Factors Affecting the Scientific Impact of Literature Reviews: A Scientometric Study

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Abstract

Standalone literature reviews are fundamental in every scientific discipline. Their value is reflected by a profound scientific impact in terms of citations. Although previous empirical research has shown that this impact has a large variance, it is largely unknown which specific factors influence the impact of literature reviews. Against this background, the purpose of our study is to shed light on the driving factors that make a difference in the scientific impact of literature reviews. Our analysis of an exhaustive set of 214 IS literature reviews reveals that factors on the author level (e.g., expertise, collaboration, and conceptual feedback) and on the article level (e.g., methodological rigor) are significant and robust predictors of scientific impact over and above journal level factors. These insights enhance our understanding of what distinguishes highly cited literature reviews. In so doing, our study informs future guidelines on literature reviews and provides insights for prospective authors.

Keywords: Literature review, scientometric, impact of research methods

Introduction

Standalone literature reviews[1] are a fundamental genre in every scientific discipline. In fact, "*many of our greatest scientists have used, created, and contributed to the review literature*" (Garfield 1987, p. 113) and, Price (1965) concluded that after "*every 30 or 40 papers there is need of a review paper to replace those earlier papers that have been lost from sight behind the research front*". As in most scientific disciplines, so do literature reviews provide a foundation for scientific progress in IS (Webster and Watson 2002); the importance and the impact of this genre is evident in our discipline. With very few exceptions, every major IS journal accepts literature reviews, most often as a separate genre. In addition, there are editorial initiatives to facilitate the publication of literature reviews in some of the field's most renowned journals, including MIS Quarterly (Markus and Saunders 2007; Watson 2001), the European Journal of Information Systems (Rowe 2012, 2014), the Journal of Information Technology (Boell and Cecez-Kecmanovic 2015a, 2015b; Chiasson 2015; Oates 2015; Schultze 2015; Watson 2015) and the Communications of the AIS (Tate et al. 2015). Over the last 15 years, more than 200 standalone literature reviews have been published in renowned IS journals (Paré et al. 2015; Schryen et al. 2015) and they have been cited more than 50,000 times. This demonstrates the unique role of standalone literature reviews in IS and their high impact in the literature.

With citation analyses going back several decades to the initial publication of the Science Citation Index (SCI) in 1961 (Garfield 1964), the number of citations has been used as an evaluative measure for authors (Jackson and Nath 1989), institutions (Shim and English 1987) and publication outlets (Hamilton and Ives 1982a). In scientometric studies, many of which draw on bibliometric techniques (Hood and Wilson 2001), the number of citations is commonly used as an indicator of scientific impact (Grover et al. 2013; Katerattanakul and Hong 2003; Straub and Anderson 2010). Despite a critical discussion of whether citations are an adequate indicator of impact (MacRoberts and MacRoberts 1989; Nelhans 2014), data generally supports the claim that they are a reasonable indicator (Cole and Cole 1971; Garfield 2006; Inhaber and Przednowek 1976).

Literature reviews have commonly been found to be a high-impact genre (Hoffman and Holbrook 1993; Paré et al. 2015; Peters and Raan 1994), but their scientific impact is also characterized by a high variance: while some have achieved a remarkably high number of citations, we observe that a considerable number of literature reviews are cited rarely. While it seems likely that the impact correlates with the reputation of publication outlets, there is a lack of insights into what factors affect high scientific impact on the author and article level. Specifically, we still know little about the extent to which domain expertise, author collaboration and the solicitation of conceptual feedback supports authors in achieving a higher impact. Similarly, there is only anecdotal evidence on how the quality of literature reviews, commonly defined along the dimensions of rigor and relevance (Paré et al. 2015), affects scientific impact. We suggest that a systematic analysis of these factors contributes to our understanding of the underlying mechanisms that drive the scientific impact of IS literature reviews. Therefore, we ask the following research question:

> *What are the main factors affecting the scientific impact of IS literature reviews at the journal, author and article level?*

To answer this question, we conducted an exploratory scientometric study of 214 literature reviews which have been published in one of the TOP-40 IS journals (Lowry et al. 2013) between 2000 and 2014 and examined a model, which – beyond common control variables, such as the journal and the year of publication – includes author and article level variables which are of particular importance for the genre of literature reviews. With regard to the discourse on literature reviews, we provide empirical evidence on which factors affect their scientific impact; gaining insights into these factors is useful for substantiating our guidelines and methodological recommendations for authors of IS literature reviews. For these authors, it would in particular be critical to gain a solid understanding of the factors that determine the payoff (in terms of citations) they yield from embarking on the laborious and risky endeavor of developing a literature review. In doing so, we also contribute to the literature on factors that influence the number of citations - an important task in itself (Judge et al. 2007). By focusing on the particularly interesting and

[1] Hereafter simply referred to as literature reviews.

challenging genre of literature reviews, we complement other genre-specific scientometric studies, such as Tams and Grover (2010), who focus on the scientific impact of theory-based empirical articles.

The remainder of this article is structured as follows. We outline extant research on literature reviews and scientometric studies in the IS discipline. In the model development section, we introduce potential factors affecting the scientific impact of literature reviews, which are divided into the journal, author, and article level. The methodology section presents the sample of literature reviews, the measures (variables) and the regression model of our literature study. We then present the results of our study, provide a discussion, and conclude with a brief summary, and limitations and opportunities for further research.

Background

Literature Reviews

The genre of literature reviews provides a foundation for research in many scientific disciplines. Over time, the methodological discourse on IS literature reviews has been influenced by management (Alvesson and Sandberg 2011; Sandberg and Alvesson 2011; Zorn and Campbell 2006), the health sciences (Cooper et al. 2009; Fink 2014; Grant and Booth 2009; Oates 2015), psychology (Baumeister and Leary 1997), and the social sciences in general (Cooper 1998; Hart 1998; Petticrew and Roberts 2008). Between IS and its reference disciplines and within IS itself, literature reviews vary considerably with regard to methodology and the goals pursued. The methodological approaches and goals are two essential dimensions of its quality, also referred to as rigor and relevance (Paré et al. 2015).

