

A scientometric analysis of social media research (2004–2011)

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Abstract To better understand the rapidly growing social media research domain, this study presents the findings of a scientometric analysis of the corresponding literature. We conducted a research productivity analysis and citation analysis of individuals, institutions, and countries based on 610 peer-reviewed social media articles published in journals and conference proceedings between October 2004 and December 2011. Results indicate that research productivity is exploding and that several leading authors, institutions, countries, and a small set of foundational papers have emerged. Based on the results—indicating that the social media domain displays limited diversity and is still heavily influenced by practitioners—the paper raises two fundamental challenges facing the social media domain and its future advancement, namely the lack of academic maturity and the Matthew Effect.

Keywords Social media · Social network sites · Online social networks · Scientometric analysis · Citation analysis · Bibliometrics · Research productivity

Introduction

The accelerated entry into the social space by companies, governments, and academia has spawned a plethora of new terms—including social media, online social network, social network(ing) site—that did not exist a few decades ago, as is evident from the strong

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representation of the term social media in the contemporary lexicon of academia, business and government.

According to ProQuest Direct,¹ the first instances of the term “social media” or “social medium” appeared in 1941.² The term “online social network(s)” first appeared in 2006 (Tang and Yang 2006), “social network site(s)” first appeared in 2004 (Donath and boyd 2004), and “social networking site(s)” appeared in three articles in 2006 (Beer 2006; Hawkins and Oblinger 2006; Raskin 2006). A search for scholarship with these keywords in either the manuscript’s title or its abstract revealed a growing body of literature, and a clear prevalence of the terms social medium/social media among these studies (see Fig. 1).

Consequently, the explosion of social media scholarship in the last decade warrants an exploration of its intellectual core through an analysis of the full and cumulative body of knowledge that constitute the field rather than individual papers in isolation (Cocosila et al. 2011; Holsapple 2008). Scientometric approaches and techniques are particularly useful for providing an inclusive perspective on the growth of the collective scholarly knowledge and major knowledge producers to the social media realm, as well as the risk of publication and citation biases that may impede the theoretical advancement of the social media research domain.

Hence, a number of motivations underpin this scientometric analysis. First, our main aim is to understand the identity, structure, and dynamics of the social media research domain through an assessment of its institutional performance, reputational structure, and knowledge growth (Leydesdorff 1989; Leydesdorff and Besselaar 1997; Serenko and Bontis 2009).

Second, using scientometric techniques for assessing an exploding scientific domain—such as social media—allows us to pause and engage in a retrospective analysis of the domain in order to answer a range of important questions pertaining to its intellectual core and its contributors (Holsapple 2008) as will be further explored in the next section.

Third, an analysis of the bibliometric (i.e., citation) indicators in addition to other scientometric techniques can be used as a representation of how authors perceive their cognitive environment (Small and Griffith 1974) and consequently of the overall cognitive structure of the social media domain (Amsterdamska and Leydesdorff 1989) as well as the popularity of particular authors and publications in the domain (Leydesdorff 1989). Not only can these quantitative metrics lead to a better understanding of the current state and identity of the social media domain, they also offer insights for possible improvements in its operating mechanism (Leydesdorff 1989). Establishing the identity and providing recommendations can impact the future directions of researchers in the domain, enhance the domain’s overall image amongst external stakeholders—such as grant agencies, university administrations, tenure and promotion committees, as well as students and practitioners—and result in a (re-)examination of its core values and assumptions to ensure its scientific advancement (Serenko and Bontis 2004).

In this paper, we present the first comprehensive investigation of the social media literature through a scientometric analysis of all refereed, full-text, and archived journal and conference proceeding articles—a total of 610 papers ($N = 610$)—retrieved by searching for common social media-related terms and published since October 2004 until December, 2011. In October 2004, Donath and boyd (2004) published their paper on social

¹ ProQuest Direct is a collection of all 98 databases, including ABI/Inform, and deals with seven subject domains, including Business.

² This early use of the term was due to the context of the cited study, i.e. Trow (1941) referred to the classroom as a ‘social medium’.

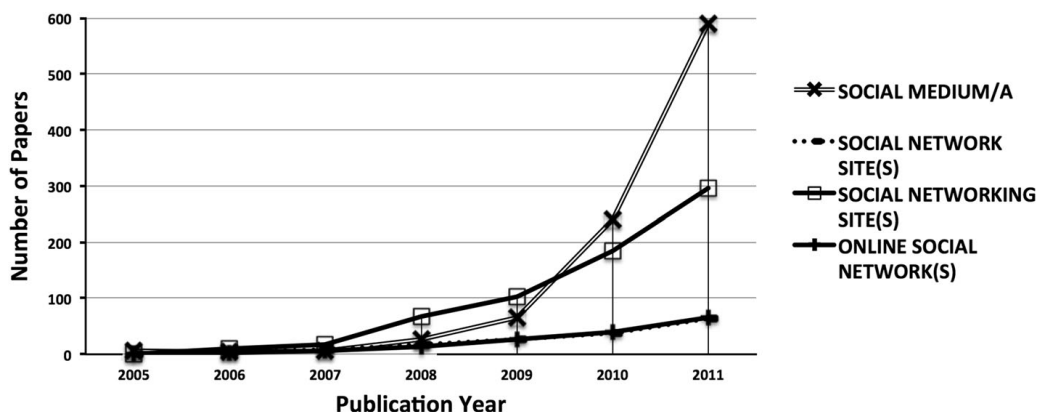


Fig. 1 Published social media articles by year, since 2005 (source: ProQuest Direct)

network sites, marking the birth of a novel field of research. Hence, October 2004 was established as the optimal starting point for this analysis.

Whereas scientometric studies generally concentrate on a narrow subset of journals, the majority of studies devoted to social media—given the embryonic and interdisciplinary nature of this research domain—have thus far been published in a wide range of journals and a select group of conference proceedings. Consequently, a focus on a specific subset of journals would be incomplete and myopic. Hence, for the purpose of investigating this novel, emerging, and interdisciplinary scientific domain, we analyzed the entire body of knowledge from a variety of outlets, including journal and full-text conference articles. As such, the scientometric study presented here—through an aggregate analysis of all individual works on social media published in the past seven years—assesses the domain’s overall state, identity, and intellectual core.

The remainder of this paper is organized as follows: we begin with a literature review and description of our research methodology. Based on the meta-review and scientometric analysis, we reflect on the research productivity and citation indices of individuals, institutions, and countries in the domain of social media. Our findings indicate that research productivity is exploding and that several leading authors, institutions, countries, as well as a small set of foundational papers have emerged. Based on the findings, many implications emerged that improve our understanding of the intellectual core of the social media domain.

Literature review

Given that the quantitative analysis of scientific communications, citation impacts, and productivity rankings of individual researchers, publications, and institutions is particularly relevant for scientific domains that are in an embryonic stage (Serenko et al. 2010), this study aims to provide a comprehensive analysis of the social media domain through combining three levels of analysis, namely macro (i.e., countries), meso (i.e., institutions), and micro (i.e., individual authors and publications). As such, this study aims to provide broader, more reliable insights into this domain than can be achieved by addressing one level of analysis alone.

Social media is a relatively new and dynamic field of research dealing with the design and use of social media technologies by individuals and in organizations. In general, social

media are Internet-based tools that allow users to easily create, edit, and/or link to content or to other creators of content (Kaplan and Haenlein 2010). Popular social media technologies include blogs, microblogs, wikis, social networking sites, and video or other content sharing sites and communities.

