rabe-Hesketh, S. (2006). Maximum likelihood estimation of endogenous switching and sample selection models for binary, ordinal, and count variables. *Stata Journal*, *6*, 285–308.
Mitra, D., & Golder, P. N. (2008). Does Academic research help or hurt MBA programs? *Journal of Marketing*, *72*(September), 31–49.
Moreau, C. P., & Dahl, D. (2005). Designing the solution: The impact of constraints on consumers' creativity. *Journal of Consumer Research*, *31*(June), 13–22.
Morgeson, F., & Nahrgang, J. (2008). Same as it ever was: Recognizing stability in the business week rankings. *The Academy of Management Learning and Education*, *7*(1), 26–41.
Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital and the organizational advantage. *Academy of Management Review*, *23*(April), 242–266.
Nielsen, L. (2011). Classifications of countries based on their level of development: How it is done and how it could be done. *IMF Working Papers, WP/11/31, February* (pp. 1–45).
Palmatier, R. W. (2008). Interfirm relational drivers of customer value. *Journal of Marketing*, *72*(July), 76–89.
Peter, P. J., & Olson, J. C. (1983). Is science marketing? *Journal of Marketing*, *47*(Autumn), 111–125.
Portes, A. (1995). Economic sociology and the sociology of immigration: A conceptual overview. In A. Portes (Ed.), *The economic sociology of immigration: Essays on networks, ethnicity, and entrepreneurship* (pp. 1–41). New York: Russell Sage Foundation.
Roodman, D. (2011). Estimating fully observed recursive mixed-process models with CMP. *Stata Journal*, *11*(2), 159–206.
Rosenzweig, S., & Grinstein, A. (2016). How resource challenges can improve firm innovation performance: Identifying coping strategies. *Creativity and Innovation Management*, 1–19.
Rosenzweig, S., & Mazursky, D. (2014). Constraints of internally and externally derived knowledge and the innovativeness of technological output: The case of the United States. *Journal of Product Innovation Management*, *31*(2), 231–246.
Sawyer, A. G., Laran, J., & Xu, J. (2008). The readability of marketing journals: Are award-winning articles better written? *Journal of Marketing*, *72*(January), 108–117.
Seggie, S. G., & Griffith, D. A. (2009). What does it take to get promoted in marketing academia? Understanding exceptional publication productivity in the leading marketing journals. *Journal of Marketing*, *73*(January), 122–132.
Sethi, R., Smith, D. C., & Park, C. W. (2001). Cross-functional product development teams, creativity, and the innovativeness of new consumer product. *Journal of Marketing Research*, *38*(February), 73–85.
Shipilov, A. V. (2006). Network strategies and performance of Canadian investment banks. *Academy of Management Journal*, *49*(3), 590–604.
Stephen, A., & Toubia, O. (2010). Deriving value from social commerce networks. *Journal of Marketing Research*, *47*(2), 215–228.
Stephen, A., Zubcsek, P. P., & Goldenberg, J. (2016). Lower connectivity is better: The effects of network structure on redundancy of ideas and customer innovativeness in interdependent ideation tasks. *Journal of Marketing Research* (in press).
Stremersch, S., & Verhoef, P. (2005). Globalization of authorship in the marketing discipline: Does it help or hinder the field? *Marketing Science*, *24*(Fall), 585–594.
Stremersch, S., Camacho, N., Vanneste, S., & Verniers, I. (2015). Unraveling scientific impact: Citation types in marketing journals. *International Journal of Research in Marketing*, *32*, 64–77.
Stremersch, S., Verniers, I., & Verhoef, P. (2007). The quest for citations: Drivers of article's impact. *Journal of Marketing*, *71*(July), 171–193.
Tchetchik, A., Grinstein, A., Manes, E., Shapira, D., & Durst, R. (2015). From research to practice: Which research strategy contributes more to clinical excellence? Comparing high-volume versus high-quality biomedical research. *PloS One*, *10*(6), e0129259.
Tellis, G. J., Chandy, R., & Ackerman, D. (1999). In search of diversity: The record of major marketing journals. *Journal of Marketing Research*, *36*(February), 120–131.

Tharenou, P. (1999). Gender differences in advancing to the top. *International Journal of Management Reviews*, *1*(June), 111–132.
Tiedemann, J. (2000). Parents' gender stereotypes and teachers' beliefs as predictors of children's concept of their mathematical ability in elementary school. *Journal of Educational Psychology*, *92*(March), 144–151.
Toren, N. (2000). *Hurdles in the halls of science: the Israeli case.* Lanham, MD: Lexington Books.
Van den Bulte, C., & Wuyts, S. (2007). *Social networks and marketing.* Cambridge, MA: Marketing Science Institute.
Van Rossem, R. (1996). The world system paradigm as general theory of development: A cross-national test. *American Sociological Review*, *61*(June), 508–527.
Vargo, S., & Lusch, R. (2004). Evolving to a new dominant logic for marketing. *Journal of Marketing*, *68*(1), 1–17.
Wallerstein, I. (1974). *The modern world-system.* New York, NY: Academic Press.
Wilkie, W. L., & Moore, E. S. (2003). Scholarly research in marketing: Exploring the "4 eras" of thought development. *Journal of Public Policy and Marketing*, *22*(2), 116–146.
Winterich, K. P., Mittal, V., & Ross, W. T., Jr. (2009). Donation behavior toward in-groups and out-groups: The role of gender and moral identity. *Journal of Consumer Research*, *36*(2), 199–214.
Ynalvez, M. A., & Shrum, W. M. (2011). Professional networks, scientific collaboration, and publication productivity in resource-constrained research institutions in a developing country. *Research Policy*, *40*, 204–216.