Concerning rigor, one methodological aspect, which has been emphasized prominently (vom Brocke et al. 2015; Webster and Watson 2002), is the systematic conduct and explicit documentation of the search process. Another aspect is the technique of literature reviews, which ranges from qualitative to quantitative (King and He 2005), with narrative reviews and meta-analyses being situated at the extremes of the qualitative-quantitative continuum. Further methodological aspects are related to the process of coding results (Bandara et al. 2015) and quality appraisal (Baumeister and Leary 1997), for example.

These methodological approaches are selected to achieve different goals of knowledge creation (Baumeister and Leary 1997; Blumberg et al. 2005). The requisite goal of synthesizing extant research can be achieved through adopting a new perspective, through contributing to theory building or through testing theories (Schryen et al. 2015). In addition to focusing on the existing body of knowledge, some reviews provide directions for subsequent research.

The literature has suggested many definitions of literature reviews (e.g., Blaxter et al. (2010, p. 110), Blumberg et al. (2005, p. 11), Boell and Cecez-Kecmanovic (2014, p. 258,260), Fink (2014, p. 3), Hart (1998, p. 27), Levy and Ellis (2006, p. 183), Rowe (2014), Schwarz et al. (2007, p. 35), and Webster and Watson (2002, p. XIX)), which have been synthesized by Schryen et al. (2015)[2]:

> *A literature review provides a comprehensive and critical synthesis of the body of knowledge of a specified domain.*

Comprehensiveness in this definition is similar to the understanding of Webster and Watson (2002) and means that the scope is not confined to one research methodology or a small set of journals. It does not require reviews to cover the literature in its entirety. For example, a comprehensive review can cite a representative selection of articles (Cooper 1988).

[2] In agreement with the literature (Blumberg et al. 2005; Boell and Cecez-Kecmanovic 2014), it does not, however, make a strict distinction between synthesizing and interpreting and it acknowledges that that a scholarly synthesis necessarily involves critical analysis (Blaxter et al. 2010; Boell and Cecez-Kecmanovic 2014; Fink 2014).

Scientometric Research in Information Systems

Scientometrics, or research on research, refers to the use of quantitative methods to study scientific processes. Analyzing academic publication and citation practices is useful for understanding the positioning of knowledge claims (Hansen et al. 2006; Hyland 1999; Jackson and Rushton 1987) and their diffusion (Grover et al. 2013) within the academic discourse. It helps us to uncover the structure (Crane 1972; Nahapiet and Ghoshal 1998; Xu and Chau 2006) and evolution (Straub 2006) of our research community. Common methodological approaches are citation analysis and surveys; they allow researchers to analyze scientometric processes based on publication , citation, and network data (Lowry et al. 2004). In IS , scientometric studies have focused on three levels: (1) journal level assessment of the status of publication outlets, (2) author level analysis of research productivity , and (3) article level appraisal concerning originality and methodology of research articles (Chua et al. 2002; Hassan and Loebbecke 2010). While the journal and the author level have been researched extensively, there is less research on the article level (Hassan and Loebbecke 2010).

Concerning the journal level, tier rankings have been established based on two main approaches: perceived journal status is studied through surveys of IS scholars (Hardgrave and Walstrom 1997; Mylonopoulos and Theoharakis 2001; Willcocks et al. 2008) and quantitative journal impact or productivity is analyzed through methods of citation analysis (Holsapple 2008; Holsapple et al. 1994; Katerattanakul et al. 2003). With slight differences between some geographic regions (Mylonopoulos and Theoharakis 2001), these studies show similar results. One driver of journal impact studies is their use by institutions for tenure, promotion and the distribution of government research funds (Chua et al. 2002; Mylonopoulos and Theoharakis 2001; Peffers and Ya 2003). To synthesize the results of these journal rankings, meta-rankings, which aggregate these findings, have been developed previously (Nord and Nord 1995; Rainer Jr. and Miller 2005).

Regarding the author level, the main focus in the IS literature is to develop measures for research productivity and impact of individual authors. Corresponding research focuses on the differences between typical and prolific academics both in terms of quantity (as measured by publication count) and in terms of quality (as measured by citation counts) (Chua et al. 2002; Claver et al. 2000; Gallivan and Benbunan-Fich 2007; Huang et al. 2005). These studies show that the evolution of our field has resulted in a skewed distribution of production as measured by the number of articles published by individual authors. In top-tier journals, publication and citation counts have also been shown to be influenced by the country where the authors are employed (Gallivan and Benbunan-Fich 2007). As existing tenure and promotion processes have been described as "simplistic, a-theoretic, and biased toward reinforcing existing reputation and power structures" (Truex et al. 2009), recent studies have come up with novel approaches towards academic productivity measurement, which are intended to facilitate a more transparent promotion and tenure process: For instance, there are advances in combining the journal and author perspectives (Athey and Plotnicki 2000), novel measures like the Hirsch family of indices have been developed and refined (Truex et al. 2009), and a social network perspective has been adopted on the collaboration networks of IS researchers (Xu and Chau 2006). In particular, the findings of Xu and Chau (2006) suggest that IS might benefit from a stronger research collaboration across different domains.

The article level comprises specific factors such as the originality of the research contribution (Grover et al. 2013) and the methodology (Judge et al. 2007). Besides factors on the journal and author level that are of particular importance for evaluating research productivity and to distinguish high quality publication outlets, the article level has largely been neglected (Hassan and Loebbecke 2010; Lowry et al. 2004; Truex et al. 2009). Recent research on what influences scientific impact has made progress on measuring the intrinsic quality of a research article and it has taken a closer look at the macro-level structure and methodology (Grover et al. 2006; Mingers and Xu 2010; Tams and Grover 2010). These studies indicate that recent scientometric research in IS increasingly extends to article level factors, but the factors that affect the number of citations, specifically in the area of literature reviews, has not been understood completely.

Model Development

To develop a structured model for the scientific impact of literature reviews (cf. Figure 1), we draw on the classification of journal, author and article level factors, which is commonly used in the scientometric literature (Van Dalen and Henkens 2001; Judge et al. 2007; Leimu and Koricheva 2005; Mingers and Xu 2010). Our research model focuses on the conceptual variables on the author and article level and includes journal impact, year of publication and the domain as control variables.