Research on social media to date has largely focused on individual use of social media by youth and college students as driven by socio-psychological theories concerned with topics of motivations, gratifications, and self-presentation. Studies analyzing social media use by organizations have focused primarily on social media as a vehicle for engaging with, maintaining, and managing relationships with external stakeholders, most predominantly customers. More recently, interest in Enterprise Social Media (ESM) has emerged focusing on the role of social media in organizations; however, the majority of work on ESM has focused on specific technologies, providing specific descriptions of how people use ESM, or on the implications of ESM for understanding only a limited set of organizational outcomes (Leonardi et al. 2013).

Our study, based on the abovementioned aim of offering a comprehensive view of the social media research domain, targets a single research domain, yet, without restricting itself to a specific subset of journals given the nascent and interdisciplinary nature of the domain. In this way, our study surpasses a previous published study of social media-based systems (SMS) (Khan, 2013) where the author only uses a substantially smaller volume of articles published in computer and information systems journals included in the Web of Science (WoS) database. Hence, not only does the present study cast a wider net in terms of the outlets and disciplinary origins of contributions to the social media domain, but it also contributes to a better understanding of the social media domain in three ways.

First, it has been widely acknowledged that the majority of contributions to the social media domain have not emerged from the information systems (IS) field, but rather from media and communication studies (c.f., Silver 2004; Walther and Jang 2012). Furthermore, like the Internet Studies meta-field, social media is a highly multi-disciplinary domain of research (Rall 2010; Silver 2004). Hence, a focus on the IS field alone offers a single viewpoint of the social media domain and provides a highly skewed perspective of its intellectual core and contributors. Rather, analyzing all social media related peer-reviewed papers available in the ProQuest database—regardless of disciplinary origin—offers a much more complete retrospective view of the social media domain.

Second, social media scholars have substantial amounts of their research in anthologies and conference proceedings and therewith have bypassed the typically slower-to-publish journals as a way of rapidly distributing scholarship dealing with a dynamic object of study, namely social media (Silver 2004). Therefore, a focus on the WoS database—which only includes ISI indexed journal articles, i.e., a minor subset of peer-reviewed journal articles published to date—has limited generalizability for an embryonic and hyper-fluid domain like social media.

Third, although the keywords used by Khan (2013) and those applied in this study are similar, there is one important difference in the way the datasets were filtered. Whereas our approach included a manual filtering of all articles based on their relevance to the social media domain—which is further explained in the methods section below—Khan's (2013) article did not apply such a filtering process, resulting in the inclusion of IS articles that employ social network analytical techniques to understand dimensions of IS adoption, IS development, teamwork, and firm competitiveness that make no references to social media. This is evident from Khan's (2013) finding that out of the four main research streams on Social Media-based Systems (SMS), the first stream deals with organizational aspects of SMS. As reported by [Masked Source], in their qualitative literature review of

organizational social media, between 2004 and 2011 only 19 studies were published that deal with the organizational use of social media. Hence, the over-representation of organizational studies of SMS in Khan's (2013) paper is likely due to the inclusion of social network analysis as a keyword.

In this study, we use scientometric techniques for assessing the social media scholarship reviewed, allowing us to pause and engage in a retrospective analysis of the domain in order to address five key research questions pertaining to two sets of analyses, namely a research productivity analysis through scientometric techniques and a research impact analysis through bibliometric (i.e., citation analysis) procedures.

First, the research productivity of individual authors, institutions, and countries has been a dominant focus of scientometric analyses (Manning and Barrette 2005), with individual research productivity being the most frequently addressed topic (Bapna and Marsden 2002; Wright and Cohn 1996). Individual productivity scores can help to identify a list of key social media contributors, whereas institutional and country productivity rankings may inform the funding decisions of grant agencies (Erkut 2002). Hence, three research productivity questions emerge:

- (1) *What is the individual productivity ranking of social media authors?*
- (2) *What is the institutional productivity ranking?*
- (3) *What is the country productivity ranking?*

Second, the research impact of individual authors and publications through an analysis of citations is another important tool for assessing the cognitive structure of a domain. It helps to determine the influence, hence, importance that individual authors and publications have had on the identity and development of the domain to date and their perceived popularity (Amsterdamska and Leydesdorff 1989; Leydesdorff 1989; Small and Griffith 1974). Hence, two related research questions regarding research impact emerge:

- (4) *What are the most frequently cited social media publications?*
- (5) *Who are the most frequently cited social media authors?*

Methodology

In order to obtain empirical evidence for answering the abovementioned research questions, we analyzed all social media articles—as deemed relevant according to the search terms described in the next section—published in all peer-reviewed, refereed journals and conference proceedings over a period of over seven years (October 2004 until December 2011) as available through all 98 ProQuest databases. ProQuest was selected because of its extensive indexing of documents—beyond journal articles only—related to Business, Multidisciplinary Social Sciences, Performing Arts, Literature, Film Studies, Theatre, Human Development and Family Studies; whereas other bibliographic databases (e.g., Scopus and Web of Science) are focused primarily on the natural sciences. Given the nature of our inquiry (i.e., social media), the focus on research produced in business and social sciences is most appropriate. Furthermore, ProQuest offers full-text access, which was necessary for our ability to qualify the relevance of the search query returned documents.

Based on an initial scan of all scholarly articles on social media related search terms, we found that the minimal use (i.e., a total of 17 references between 1974 and 2004) of the term social media prior to October 2004 had little bearing to our contemporary

understanding of the term. In October 2004, Donath and boyd (2004) published their paper on social network sites, marking the birth of a novel field of research. Hence, October 2004 was established as the optimal starting point for this analysis.

Our scientometric analysis focused on *research productivity*—in terms of individual, institutional, and country productivity rankings—as well as *research impact*—in terms of the top cited publications and authors—of the social media domain. Hence, the results from our analysis of 610 journal and conference articles will pertain exclusively to social media and result in domain-specific recommendations.

Metrics

In order to assess the research productivity of individuals, institutions, and countries, the following variables were collected, namely: author's name, institution or company affiliation, country of residence, article title, number of authors, year of publication, volume, and issue. The last two variables were collected for the sake of completeness and to avoid duplicate entries.

In order to assess the research impact of individual authors and publications, two metrics were employed, as follows.

Per-author citation credit

Scientometric analyses pose multiple challenges, the most salient and foundational of which pertains to the computation of per-author publication or citation credit in the case of a multi-author paper (Lindsey 1980). A review of previous research productivity studies (Serenko et al. 2010) revealed four basic approaches to assigning scores to a multi-author article: (1) straight count (2) author position, (3) normalized page size, and (4) equal credit, as summarized in Table 1.

In line with previous suggestions (c.f., Serenko et al. 2010), in an embryonic and exploding field like social media, we believe the equal credit approach is best suited for appreciating the impact of sole authorship while avoiding the deflation of co-authorship and research cooperation, and, hence, will be employed in this study.

Publication citation index

Another important challenge for scientometric studies is the calculation of an individual's publication's citation impact index, primarily when comparing papers that have been published over a period of seven years (October 2004–December 2011). Whereas traditional scientometric analyses report the total number of citations each publication has received (as drawn from existing citation databases, such as, the Thomson Corporation's ISI Web of Science Social Sciences Citation Index), this metric does not account for the relative longevity of the paper.