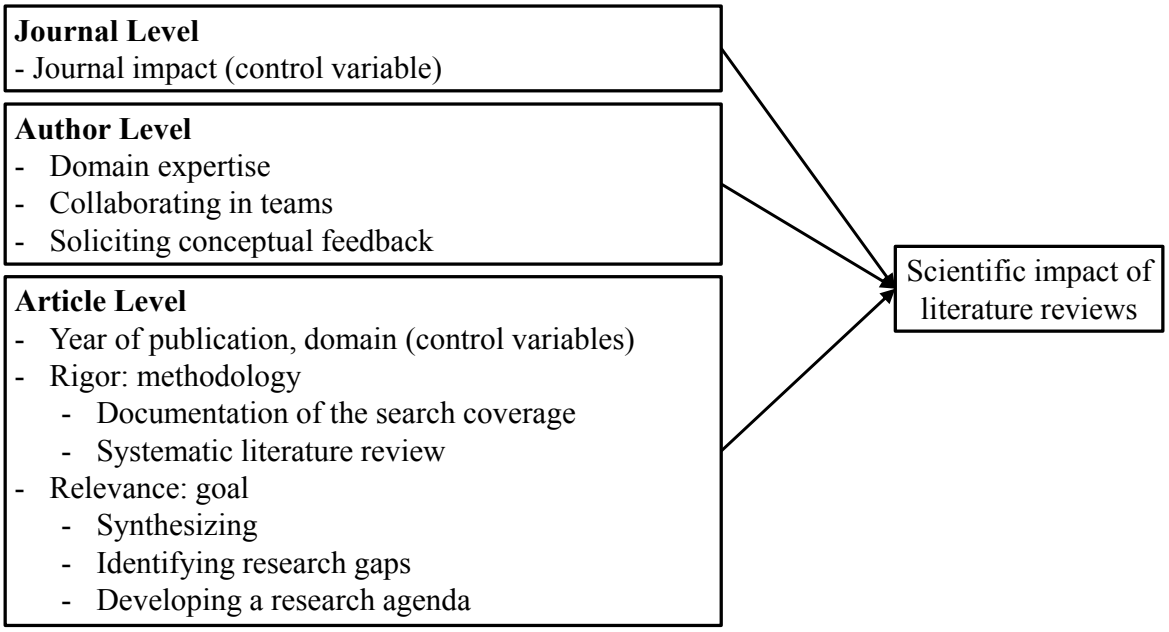

Figure 1. Research Model

Scientific Impact

A common assumption of scientometric studies is that articles that are cited are "*thought to impact the citing article*" (Grover et al. 2013; Starbuck 2005). This assumption has given rise to critical reflection on citation practices and the development of various scientometric theories to explain "*what really motivates scientists to cite*" (Hassan and Loebbecke 2010; Nicolaisen 2007). Beyond the theoretical progress, it has been noted that the nature of citations should be distinguished in order to achieve sufficient "*depth […][in] our understanding of the structure of scientific research*" (Moravcsik and Murugesan 1975) and it has been suggested that qualitative or combined qualitative-quantitative techniques would be useful to account for this distinction (Hassan and Loebbecke 2010; Nelhans 2014; Rip 1997; Zavaraqi and Fadaie 2012). Despite these suggestions that citations as a sociological indicator of performance might be subject to certain biases (Leydesdorff 1987), citation impact is often considered as one of the best tools we have for measuring the quality of articles (Garfield 2006) and therefore, it is commonly used as an evaluative measure to analyze the quality of research (Hassan and Loebbecke 2010). Several citation indices have been developed to quantify the impact of authors, institutions, and journals, and they are commonly used for ranking, tenure, promotion, and funding decisions (Bertsimas et al. 2013; Dasgupta and David 1994). Therefore, the relevance of citation counts for authors and the research community is evident (MacRoberts and MacRoberts 1989).

Journal Level Factors

Scientometric studies have found the publication outlet to be among the strongest predictors of the number of citations an article receives (Judge et al. 2007; Leimu and Koricheva 2005; Mingers and Xu 2010; Peters and Raan 1994). Factors on the journal level (e.g., visibility, access, reputation, and circulation) are significantly correlated with the scientific impact of their articles in information systems (Grover et al. 2013), management (Judge et al. 2007), economics (Ellison 2002), operations research

(Mingers and Xu 2010), psychology (Starbuck 2005) and the health sciences (Patsopoulos et al. 2005). As many of these factors are interrelated, scientometric studies commonly use the journal impact factor as a proxy.

From a theoretical perspective, it has been discussed whether journal related impacts are observed because high impact journals happen to publish high quality research (paper quality theory) or whether there is an additional journal effect – such as higher visibility – when we control for article quality (journal effect theory) (Mingers and Xu 2010). Admittedly, these theories are difficult to evaluate – in particular because there is no unanimous measure for the quality of an article and because it is difficult to determine whether articles of the same or similar quality would achieve a higher impact in certain journals. Without intending to challenge the paper quality theory, we assume that a higher visibility or circulation of certain journals has effects on average citation rates.

Another hypothesis which casts doubt on the causal effect of journal impact has been presented by Seglen (1989), who argues that if there was a causal effect of journals, there should be a correlation between articles published by the same author and the impact factors of the journals these articles were published in. Although the authors provided preliminary evidence by showing that there was a lack of correlation for articles of one author in the field of biochemistry (Seglen 1989), this controversial hypothesis has not been confirmed conclusively.

Author Level Factors

With regard to the author level, there are several factors which have been suggested to influence the impact of an article. While some author characteristics should be unrelated to the contribution of an article (e.g., gender, nationality, and social status), other author characteristics are indicators of the author's impact, or a qualification to develop strong contributions to research.

The category of author characteristics which is most commonly used in the scientometric literature comprises indicators of an author's scientific impact. Several instruments have been developed to measure the impact of an author's publication record, such as the Hirsch, g, and h(2) indices (Grover et al. 2013). Although various scientometric studies have found that author impact factors have a significant effect on the impact of her articles (Judge et al. 2007; Peters and Raan 1994), we agree with Grover et al. (2013), who are concerned that these indices are likely to yield trivial or tautological results, such as "*high impact research tends to be published by high-impact authors*". Other factors, such as academic reputation, and an author's affiliation appear to be less trivial predictors of an article's impact – but they are not completely isolated from an author's impact because publication record and citation impact are essential aspects when academic reputation is evaluated and when tenure and promotion decisions for top tier institutions are made. Finally, it has been hypothesized that self-reinforcing mechanisms (the Matthew effect) increase the citation impact of authors who are cited frequently (Merton 1968). Named after the biblical Gospel of Matthew, this effect describes the phenomenon that prominent authors are cited more often than less well known authors, even if they publish similar work. The concern that factors that pertain to the public perception, social status or background of the author – "*who the authors are*" – and not the quality, the substance or merit of the article – "*what the authors say*" – is reflected in the discussion of particularistic and universalistic variables (Baldi 1998; Grover et al. 2013; Judge et al. 2007). Explanations for why authors might have a propensity to emphasize particularistic or universalistic variables in their citation behavior, are provided by theorists who have put forward the social constructionist (Gilbert 1977) and the normative theory of citation (Merton 1973).

We observe that among the author-related variables some are more particularistic (e.g., gender and nationality) while others reflect an author's qualification to develop strong contributions to research. By drawing on both, the general scientometric literature and the methodological literature on literature reviews, we conceptualize three aspects which determine an authors' qualification to develop high-impact literature reviews: leveraging expertise in the domain, collaborating in teams, and soliciting (conceptual) feedback.

Expertise of the authors is a factor which can be expected to affect the quality of an article. In prior literature, it has been conceptualized as referring to different types of activities, such as the conception and design of the article, data acquisition, or the writing of the manuscript (Allen et al. 2014; Krasnova et al. 2013; Latour and Woolgar 2013; Maru sić et al. 2011). In this vein, expertise can take on various forms

and is a multifaceted construct. With regard to the genre of literature reviews, the particular importance of experience in the problem domain has been emphasized (Atkins and Louw 2000; Bandara et al. 2015; Cooper 1998, p. 184; Green et al. 2006; Rowe 2012; Schryen 2015; vom Brocke et al. 2015). Consequently, we include experience in the respective domain as a distinctive factor of high-impact literature reviews (Stremersch et al. 2007).

The hypothesis that collaborative work of teams produces research with higher impact than individual authors, has been confirmed repeatedly in different fields and research genres (Ayres and Vars 2000; Baldi 1998; Bergh et al. 2006; Bikard et al. 2015; Bornmann and Daniel 2008; Figg et al. 2006; Leimu and Koricheva 2005; Peters and Raan 1994; Singh and Fleming 2010; Wuchty et al. 2007). Collaborative knowledge creation and attribution of credit are "*inherently social*" (Crane 1972; DeSanctis 2003; Xu and Chau 2006) and they rely on networks of trust and authority (Nicholas et al. 2015; Thornley et al. 2015). The benefits of working in teams are manifest. They include division of labor (Jones 2009), better access to financial support, the opportunity of leveraging distinct skills of different authors (specialization) (Allen et al. 2014), the "*ability to tap into diverse sources of knowledge*" (Bikard et al. 2015, p. 1474; Fleming et al. 2007), and the capacity to tackle interdisciplinary topics (Xu and Chau 2006). While the advantages of research collaboration have been acknowledged widely, authors have to weigh them against the cost of sharing credit with their co-authors and the possibility of a less efficient collaborative process (Bikard et al. 2015). The benefits of collaboration have also been noted with regard to the specific genre of literature reviews; there are editorial recommendations to work in teams (Rowe 2012), and collaboration in teams seems to be an implicit assumption of methodologists who suggest that the rigor and reliability of the search, coding and quality appraisal activities requires (the author team of a literature review to develop) a consistent understanding (Bandara et al. 2015; Boell and Cecez-Kecmanovic 2015a; Cooper et al. 2009, p. 10).

Among the various benefits of collaborating in teams, we would like to emphasize conceptual feedback, which we would expect to have a more substantial impact on subsequent research than technical assistance, such as dividing the efforts of the search process (Oettl 2012). Articles published by multiple authors appear to be the result of more comprehensive and in-depth methodological and theoretical development (Grover et al. 2013), but the amount of conceptual feedback which was exchanged between the authors is difficult to measure. Conceptual feedback, however, can also be solicited from a network of trusted authorities (Nicholas et al. 2015; Thornley et al. 2015), who are not part of the author team, such as colleagues, reviewers, editors, and conference participants (Green et al. 2006). We thus frame conceptual feedback not only as part of the collaborative research process within the author team, but as extending to the whole research community (Oettl 2012). The extent to which an author team has solicited external conceptual feedback can be measured by analyzing the acknowledgement section of published articles (Laband 2002; Oettl 2012). There might be a few cases in which feedback is not acknowledged, or in which (well-known) scholars are included in the acknowledgements without having provided substantial feedback (Oettl 2012). We assume that strong conceptual feedback from senior scholars who are located in other institutions and conduct research in the same domain is usually acknowledged.

Article Level Factors

On the article level, we distinguish factors which are commonly included as control variables from universalistic factors, which are related to the quality of a research contribution. Common control variables on the article level include the field, research stream, or domain and the time of publication. Scientometric studies have not only uncovered inter-disciplinary differences in citation practices (Braun et al. 1995; Hurt 1987), but the average number of citations has also been found to vary between different domains in the same discipline (Garfield 2006). Finally, the number of citations is time-dependent and correspondingly, the year of publication has been found to be a significant predictor (Grover et al. 2013; Mingers 2008).

Universalistic attributes primarily include originality of the theoretical contribution and methodological rigor (Grover et al. 2013; Merton 1957). These attributes have been operationalized in the scientometric literature (Baldi 1998; Gottfredson 1978; Grover et al. 2013; Judge et al. 2007) and they have been extended to include the impact and novelty of ideas (Bornmann and Daniel 2008; Cole and Cole 1967; Grover et al. 2013; Hubbard et al. 2010; Judge et al. 2007; Stremersch et al. 2007), and the quality of

writing and presentation (Beyer et al. 1995; Grover et al. 2013; Judge et al. 2007), for example. Regarding the specific genre of literature reviews, there are few empirical insights into which universalistic attributes affect the number of citations. To identify possible, conceptual factors, we draw on the methodological literature on literature reviews. In particular, we refer to the two dimensions of quality as suggested by Paré et al. (2015): rigor and relevance, which should be linked by methodological coherence, which "*validates the fit between a review's goals and the methodological guidelines chosen to attain them*" (Templier and Paré 2015).