To illustrate, consider two different articles that have been published in 2005 and 2011 respectively. Although both articles have the same number of citations, and therefore equal ranking, it seems rational to assume that the latter paper has been cited more frequently, hence, its contribution is more significant for it has only been available for a shorter period of time. Consequently, in order to account for the relative longevity of publications in the calculation of citation rankings in this longitudinal sample, this study—in addition to calculating the standard individual publication citation impact—employs Holsapple et al.

Table 1 Four approaches to assigning authorship credit in multi-author articles

Name	Straight count	Author position	Normalized page count	Equal credit
Approach	Co-authors receive equal score regardless of number of authors	Distribution of credit based on original authorship position (Howard et al. 1987)	Normalizes by manuscript size through allocating 1/n pages to each of n co-authors	Per-author citation credit calculated through inverse of number of authors (Erkut 2002)
Limitation	Favors publication rankings of people who often co-author while devaluing individuals who publish on their own (Bapna and Marsden 2002)	Favors rankings of first author while diminishing co-author contributions. Risky in alphabetically ordered authorship. May diminish cooperation in novel research domains	Loses reliability and validity when dealing with data set that includes various outlets with different length requirements	N/a

(1994) normalized citation impact index (NCII) with the aim of providing more accurate and reliable results that take into consideration a publication’s longevity and do not penalize recency.

Indices

Given that the present investigation is the first attempt to scientometrically assess the social media domain, we opt to report all indices that may help serve the purpose of this paper, rather than focus on a single metric as is generally the case with scientometric studies (Schubert 2001). Doing so will help to provide a more comprehensive view of the state, growth, and potential for progression of the domain. In what follows, we will reflect on the three indices used to operationalize the various scientometric measures discussed above.

Individual author citations

To calculate the cumulative number of citations obtained by each individual, we counted the number of papers that referenced a particular author. The final list of citations was constructed manually and included 18,989 entries.

Individual publication citations

The cumulative number of citations obtained by each individual paper. To obtain this score, we created a database of all citations used in the 610 social media-related, peer-reviewed journal and conference articles retrieved and counted how many times each paper was referenced. Since contemporary automatic citation indexes (e.g., Web of Science) include neither relatively new journals nor conference proceedings, this database of paper citations had to be constructed manually.

For the calculation of the cumulative citation score, we limited the maximum citation credit per reference paper to one. Hence, papers that are cited multiple times throughout the same article, would still count as one. Our motivation for treating every citation as a

single credit—regardless of the number of times this paper is cited throughout a single article—was to avoid inconsistencies due to varying citation styles from different authors (e.g., one author may repeat a citation after every single sentence whereas another author may place the citation only once at the end of a paragraph). Furthermore, since the citation analysis aims to highlight those authors and publications that are most popular throughout the domain, the frequency of citation across publications is more important than within a single publication.

In addition to the single credit computation, we only counted papers that were explicitly cited in the body of the article, thus discarding papers included in ‘suggested reading’ sections.

Normalized citation impact index

As aforementioned, the Normalized Citation Impact Index (NCII) considers the impact of a publication’s longevity (Holsapple et al. 1994). The NCII was calculated as follows:

$$NCII = (Total\ citations\ per\ referenced\ publication) / (Publication\ Longevity,\ in\ years)$$

Publication longevity refers to the number of years the referenced publication has been in print. With respect to this study, the end of the 2011 calendar year is considered the end point of the period. For example, the NCII of an article which was published in 2005 and was cited a total of 28 times, would be calculated as follows: $NCII = 28/7 = 4$.

Data collection and analysis

The data collection and analysis were independently performed by a pair of two research associates and subsequently reconfirmed by the two authors of this paper. The following is a summary of the analytical steps that were completed to compute research productivity.

Data collection

In order to understand the state of social media research, an extensive scientometric analysis was conducted in the Spring of 2012. Hereto, we conducted a broad search for articles containing social media related search terms, regardless of the primary domain and outlet type. This strategy allowed us to cast a wider net to see where social media research was being published, beyond a focus on a few top communication and/or information technology (IT) journals.

As aforementioned, given the embryonic and interdisciplinary nature of the social media domain, a focus on journal articles alone would provide an incomplete and erroneous view of the field. Thus, when we discuss social media research, we are referring to the entire body of knowledge from a broad set of outlets rather than a narrow subset of either communication or IS journals. Our final data set included all 610 journal and full-text conference articles published since the origination of the domain with the seminal paper of Donath & boyd (October 2004) until December, 2011 (i.e., > 7 years).

In our search, we used all ProQuest databases and conducted an advanced search using the following eight keywords: social medium, social media, social network site(s), social networking site(s), and online social network(s). In addition to these eight social media related keywords, we limited our search to English, full text, peer reviewed articles published in three sources (i.e., conference papers, conference proceedings, and scholarly

journals) and/or as three document types (i.e., articles, conference papers, and conference proceedings), as follows:

Search Query ProQuest (All databases) (conducted in January, 2012)

Topic = (“social media” OR “social medium” OR “social network site” OR “social network sites” OR “social networking site” OR “social networking sites” OR “online social network” OR “online social network sites”)

Advanced Search (refined by): Full Text, Peer Reviewed

Source Type: Conference Papers & Proceedings OR Scholarly Journals OR Books

Language: English

Time Span: October 2004–2011

This search resulted in a total of 1920 articles, out of which a total of 1,050 unique scholarly articles³ were identified. Before proceeding to the actual scientometric analysis, the two authors first independently judged the relevance of individual articles with an interrater agreement score of 92 %. The main acceptance criterion for the inclusion of an academic paper in this analysis was the use of the term social media or any of the related search terms as either the core technology analyzed or as part of the core argument developed in the paper to prevent the inclusion of articles making peripheral references to social media.

All disagreements were discussed and reconciled prior to proceeding with the analysis. After removing irrelevant articles, our dataset included 688 research articles. From these 688, we were unable to retrieve 78 papers from the Internet⁴ and after personally requesting a copy from the authors via email. Hence, our final data set for analysis included 610 articles.

Data analysis

Research productivity

In computing the *research productivity rankings* of individual authors, institutions, and countries three consecutive steps for the productivity analysis were completed. First, a list of all authors who published at least one scholarly journal or conference paper published between October 1, 2004 and December 31, 2011 was created. Editorials, book reviews, and interviews were excluded from the analysis.

Second, the final list of names was validated and revised when needed by cross-checking references to identify potential double entries, misspelled authors' names, and inconsistent nomenclature of author names and/or affiliations, as these would impede and invalidate the automatic generation of productivity rankings.

Third, the actual publication rankings for individual authors were calculated per paper as well as for the sum of all publications for any given author. The same calculation was computed for every academic institution or organization as well as for every country based on the sum scores of all authors associated with that institution, organization, or country.

³ The initial search resulted in 1516 articles, of which 466 articles were duplicates. Therefore the 1050 unique scholarly articles is the total count after removing the duplicate articles from our data set.

⁴ We had access to the e-resources of three large University libraries.

Research impact

In computing the *research impact* of individual publications and authors—with the aim of identifying the top cited papers and authors in the social media domain—we completed three similar consecutive steps for the citation analysis as follows.

First, a list of all the articles and their associated citations was created for each of the 610 articles. In total, 18,989 citations were identified. Second, the final list of citations was proofread to detect and correct incorrect or incomplete citations (e.g., misspelled author name or title, year of publication missing). Third, the full list of citations was sorted to identify the most frequently cited publications and authors. Furthermore, the Normalized Citation Impact Index was calculated and a list of the top social media contributors was compiled.