Rigor pertains to the methodology of the review process, which has been an integral aspect of the literature on literature reviews (Okoli 2015; vom Brocke et al. 2015; Webster and Watson 2002); it includes aspects like search coverage (e.g., regarding journals and the period of time), documentation of the search procedure, and quality appraisal, for example. With regard to the technique, narrative or qualitative reviews are commonly distinguished from quantitative reviews. Two prominent types of literature reviews that emphasize a rigorous approach, are systematic reviews and meta-analyses. While both types require authors to be transparent and systematic in their methodological process, systematic reviews synthesize the literature based on narrative techniques and meta-analyses employ statistical methods to test specific hypotheses (Paré et al. 2015). In IS, the methodological discourse on systematic literature reviews and meta-analyses has been influenced by the health sciences, which is reflected in the recent debate on "systematic literature reviews" (published in the Journal of Information Technology, Volume 30, Issue 2). Evidence suggests that the systematic, rigorous approach to reviewing the literature has a strong influence on the number of citations in the health sciences and management, where meta-analyses – the most rigorous, systematic type of article in the hierarchy of evidence - have consistently been found to have the strongest research impact (Judge et al. 2007; Montori et al. 2003; Patsopoulos et al. 2005). There might, however, be considerable differences between the health sciences, management and IS and there is no evidence of whether methodological rigor pays off in terms of scientific impact and whether positioning a literature review as a "systematic literature review" makes a difference.

Relevance is related to the goals of the review (Paré et al. 2015), which include synthesizing, identifying research gaps and developing a research agenda (Schryen et al. 2015). Synthesizing is considered to be a mandatory contribution of literature reviews, it requires authors to go beyond summarizing extant literature and it can occur in different ways. For example, authors can adopt a new perspective and summarize the literature based on a macro framework. Another way of synthesizing is to focus on building a theory based on the literature by advancing new or existing models or hypotheses. A third way of synthesizing is theory testing – a quantitative way of aggregating extant research, with meta-analyses being a well-known type of theory testing reviews. Beyond synthesizing, literature reviews commonly suggest research gaps that should be addressed in subsequent research (Müller-Bloch and Kranz 2015). When these research gaps are summarized in a coherent framework and complemented by specific guidelines regarding suitable theoretical approaches and methodological designs, the authors develop a research agenda (Rowe 2014; Webster and Watson 2002). These ways of contributing to knowledge creation are essential universalistic attributes of literature reviews and some of them are implicitly intended to influence subsequent research – theory building should stimulate theory testing, identifying research gaps and developing a research agenda should facilitate subsequent research which closes these gaps. In fact, there are prominent editorial recommendations in IS, which suggest that identifying research gaps and developing a research agenda is a highly valuable contribution which helps to guide subsequent research (Rivard 2014; Rowe 2012; Webster and Watson 2002). In line with these recommendations, we recognize that there is a lack of empirical insights into whether this value actually translates into scientific impact (as measured by the number of citations).

Methodology

To test our model (depicted in Figure 1), we identified 214 standalone literature reviews which have been published in major IS journals between 2000 and 2014[3]. To avoid biased results for more recent literature reviews (underestimation), we included a lag to allow for a sufficient time window and measured the scientific impact (in terms of citations) as of 2016/04/26. In the following, we describe our sample, the measures and our analytical approach.

Sample of Literature Reviews

Consistent with our goal of explaining the variance of the number of citations, we selected an exhaustive set of standalone literature reviews which is representative for the IS discipline. In contrast to other scientometric studies (Grover et al. 2013; Sidorova et al. 2008; Tams and Grover 2010), we go beyond a few top-tier journals and focus on the broad set of 40 IS journals, which was identified by Lowry et al. (2013). These journals were identified based on expert judgement and impact factors; they include the AIS senior scholar's basket of journals and they are primarily information systems journals. To eliminate language-related effects, we focus on literature reviews published in English. Our scope is a full sample of those standalone literature reviews which are compliant with our definition of LRs and which have been published in the aforementioned set of journals between 2000 and 2014.

The literature reviews were identified by the author team by scanning the tables of contents and compiling a preliminary list of 455 literature review candidates. From this list, we excluded articles which do not comply with the definition of standalone literature reviews provided by Schryen et al. (2015). Specifically, we exclude 59 candidates which do not provide a synthesis, 23 candidates which are short research commentaries, 26 candidates which collect primary data, 87 candidates which do not focus on domain knowledge, 8 candidates which do not focus on the academic literature, and 38 candidates which adopt a too narrow scope[4].

Measures

Table 1 provides an overview of the measurement which operationalize our research model (cf. Figure 1). In order to measure the scientific impact that LRs have developed, we use citation counts as commonly suggested in the literature (Bornmann and Daniel 2008; Grover et al. 2013; Judge et al. 2007; Tams and Grover 2010); specifically, we draw on citations provided by GoogleScholar.

As we cover a broad scope of journals, controlling journal-related factors is essential. Consistent with other scientometric studies which cover many journals, we do not control single journals but measures of journal impact (Judge et al. 2007; Mingers and Xu 2010). This allows us to control journal-related effects while at the same time avoiding model overfitting by including many dummy variables for which there are very few observations. We use the journal impact factors provided by Thomson Reuters as a measure to control journal-related reputation effects[5].

[3] To capture all literature reviews, the set of literature reviews was compared to the set of literature reviews identified by Paré et al. (2015).

[4] For example, we exclude candidates which focus on a narrow set of journals (only a subset of the AIS senior scholars' basket) or a narrow time frame (less than 10 years).

[5] For a few journals, impact factors were not available. To avoid excluding these journals, we imputed the missing impact factors by setting them to the average impact factor of the other journals in the same ranking class according to the VHB journal ranking (http://vhbonline.org/VHB4you/jourqual/vhb-jourqual-3/teilrating-wi/).

Table 1. Factors and Measurement of the Research Model		
Factor	Measurement	References
Journal Level		
Journal Impact	Journal impact factor provided by Thomson Reuters (imputation of missing values based on the average impact factor of same-tier journals according to VHB-JOURQUAL3)	Judge et al. (2007) Mingers and Xu (2010)
Author Level		
Domain Expertise	Manual analysis of the number of backward self-citations of all authors, based on the references-section, and classification of limited (0-5 self-citations), moderate (5-14 self-citations) and strong domain expertise (15 or more self-citations)	Stremersch et al. (2007) Tagliacozzo (1977)
Collaborating in Teams	Number of authors of the literature review, and classification into individual authors, teams of authors (2-3 authors) and big teams of authors (4 and more authors)	Leimu and Koricheva (2005)
Soliciting Conceptual Feedback	Manual search for acknowledgment of conceptual feedback (e.g., "comments", "suggestion", "review", "discussion", "criticism", and "advice") within the literature review (in particular acknowledgement sections and footnotes)	Laband (2002) Oettl (2012)
Article Level		
Time	Time since publication	Grover et al. (2013) Judge et al. (2007) Mingers and Xu (2010)
Domain	Two-person open coding process of the topic, with a third reconciliation coder	Garfield (2006)
Methodology: Systematic Review	Manual analysis of whether the authors refer to their review as *systematic*	Kitchenham and Charters (2007) Paré et al. (2015)
Methodology: Meta-Analysis	Manual analysis of whether the authors conducted a meta-analysis	Card (2011) Paré et al. (2015)
Methodology: Search Coverage Documented	Manual analysis of whether the authors document and explicitly report the search coverage (at least a summary of the journals and time-frame covered)	vom Brocke et al. (2015)
Goal: Synthesizing, Identifying Research Gaps or Developing a Research Agenda	Manual analysis of whether the authors go beyond synthesizing (required by the definition of literature reviews) and identify research gaps or develop a research agenda (specific and structured)	Rowe (2014) Schryen et al. (2015) Webster and Watson (2002)

Author level factors include collaboration, solicitation of conceptual feedback and expertise in the domain. We measure collaboration in terms of the number of authors of the literature review; similar to extant scientometric research (Leimu and Koricheva 2005), we divide the number of authors into groups: individual authors, teams of authors (2-3 authors) and big teams of authors (4 and more authors). We coded solicitation of conceptual feedback based on the measures developed by Oettl (2012). Instead of focusing on the helpfulness of those who provide feedback, we use the measure to determine whether the

authors of the literature reviews have solicited and received conceptual help from others. Specifically, we check whether the literature review acknowledges "*suggestions*", "*reviews*", "*discussions*", "*advice*", "*criticism*" etc. (Oettl 2012). Regarding expertise in the domain, we determined whether the authors have previously conducted and published research in the domain in which their literature review is situated. Specifically, we measure the number of self-citations in the literature review and group them into limited domain expertise (0-5 self-citations), moderate domain expertise (5-14 self-citations) and strong domain expertise (15 or more self-citations). These groups were identified by analyzing the distribution of total self-citations. Although it is not a perfect measure, we assume that having published more than 5 or 15 articles which can be cited in a literature review is a useful indicator of expertise. On the one side, we assume that authors who have published in the same domain before have incentives to cite their own publications. On the other side, authors might be required to remove self-citations which are irrelevant to the literature review during the peer review process. While self-citations have been referred to as an indicator of programmatic development (Stremersch et al. 2007), and seniority (Tagliacozzo 1977), we acknowledge that there might be rare cases in which expertise is acquired through industry expertise exclusively.

As the citation count is time-dependent (Bergh et al. 2006; Bornmann and Daniel 2008; Grover et al. 2013; Hamilton and Ives 1982b; Hoffman and Holbrook 1993; Judge et al. 2007; Mingers and Xu 2010), we control the number of years between the publication of the literature review and 2016 – when the cumulative number of citations was extracted from Google Scholar.

In addition, our model includes the domains of the literature review as a control variable, as some domains attract more attention or a higher citation density (Garfield 2006). The domains were determined in an open coding process with two coders. Disagreements were reconciled by a third coder and domains that were coded less than 5 times were combined in one category to avoid overfitting the model.

With respect to methodological rigor, we coded whether the search methodology has been documented (either in the literature review or in the appendix), and whether the literature review is a meta-analysis. In addition, we coded whether the literature review is described as "systematic". As systematic reviews include meta-analyses, we evaluate their effect on scientific impact in a separate model.

Concerning the (epistemological) goals of the review, we coded whether the literature review provides a synthesis, whether it identifies research gaps, and whether it provides a research agenda (Schryen et al. 2015). Inter-coder reliability values (Cohen's Kappa) confirmed consistent coding results for synthesizing (0.94), identifying research gaps (0.93), and developing a research agenda (0.88).

Generalized Linear Regression

Consistent with previous scientometric research in IS (Loebbecke et al. 2007), we observed that the number of citations is a highly skewed distribution (skewness: 8.02) of count data. As overdispersion is significant (α=362.9, z=3.03, p=0.001; Cameron and Trivedi 1990), we cannot use a Poission model, which assumes $\lambda = E(Y) = Var(Y)$. Instead, we use a negative binomial GLM (generalized linear model) (like Mingers and Xu 2010), which is a generalization of (log)-linear models applied in other scientometric studies (cf., e.g., Bertsimas et al. 2013, Bikard et al. 2015, Grover et al. 2013, Montori et al. 2003, Patsopoulos et al. 2005 and Tams and Grover 2010). Similar to common scientometric models which log-transform the number of citations to achieve a close-to-normal distribution, our model is based on the canonical logit link-function. Our dataset contains some outliers (highly cited LRs) which were not excluded to identify reasons for their research impact. In order to measure and discuss the influence of these literature reviews on our model coefficients, we checked whether the coefficients and test-statistics are robust with regard to the exclusion of these outliers. The resulting model explains 59.94% of the variance in citation counts (Nagelkerke R^2= 0.5994).

Results

Descriptive Statistics

Table 2 shows the top-5 literature reviews which have the highest research impact in IS research; they account for approximately 50% of the research impact of all literature reviews published in information systems (between 2000 and 2014). Consistent with previous scientometric research, our results show that research impact in information systems follows a highly skewed distribution with many literature reviews being cited rarely (Hassan and Loebbecke 2010). The concentration of citations on a few literature reviews is reflected by a Herfindahl-Hirschman Index of 0.05 (median: 74; mean: 255, std. error: 795).