Results

The following section reports the results of this study pertaining to the productivity rankings of authors, institutions, and countries based on the scientometric analysis as well as the impact rankings of authors and publications based on bibliometric (citation) analysis.

Before discussing the findings of this study in detail, we want to highlight a few critical issues pertaining to the interpretation of the study's findings. First, research productivity is operationalized in terms of the number of publications. Although other measures of productivity may be employed—e.g., writing grants, reviewing manuscripts, teaching, developing curricula, participating in committees or editorial boards, all of which may also advance the state of social media research—the quantity of publications is the most frequently employed measure of research productivity, given its fundamental importance to academia.

Second, in this project, we included all social media publications as retrieved through ProQuest. Although we tried to be as comprehensive in our search as possible—through the inclusion of conference papers and proceedings in addition to journal articles—social media scholarship may appear in non-included outlets, including books, non-archival conference proceedings, or conference proceedings for which no full-text is available. Third, research productivity and impact should not be viewed as proxies for research quality. In order to evaluate research quality, additional qualitative and cognitive measures need to be employed, as will be further elaborated in the discussion section.

Fourth, institutional productivity and country productivity rankings favor larger faculties and more populated countries that produce more publications in general, however, this is an issue that does not just apply to the social media domain, but to all scientific areas (Serenko et al. 2010). Fifth, despite extensive and repeated effort to remove inconsistencies and errors in names and/or affiliations, minor errors may remain. Consequently, we strongly suggest readers to be cognizant of these issues when interpreting the following results based on established and repeatedly validated scientometric techniques.

General trends

During the period under investigation, October 2004 until December 2011, 610 journal and conference articles were published by a total of 1,355 authors (i.e., including double-counting), out of which 1,249 unique authors were identified (i.e., excluding double-counting). In addition to overall authorship, the level of author contribution for the social

media domain reveals an average of 2.0 unique authors per article. This authorship contribution was high when compared to other domains, e.g. 1.46 and 1.43 in Knowledge Management (Serenko et al. 2009), 1.97 in Information Systems (Bapna and Marsden 2002), highlighting the highly collaborative nature of social media research.

Further investigation demonstrates that 37.3 % of papers (i.e., 228 papers) were written by a single author, 27.2 % (i.e., 166 papers) by two authors, 19.4 % (i.e., 118 papers) by three individuals, and 16.1 % (98 papers) by four or more authors. Thus, about one-third of the domain's papers are single-authored and two-thirds are multi-authored papers. This finding is consistent with those reported for Knowledge Management (i.e., 34 % sole authored papers; Serenko et al. 2009) and slightly higher than those for Information Systems (i.e. 25 % sole authored papers; Bapna and Marsden 2002). As expected, there is an explosive growth in social media scholarship over the last seven years, a trend that is expected to continue (Fig. 2).

Upon closer inspection, it becomes apparent that authorship patterns are also changing drastically from individual to collaborative scholarship (Fig. 3): the proportion of sole authored articles decreased by 53.3 % over a 4 year period, and in the most recent year analyzed, i.e., 2011, they comprised just 29 % of all articles.

Productivity ranking

To investigate individual productivity rankings, we created a list of the top academics and practitioners with an individual productivity score exceeding one (Table 2). We selected this threshold as it produces a relatively short list of the 78 top academics and practitioners, which is in line with the recommended minimum of 60 (Serenko and Bontis 2004) for meta-review studies so as to incentivize the continued scholarship (i.e., avoid the 'one-off') by new researchers.

Exploring the relative contribution to the social media scholarship by the most active scholars in the domain, our findings show that the top three social media researchers produce 2.1 % of all social media scholarship. The next 25 social media researchers produce an additional 10.2 % of all social media scholarship, with the remainder (87.7 %) of all scholarship produced by a total of 1221 researchers. Interestingly, our findings are nearly identical with the scholarship distribution observed in the MIS discipline with a reported 2, 10, and 88 % by each grouping of scholars respectively (Im et al. 1998), and very similar with the scholarship data reported in the Knowledge Management/Intellectual Capital field that reported 2, 13, and 84 % for the corresponding groups respectively. Hence, it is encouraging to observe that the social media scholarship stream emerges out of a wide base of active researchers rather than emerging from a narrow band of social media investigators.

To investigate institution productivity, 1,305 institutional affiliations associated with the reviewed social media scholarship were identified. Of those, 493 institutions were unique, indicating an average productivity of 2.65 publications per institution. As with the above-mentioned ranking of scholars, we wanted to highlight a relatively short list of institutions that are most active in the social media domain, so we selected a cutoff of 2 (e.g., a score that would correspond to two publications being authored by a contributor affiliated with the institution), which resulted in the top 66 unique institutions as shown in Table 3.

This table includes three metrics: the total (normalized) score of each institution (accounting for multi-author papers), the total number of contributors, and the average individual researcher contribution score (which is the ratio of the total score and the number of individual contributors in a particular organization). Furthermore, Fig. 4 contrasts the scholarly work contributed by the top 5 institutions relative to the next 62

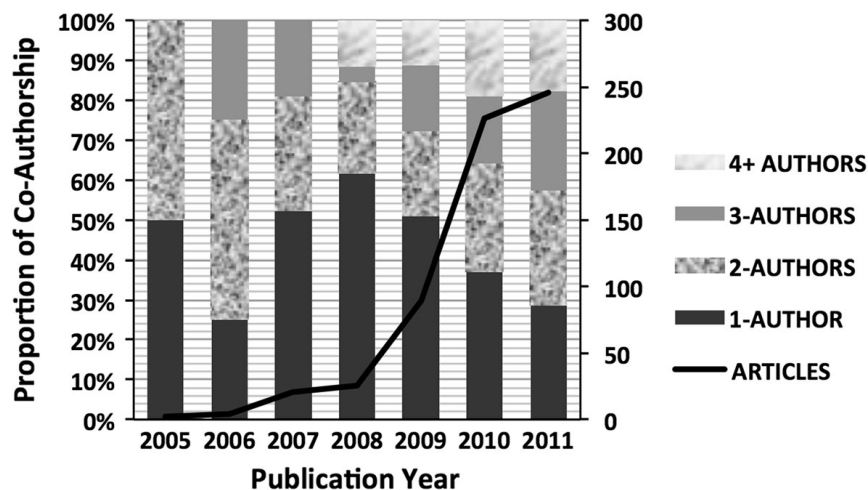


Fig. 2 Social media productivity analysis by number of authors (*left axis*) and annual volume of published peer-reviewed manuscripts (*right axis*) per year (since 2005)

institutions and organizations. Interestingly, among the top 67 institutions only two were non-academic (Microsoft Research and Mayo Clinic), while a third one, IBM, appeared in the top 100 (ranking of 89th).

Furthermore, three interesting findings emerged. First, out of the top 67 institutions, 42 (63.6 %) are from the U.S, followed by 7 (10.6 %) from the UK, 5 (7.6 %) from Australia, 4 (6.1 %) from Canada, 3 from Netherlands (4.5 %), and 1 (1.5 %) from South Korea, China, Sweden, New Zealand, and Ireland; these findings suggest that while the thought leadership on social media scholarship may be concentrated in the US, there are key scholarly entities all over the world that should not be overlooked.