Table 2. Top-5 IS Literature Reviews with the Highest Research Impact

Literature Review	Citations
Alavi and Leidner (2001)	8,529
DeLone and McLean (2003)	6,607
Legris et al. (2003)	2,694
Melville et al. (2004)	2,337
Wade and Hulland (2004)	1,839

With regard to publication outlets and literature reviews, there are differences in publication frequency. While 50% of the Top-40 IS journals have published less than 5 literature reviews over 15 years, a few journals have published a considerable number of literature reviews: MIS Quarterly (28), Journal of the AIS (19), Communications of the AIS (18), the Journal of Information Technology (15) and the Journal of Strategic Information Systems (15). Over the last years, our data also shows an increase in publication frequency of literature reviews in all 40 journals and the AIS senior scholars' basket (cf. Figure 2).

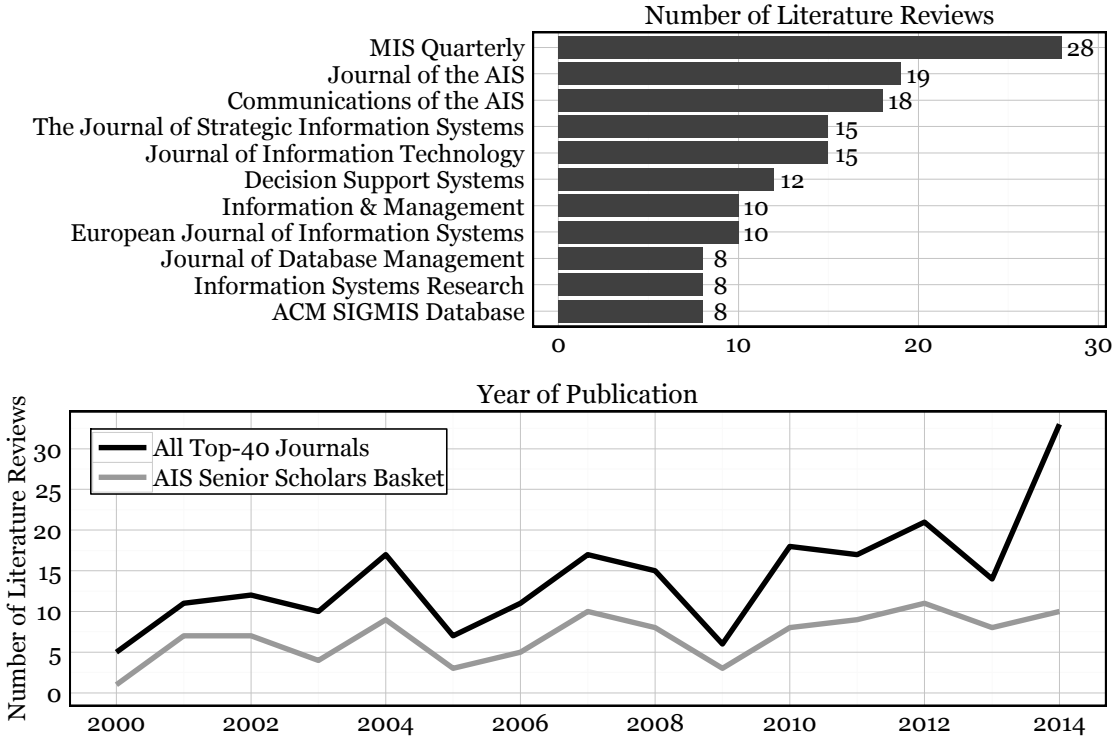

Figure 2. Distribution of Literature Reviews Published between 2000 and 2014 (n=214)

Factors of Scientific Impact

We checked correlation coefficients and generalized variance inflation factors (GVIF) of all variables and found that there are no problems with multicollinearity; all GVIFs are well below the threshold of 2. This indicates that the factors are sufficiently unrelated and that collinearity does not influence the results. Our model, which describes the number of citations by factors on the journal, author and article level, is defined as follows:

$$Log(citations) = intercept + \beta_1 journal\_impact\_factor$$
$$+\beta_2 domain\_expertise + \beta_3 author\_team\_size + \beta_4 acknowledgement\_of\_conceptual\_help$$
$$+\beta_5 topic + \beta_6 meta\_analysis + \beta_7 search\_documented + \beta_8 research\_gaps + \beta_9 research\_agenda.$$

Table 3 presents our results including coefficients and standard deviations. In line with our expectations, our model shows that the publication outlet is a significant predictor for the scientific impact of literature reviews. In particular, the journal effect is robust when outliers are excluded from the dataset.

Table 3. Generalized Linear Model Results

		Coefficient	Std. Error
	Intercept	1.32***	0.31
Journal	Journal impact factor (control variable)	0.30***	0.05
Author	Domain expertise	0.29**	0.11
	Collaborating in teams of 2-3 authors [a]	0.59**	0.19
	Collaborating in teams of 4 or more authors [a]	0.01	0.27
	Soliciting conceptual feedback	0.24	0.16
Article	Time (control variable)	0.26***	0.02
	Domain: E-Commerce (control variable) [b]	-0.56*	0.26
	Domain: Human-Computer Interaction (control variable) [b]	-0.49	0.33
	Domain: IS Value (control variable) [b]	0.26	0.35
	Domain: Knowledge Management (control variable) [b]	0.10	0.34
	Domain: Outsourcing (control variable) [b]	-0.01	0.34
	Domain: Security (control variable) [b]	0.13	0.32
	Domain: Software Development (control variable) [b]	-0.82***	0.23
	Domain: Technology Acceptance and Use (control variable) [b]	0.39	0.27
	Domain: Virtual Teams (control variable) [b]	-0.16	0.35
	Methodology: meta-analysis [c]	-0.50*	0.25
	Methodology: search coverage documented	0.63***	0.16
	Goal: identification of research gaps	-0.12	0.18
	Goal: development of a research agenda	-0.12	0.20

Significance levels: *** indicates p<0.001, ** indicates p<0.01, * indicates p<0.05, † indicates p<0.1.

[a] The effects of collaborating in teams are compared with single-author literature reviews.

[b] The domain effects are compared with the impact level of *other domains*, which comprises domains in which less than 5 literature reviews were published.

[c] The effect of systematic literature review (which includes meta-analyses) was determined in an alternative model, the results are similar. Coefficient: -0.58*, Std. Error: 0.20.