Second, social media scholarship associated with the two non-academic organizations (Microsoft Research and Mayo Clinic) were actually produced in collaboration with scholars at academic institutions; this suggests the importance of public–private partnerships when exploring the social media domain. Third, the more productive institutions were associated with a greater number of contributors rather than harvesting greater productivity per individual author. This hints at the importance of a research culture, collaborators network, and supportive infrastructure to maintain an active social media research stream.

Building on the earlier point of a global contribution to social media scholarship, in Table 4 we report on country productivity rankings, where 25 countries were identified. All countries where the associated institutions are located were accounted for. The top five countries were the U.S. (61.3 %), U.K. (11.2 %), Canada (4.5 %), Australia (3.8 %), and China (2.8 %). According to this ranking, the U.S. leads by a formidable margin. While the U.S. and the U.K. jointly account for more than 70 % of the total social media research articles published since 2004, the top 10 countries (including Netherlands [6], Taiwan [7], Germany [8], Spain [9], and South Korea [10]) produced more than 91 % of all social media scholarship produced in the same timeframe

Research impact

In this section we present the results of a citation analysis of the 18,989 articles referenced in social media studies published since 2004. The aim of this analysis is to reveal the

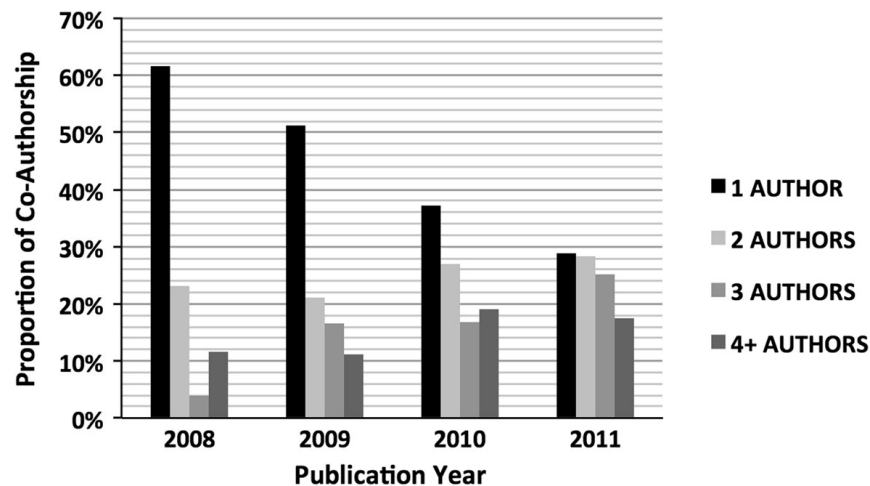


Fig. 3 Social media productivity analysis by number of authors (since 2008)* including trends for single and dual authorship * note: analysis for years 2005–07 were omitted, as they reflected 1 % of all publications

authors and manuscripts that had the greatest research impact through the proxy of citation counts.

Given the large volume of manuscripts cited in the social media scholarship reviewed, we limit the presentation to the publications that received at least 15 citations, producing a manageable list of the 20 most cited papers. The results are reported in Table 5 and sorted by raw count, with the normalized citations scores also provided.

Furthermore, the top 3 publications (i.e., 0.5 % of published peer-reviewed social media scholarship reviewed here) contributed 1.4 % of all citations, the next 17 publications (i.e., 2.8 % of reviewed scholarship) contributed 2.0 % of all citations, while the remaining 590 articles (i.e., 96.7 % of reviewed manuscripts) contributed the remaining 97.3 % of citations. Hence, from this fairly flat relationship it appears that the social media domain is one that has been influenced and continues to grow due to the collective effort of a wide base rather than a restricted niche of scholars.

Next, the outlets through which the top studies made their impact were explored, with Fig. 5 illustrating the relative proportion of journals to conferences and to all other channels that produced the most cited scholarship since 2004. Regarding journals, it becomes apparent that the Journal of Computer-Mediated Communication has been the key dissemination platform for the most influential manuscripts to date. On the one hand, this highlights the early support of the Editorial Board for this novel research domain; on the other hand, it is also a signal for the need to increase the pool of supportive journals in light of both a) the increasing rate of social media scholarship (as shown earlier in Figs. 1 and 2), b) the consequent, highly restrictive nature of a very low acceptance rate⁵ that may impede the scientific advancement of the field.

With respect to conferences, it is both interesting and encouraging to see that social media research is being disseminated through venues coordinated by three different scholarly societies: AIS, ACM, and IEEE. However, this also suggests that scholars need to be active seekers of relevant literature through outlets that may be less familiar so as to

⁵ The JCMC acceptance rate is reported as 2.4 % (source: [http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1083-6101/homepage/ForAuthors.html](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1083-6101/homepage/ForAuthors.html) Retrieved on October 13, 2012).

Table 2 Individual productivity scores for social media researchers (2004–2011)

Authors	#	Authors	#	Authors	#	Authors	#
Thelwall, Mike	5	Barnes, Michael	2	Kramer, Nicole C	2	Rose, Chris	2
Chen, Hsinchun	4	Bottles, Kent	2	Kunz, Michelle	2	Ross, Craig	2
Greenhow, Christine	4	Brockman, Libby	2	Lackaff, Derek	2	Russo, Angelina	2
Berthon, Pierre	3	Cheung, Christy M.K	2	Lampe, Cliff	2	Sams, Steven	2
Boyd, Danah	3	Choi, Sejung Marina	2	Lariscy, Ruthann	2	Segeberg, Alexandra	2
Cain, Jeff	3	Christakis, Dimitri A	2	Lazarou, George	2	Siibak, Andra	2
Chretien, Katherine C	3	Christofides, Emily	2	Ledbetter, Andrew	2	Simmering, Mary G	2
Ellison, Nicole B	3	Chu, Shu-Chuan	2	Lee, Matthew K.O	2	Sisic, Mia	2
Hsiao, Kuo-Lun	3	Conole, Grainne	2	Lehavot, Keren	2	Sohn, Dongyoung	2
Kim, Yoojung	3	Culver, Juliette	2	Light, Ben	2	Stefanone, Michael A	2
Kind, Terry	3	Desmarais, Serge	2	McIntyre, Emily	2	Sweetser, Kaye D	2
Moreno, Megan A	3	Gilpin, Dawn	2	Muise, Amy	2	Thackeray, Rosemary	2
Robelia, Beth A	3	Greysen, Ryan S	2	Neiger, Brad	2	Tokunaga, Robert S	2
Rosen, Devan	3	Hackworth, Brittany	2	Orr, Emily S	2	Tufekci, Zeynep	2
Trusov, Michael	3	Hanson, Carl	2	Orr, Robert R	2	Tynes, Brendesha M	2
Antheunis, Marjolijn L	2	Hargittai, Eszter	2	Parks, Malcolm R	2	Utz, Sonja	2
Arseneault, Jaime M	2	Hogan, B	2	Peng, Gang	2	Waters, Richard D	2
Avery, Elizabeth	2	Hsi-Peng, Lu	2	Pitt, Leyland F	2	Watkins, Jerry	2
Baker, Rosland K	2	Johnson, Thomas J	2	Qin, Li	2		
Bann, Carla M	2	Joinson, Adam N	2	Quan-Hasse, Anabel	2		

Based on the retrieval and computation method applies as described in the methods section

minimize the risk of redundant/duplicate research efforts but also to be equipped with a holistic understanding of the existing body of social media knowledge and past investigation lenses.

One last analysis on the dissemination of social media scholarship focused on the proportion of scholarly dissemination by outlet type and timeframe across the entire population of cited scholarship. As shown in Fig. 6, based on a random sample of 5 % ($n = 18,989$), three key findings emerge. First, it is a positive signal to see the growing proportion of conference papers being cited in social media manuscripts. As the turnaround from submission to availability for journals may be significantly longer than for conferences, it is important to turn to venues that afford a more timely access to such scholarship that can inform scholars' current investigations. Second, it is alarming to see the high prevalence (i.e., 40 %) of 'other' types of citations, including magazines, newspapers, and blogs among the citations provided.

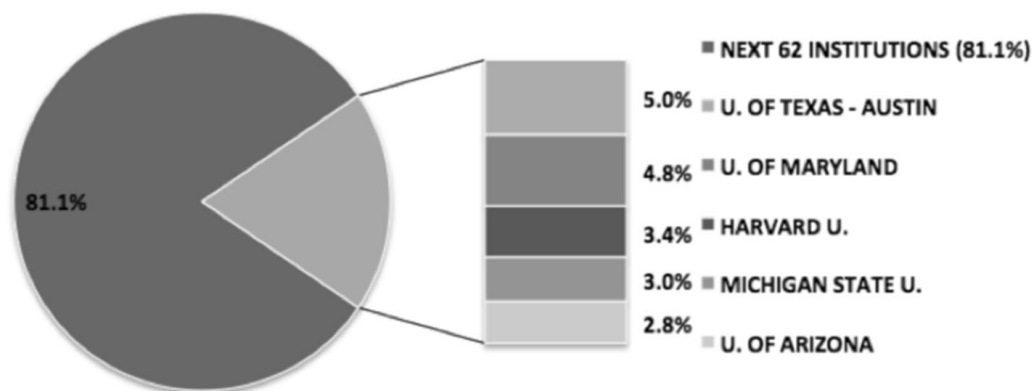
The third finding extends from the second one, and is equally alarming, namely that only half of the cited publications stem from peer-reviewed academic journals, including

Table 3 Top institutions ranked by social media research productivity (2004–2011)

Rank	Institution name	Score	Author count	Contribution per author
1	University of Texas—Austin	10.70	29	0.37
2	University of Maryland	10.17	17	0.60
3	Harvard University	7.25	16	0.45
4	Michigan State University	6.30	24	0.26
5	University of Arizona	6.00	11	0.55
6	University of London	5.50	7	0.79
7	Pennsylvania State University—University Park	5.42	16	0.34
8	University of Washington	5.08	11	0.46
9	University of Wolverhampton	5.00	12	0.42
10	Arizona State University	4.83	10	0.48
11	Massachusetts Institute of Technology	4.70	7	0.67
12	University of Wisconsin—Madison	4.55	10	0.46
13	George Washington University	4.50	12	0.38
14	University of Oxford	3.92	7	0.56
15	University of Southern California	3.80	8	0.48
16	University of California—Los Angeles	3.67	7	0.52
17	Rutgers University	3.50	4	0.88
18	Erasmus University Rotterdam	3.00	6	0.50
19	Indiana University—Purdue University	3.00	8	0.38
20	Northwestern University	3.00	4	0.75
21	Queensland University of Technology	3.00	8	0.38
22	The Open University	3.00	6	0.50
23	University of Amsterdam	3.00	7	0.43
24	University of Hawaii—Manoa	3.00	9	0.33
25	Brigham Young University	3.00	15	0.20
26	University of California—Berkeley	2.83	6	0.47
27	Yonsei University	2.83	11	0.26
28	University of Tennessee—Knoxville	2.83	8	0.35
29	Youngstown State University	2.83	6	0.47
30	Ryerson University	2.75	7	0.39
31	University of Minnesota	2.67	5	0.53
32	Florida State University	2.67	6	0.44
33	University of Kentucky	2.67	5	0.53
34	University of Melbourne	2.50	5	0.50
35	University of New Hampshire	2.50	6	0.42
36	University of North Carolina	2.50	5	0.50
37	University of Plymouth	2.50	5	0.50
38	VU University Amsterdam	2.50	4	0.63
39	Ohio State University	2.42	8	0.30
40	University College Dublin	2.33	4	0.58
41	<i>Microsoft Research</i>	2.30	6	0.38
42	Chinese Academy of Sciences	2.25	6	0.38
43	Kent State University	2.17	8	0.27

Table 3 continued

Rank	Institution name	Score	Author count	Contribution per author
44	University of Georgia	2.17	5	0.43
45	University of North Texas	2.17	5	0.43
46	University of Toronto	2.17	6	0.36
47	Fairleigh Dickinson University	2.00	5	0.40
48	Griffith University	2.00	3	0.67
49	Long Island University	2.00	3	0.67
50	<i>Mayo Clinic</i>	2.00	2	1.00
51	Montclair University	2.00	2	1.00
52	Morehead State University	2.00	6	0.33
53	RMIT University	2.00	3	0.67
54	San Jose State University	2.00	2	1.00
55	Stockholm University	2.00	3	0.67
56	University of Cambridge	2.00	3	0.67
57	University of Connecticut	2.00	2	1.00
58	University of Windsor	2.00	12	0.17
59	Victoria University of Wellington	2.00	4	0.50
60	Walden University	2.00	2	1.00
61	York University	2.00	4	0.50
62	Boise State University	2.00	5	0.40
63	London School of Economics	2.00	4	0.50
64	Swinburne University of Technology	2.00	7	0.29
65	Texas Tech University	2.00	7	0.29
66	University of Illinois Urbana-Champaign	2.00	5	0.40
67	University of Pennsylvania	2.00	4	0.50

**Fig. 4** Social media scholarship productivity by the top 5 versus next 62 institutions/organizations

both primary and reference fields, and also pre-and post-2004, indicating how relatively poorly informed the literature review of a typical study pertaining to social media tends to be. While this may initially seem as an exaggerated claim, this finding implies that, on

Table 4 Top countries ranked by social media research productivity (2004–2011)

Rank	Country	Absolute score	% Score	Cumulative score (%)
1	USA	340.91	61.3	61.3
2	UK	62.52	11.2	72.5
3	Canada	25.15	4.5	77.0
4	Australia	21.08	3.8	80.8
5	China	15.55	2.8	83.6
6	Netherlands	11.93	2.1	85.8
7	Taiwan	9.13	1.6	87.4
8	Germany	8.90	1.6	89.0
9	Spain	6.67	1.2	90.2
10	South Korea	6.43	1.2	91.4
11	Belgium	5.53	1.0	92.4
12	Sweden	5.33	1.0	93.3
13	New Zealand	5.00	0.9	94.2
14	Italy	4.03	0.7	94.9
15	Ireland	4.00	0.7	95.7
16	Finland	3.50	0.6	96.3
17	Denmark	3.33	0.6	96.9
18	Romania	2.60	0.5	97.4
19	Japan	2.50	0.4	97.8
20	Singapore	2.17	0.4	98.2
21	Greece	2.00	0.4	98.6
22	Malaysia	2.00	0.4	98.9
23	Norway	2.00	0.4	99.3
24	South Africa	2.00	0.4	99.6
25	Turkey	2.00	0.4	100.0

average, for every 10 references in any given paper published on social media in the last seven years, only 2 citations come from peer-reviewed scholarly journals. Hence, a more critical ‘eye’ by editors, reviewers, and authors toward the theoretical foundations of a paper is warranted in order to enhance the scientific rigor and promote the intellectual advancement of the social media domain.

Next, we focus our analysis of the research impact of individual researchers by presenting a list of the most frequently cited authors. While Table 6 ranks the authors by raw count (i.e., how many times each author was cited), a normalized score is also provided.

Figure 7 shows the proportion of citations contributed by the most cited researchers. Put simply, references to the 3 most cited authors’ works make up 2.7 % of all citations included in the reviewed literature. Similarly, references to the next 7 most cited authors’ works make up 1.8 % of all citations included in the reviewed literature. This speaks to the relatively high impact of the most prolific scholars in the domain of social media. Unlike other domains, such as Information Systems and Knowledge Management/Intellectual Capital (see Im et al. 1998; Serenko and Bontis 2004), the top 3 authors only account for a very limited number of citations. Whereas in the abovementioned fields, the top 3 authors account for nearly 2 %, in the social media domain the top 3 authors only account for .2 %

Table 5 Most cited studies published by social media scholarship (2004–2011)

Rank	Short title	Count	NCH
1	Boyd, d., & Ellison, N.B. (2007) "Social network sites"	129	25.8
2	Ellison, N.B., Steinfield, C., & Lampe, C. (2007). "The benefits of Facebook "Friends""	95	19.0
3	Boyd, d. (2006). "Friends, Friendsters, and MySpace"	34	5.7
4	Hargittai, E. (2007). "Whose Space?"	33	6.6
5	Donath, J., & boyd, d. (2004). "Public displays of connection."	31	3.9
6	Gross, R. and Acquisti, A. (2005). "Information Revelation and Privacy in Online Social Networks"	29	4.1
7	Livingstone, S., & Helsper, E. J. (2007). "Taking risks when communication on the Internet"	28	5.6
8	Boyd, d., & Heer, J. (2006). "Profiles as conversation"	25	4.2
9	Raacke, J., & Bonds-Raacke, J. (2008). "MySpace and Facebook"	21	5.3
10	Acquisti, A., & Gross, R. (2006). "Imagined Communities"	21	3.5
11	Walther, J.B., Van Der Heide, B., Kim, S.Y., Westerman, D., & Tong, S.T. (2008). "The role of friends' appearance and behavior on evaluations of individuals on facebook"	19	4.8
12	Dwyer, C., Hiltz, S.R., & Passerini, K. (2007). "Trust and privacy concern within social networking sites"	19	3.8
13	Mazer, J.P., Murphy, R.E. & Simonds, C.J. (2007). "I'll see you on "Facebook""	19	3.8
14	Stutzman, F. (2006). "An Evaluation of Identity-Sharing Behavior in Social Network Communities"	19	3.2
15	Hinduja, S., & Patchin, J.W. (2008). "Personal information of adolescents on the Internet"	18	4.5
16	Donath, J. (2007). "Signals in social supernets"	18	3.6
17	Valkenburg, P.M., Peter, J. & Schouten, A.P. (2006). "Friend networking sites and their relationship to adolescents' well-being"	18	3.0
18	Haythornthwaite, C. (2005). "Social networks and Internet connectivity effects"	17	2.4
19	Ellison, N.B., Heino, R.D., & Gibbs, J.L. (2006). "Managing impressions online"	16	2.7
20	Joinson, A.N. (2008). "Looking at, looking up or keeping up with people?"	15	3.8

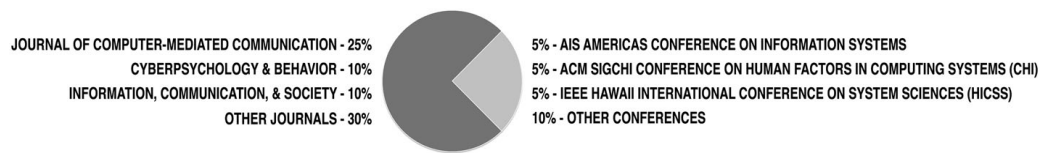


Fig. 5 Most popular outlets among most cited social media papers

of all citations. Although at first sight, this may seem to indicate that the social media domain is not dominated by a few leading scholars, instead it appears to be caused by the relatively large number of overall contributing authors to the domain—compared to other fields—and the large number of one-time contributions by these authors. These findings will be further discussed below, where we delineate four important implications for the social media domain.

Discussion and conclusions

This paper presented a scientometric analysis of the social media domain in order to understand its current intellectual core with respect to the research productivity of individual authors, institutions and countries, as well as the research impact of individual authors and publications. To this end, we reviewed and analyzed 610 articles published in a variety of journal and conference outlets between October 2004 and December 2011. Based on our findings, several implications emerge that warrant further exploration and intellectual discussion to track the evolution and advancement of the social media domain (see [masked source]) as well as to delineate areas requiring more attention and future research (see [masked source]).

Implication I: the social media domain displays limited diversity

During the project, 1,249 unique authors from 493 unique institutions were identified. Despite the embryonic nature of the social media domain, an exploding body of scholarship is evident that continues to grow. Although the discipline has attracted the attention of a tremendous number of individual contributors from a variety of academic and practitioner institutions, a small number of highly productive and impactful actors—individuals, institutions, countries—and publications have been identified that have skewed the domain's focus in a limited direction. Hence, although there appears to be diversity—based on the large number of unique contributors and institutions—this does not necessarily imply diversity in investigation lenses. Indeed, [masked source] offer a longitudinal and in-depth exploration of the social media domain as it pertains to its theoretical foundations, data practices, and research approaches, which confirms the lack of theoretical and methodological diversity in the social media domain.

Implication II: the social media domain is far removed from academic maturity

The academic maturity of a scientific domain can be established by analyzing three transformations, namely changes in (1) co-authorship patterns, (2) inquiry methods, and (2) the role of practitioners. Maturing scientific domains show trends toward co-authorship preferences as opposed to single authorship (Inzelt et al. 2009; Serenko et al. 2010), due to

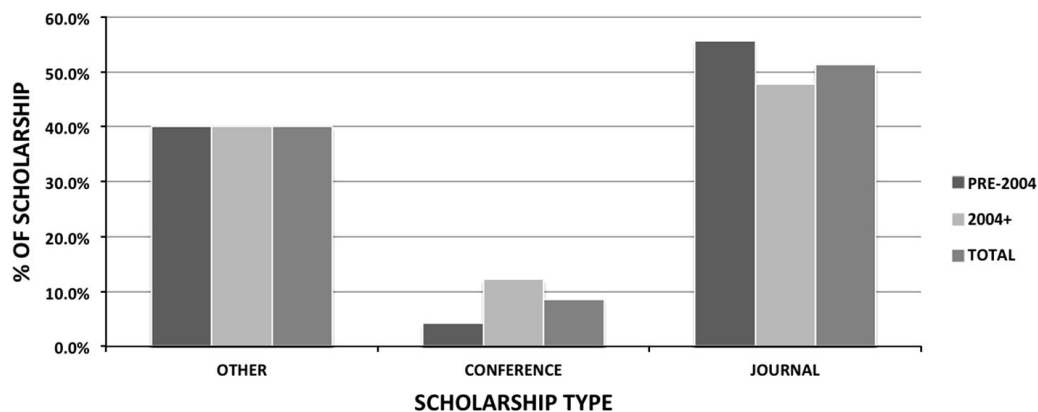


Fig. 6 Proportion of social media scholarly dissemination by scholarship type and timeframe

Table 6 Most frequently cited social media scholars ranked by straight count (2004–2011)

Rank	Author name	Cited count	Normalized score
1	Boyd, Danah	337	71.4
2	Ellison, Nicole	199	40.7
3	Lenhart, Amanda	147	37.4
4	Steinfeld, Charles	123	26.0
5	Walther, Joe	85	12.7
6	Livingstone, Sonia	60	13.9
7	Hargittai, Eszter	57	11.5
8	Lampe, Cliff	54	11.1
9	Madden, Mary	40	7.9
10	Van Der Heide, Brandon	39	10.3

increased competition for journal space and declining acceptance rates. Although our data show a clear trend toward multi-authored papers, this was the only sign of academic maturing.

With respect to inquiry methods, speculative and anecdotal evidence, based on personal opinions without empirical support or strong theoretical grounding, was extremely widespread. An elaborate discussion of the lack of theoretical grounding and a lack of strong research design can be found in (Masked source). Others have made similar observations regarding the dominance of studies of social media features at the expense of theoretical explanations of correlational or causal effects (see Chong and Xie 2011; Walther and Jang 2012). This is a pattern that appears to be reflective of the broader meta-field of Internet Studies, which has been criticized for an absence of theory (Silver 2004). Hence, it appears the social media is still far removed from establishing its theoretical foundations and from providing strong empirical tests of these theoretical principles.

Finally, in terms of the role of practitioners, their contribution to the social media domain has not shown a declining trend yet, which is general considered a sign of academic maturity. To illustrate, danah boyd is the most impactful scholar in the social media domain—with nearly double the impact of the second most influential scholar—whose primary affiliation is with a practitioner institution, namely Microsoft Research. Although

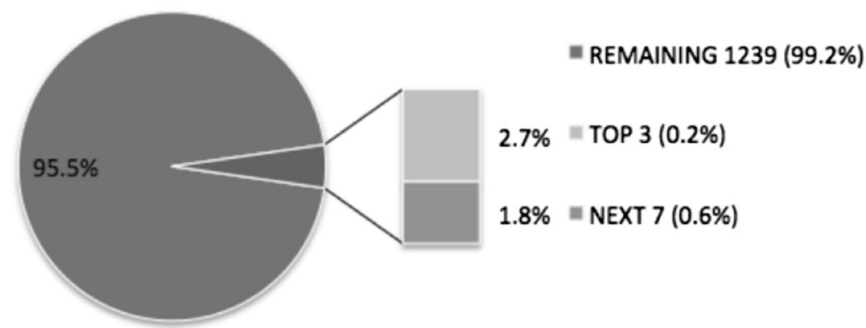


Fig. 7 Proportion of social media citations contributed by the most cited social media researchers

the majority of publications on social media so far has been produced by academic researchers, practitioners and practitioner institutions have made and continue to make a strong impact on the social media domain. Three institutions in particular have made it to the top 100 of most productive institutions, namely Microsoft Research, Mayo Clinic, and IBM.

Although this shows the lack of academic maturing in the social media domain, strong practitioner involvement is not solely a troublesome trend, as we will further reflect on below.

Implication III: important role of practitioners

The social media domain is still in its infancy; hence, many of the initial academic papers as reviewed for this study, include case studies and insights from key practitioners in the field (e.g., danah boyd, Microsoft Research, and Amanda Lenhart, Pew Internet and American Life Project). Although we can see growing attention for social media by academics from various disciplines, practitioners have played a crucial role in establishing the need for social media research, developing its foundations, and identifying future research avenues.

The high involvement of practitioners is both a blessing and a curse. On the one hand, the high involvement of practitioners has come at the expense of more theoretically grounded and scientifically rigorous research. Hence, it seems that the future advancement of the social media domain will depend largely on a growing involvement of academics and the application of foundational theoretical perspectives and rigorous research approaches. Signs from other technology-oriented fields, such as Information Systems (IS) and Knowledge Management (KM), which have evolved from high initial practitioner involvement to a scientifically rigorous domain, show that such an evolution is feasible but takes time (Serenko et al. 2010). Hence, following the suggestions of (masked source) it seems there is ample opportunity for social media researchers to explore novel topics, a variety of theoretical perspectives, and a multiplicity of research methods to ensure the advancement of the social media domain in the most productive manner with respect to impact and overall viability of future research prospects.

On the other hand, high practitioner involvement helps to safeguard against the types of debates over rigor versus relevance as well as the overall lack of practical relevance and applicability that have plagued the IS domain (cf. Baskerville and Wood-Harper 1996; Benbasat and Zmud 1999). In his review of the meta-field of Internet Studies, Silver (2004) emphasizes the importance of transcending academia and creating interface theories that

enable the integration of issues of practice and policy into social and cultural analyses of digital media. Hence, and although the social media domain needs to strive to become more rigorous, we should prevent the elimination (or significant reduction) of scholarly contributions made by practitioners, as this would in turn render the social media domain a purely academic one with limited practical usefulness.

Implication IV: a minority of countries generates the most research output—the Matthew effect in the social media domain

Our review of the social media domain identified 25 unique countries. The 3 leading countries generated 77 % of the entire research output, with 64 % of all research generated by the U.S. alone. This suggests that the production of social media research is not distributed equally among the nations, rather, a handful of countries account for the majority of publications in this domain.

A similar phenomenon, referred to as the Matthew effect (Bonitz et al. 1997; Merton 1968, 1988), has been observed in virtually all academic domains. In the case of the social media research domain, all countries in the top 5 most productive countries are Western, highly developed countries. Hence, it seems likely that these countries were able to initially invest heavily in research institutions, attract top faculty, and provide research support (e.g., grants) to further research in this area. This in turn facilitates the production of more scholarship in those selected countries, resulting in a “hegemony” of a few elite scientific nations. Again, this dominant Western canon appears to be reflective of the broader Internet Studies meta-field (Silver 2004).

A similar Matthew effect appears to be at play for individual scholars and institutions that were foundational to the initial shaping of the social media research domain. However, in light of the abovementioned barriers to the scientific advancement of this domain and its need for alternative theoretical perspectives and research methodologies, novel opportunities may arise for other—less- eminent—scholars, institutions, and countries to contribute in new and possibly more pertinent research directions while simultaneously mitigating the observed Matthew effect.

In conclusion, two challenges confronting the social media research domain have been observed, namely its lack of maturity and the Matthew effect. The first challenge, the lack of maturity of the social media domain, highlights the need for more theoretically grounded and more scientifically rigorous work. Although this study only provides insights into the maturity of the social media domain based on a scientometric and a bibliometric analysis of research productivity and research impact respectively, a deeper understanding of the research quality of the domain requires the use of additional qualitative and cognitive measures to examine its intellectual core vis-à-vis dominant data practices, research topics and concepts, theoretical perspectives, and methodological orientations. [Masked source] provide a longitudinal, in-depth, qualitative review of the social media literature, which further reveals the lack of maturing signs with respect to the field’s data practices, theoretical grounding, and methodological pluralism.

The second challenge, the Matthew effect in the social media domain, underlines the future importance of peripheral contributions to the social media. The popularity of a few authors, institutions, and countries further contributes to the lack of theoretical grounding and scientific rigor in the domain through the recurring focus on similar topics and questions as well as the re-use of the same approaches and methods. Hence, we hope that the paper by (Masked source)—through identifying foundational research areas, theoretical perspectives from a range of social science disciplines, and potential research questions—

evokes the involvement of current peripheral actors to support the advancement of the social media domain into new, broader, and more pertinent territory.

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