With regard to the author level, we observe that – above the control variables - domain expertise is a significant predictor of scientific impact. This factor is also robust with regard to model re-specification (e.g., excluding other conceptual variables) and different sub-sets (e.g., excluding outliers or selecting time-based sub-sets). Furthermore, there is evidence that teams of authors (2-3 authors) produce higher-impact literature reviews; working in teams of more than 3 authors has no significant effect. Our results indicate that soliciting conceptual feedback is not significant. A re-run of our model on the subset of single-author literature reviews shows, however, that for individual authors, soliciting conceptual feedback becomes a highly significant positive predictor.

At the article level, the time of publication and two domains (E-Commerce, Software Development) have significant negative effects. Both methodological characteristics (systematic literature review and search coverage documented) are robust and significant predictors of scientific impact. While documenting the search coverage has a highly significantly positive effect, publishing a meta-analysis has significantly negative effects on scientific impact. Moreover, replacing the meta-analysis variable by the broader category of "systematic literature reviews" (SLR) in an alternative model shows that SLRs also have a significantly lower scientific impact than literature reviews which are not described as "systematic". Above and beyond these variables, we observe that the scientific impact does not seem to depend on the (epistemological) goal of the literature review.

Discussion

Our results show that our comprehensive set of 214 IS literature reviews examined in this study has achieved a tremendous scientific impact – in aggregation they were cited over 50,000 times. Consistent with previous scientometric research in IS (Loebbecke et al. 2007), however, we can also observe that, with a Herfindahl-Hirschman Index of 0.050, it is indeed only a small number of literature reviews that drive this aggregated scientific impact (in terms of citations) while many literature reviews either receive low single-digit or no citations.

Journal Level Factors

Concerning the publication outlet, our results confirm that journal-impact correlates with article impact. These insights might appear to be in contrast to Grover et al. (2013), who found that the journal is not a significant predictor for scientific impact of non-empirical IS-articles. The significance of our journal level results can be explained by the larger number of distinct journals in our sample. We extend the focus past top-tier journals (MIS Quarterly, Information Systems Research, and Journal of Management Information Systems) and offer a glimpse at a more diverse range of journals.

It should be noted, however, that other explanatory approaches remain to be explored. Specifically, the hypothesis that the number of citations depends on the specific author instead of the publication outlet has not been substantially rejected (Seglen 1989). Rejecting this hypothesis would require us to show a correlation between the impact of single articles of the same author and the impact factors of the corresponding journals (Seglen 1989). This test would require having a sufficient number of observations (articles) per author. As authors in IS tend to publish literature reviews relatively rarely, a wider scope (such as non-empirical articles) would be necessary to rule out the existence of a "*journal effect*".

Author Level Factors

For authors, publishing literature reviews seems to be a challenging endeavor. While 454 scholars have contributed to this genre, there are very few authors who have published more than one literature review (median of the number of literature reviews per author: 1; mean: 1.1). To complement common suggestions that conducting a literature review is a good way to tap into a new research domain (Rowe 2014; Sammon et al. 2010), our results suggest that high impact literature reviews tend to be published by authors who have gained extensive experience by publishing in the domain. While domain expertise is a highly significant and robust predictor of scientific impact in our dataset, it might also be correlated with more general measures of experience or reputation. Although this makes it difficult to isolate causal effects of qualification and reputation, we encourage further research on this distinction. Distinguishing these effects would improve our understanding of the nature of particularistic citation behavior (citing an article for its authors and not for its scientific merit). In particular, there is a lack of insights into whether

literature reviews are cited frequently because the authors are cited frequently and have high reputation (Matthew effect) or whether the scientific impact can be attributed to the quality and experience of the authors (Baldi 1998; Grover et al. 2013; Judge et al. 2007).

Another key insight on the author level is that high-impact literature reviews tend to be published by small author teams. This confirms findings from the general scientometric literature (Figg et al. 2006; Wuchty et al. 2007) for the particular genre of literature reviews in IS. It also substantiates the recommendations of Rowe (2012) to develop literature reviews in teams. It appears reasonable to assume that larger author teams achieve an even higher scientific impact than small author teams. For example, more authors could contribute more and different types of expertise and a literature review which is promoted by different authors (possibly from different universities) should be more likely to have a higher impact. In contrast to these speculations, our results show that larger author teams do not achieve a higher impact than single authors of literature reviews. This confirms the findings of Bikard et al. (2015), who suggest that collaboration can be associated with more highly cited work for papers with up to four authors. The advantages of collaboration do not seem to scale up to teams of more than 3 authors, possibly because working in teams also brings a number of difficulties, such as coordination costs and interpersonal tensions (Paulus and Brown 2003).

Beyond opportunities to distribute tasks and to align this distribution with expertise of particular authors, a further advantage of collaborating in author teams is the opportunity to exchange conceptual feedback. Although directly measuring the exchange of conceptual feedback within an author team would require a different research design, the analysis of the subset of single-author literature reviews provides evidence for our argument: Among the single-author literature reviews, the acknowledgement of external conceptual feedback is a highly significant predictor of scientific impact. This suggests that internal feedback within an author team can – at least to some degree – be substituted by external feedback.

Article Level Factors

On the article level, some domains are strong predictors for the scientific impact. For example, our results suggest that literature reviews published in the domains of E-Commerce and Software Development are cited at a lower rate than other domains, such as Technology Acceptance and IS business value. It appears reasonable that the difference between domains is to some degree accounted for by the circumstance that the aforementioned domains are cornerstones of our disciplines: some of these domains have attracted more research which might cite corresponding literature reviews, and these domains might exhibit a higher citation density in general (Garfield 2006). These varying levels of average citations for different domains provide base rates for assessing the scientific impact of literature reviews relative to literature reviews in other domains. For example, a literature review which has attracted 250 citations is among the top-5% if it was published in software development, while a LR with the same number of citations does not make it into the top-20% in the domain of technology acceptance – a noteworthy distinction for evaluating the quantitative impact of literature reviews and for allocating scientific credit to its authors.

The results of the methodological characteristics might be surprising – documenting the search coverage results in higher scientific impact while conducting a meta-analysis (or using the label "systematic review") results in lower scientific impact. These results should be discussed in more detail. First, documenting the search coverage, which is a common recommendation in methodological guidelines (vom Brocke et al. 2015; Webster and Watson 2002), is a strong predictor of a high scientific impact and it is robust with regard to model re-specification and sample selection. Interestingly, this effect is significant although some of our senior scholars tend to rely more on their experience in the domain than on following an explicit methodology for searching the literature (vom Brocke et al. 2015). We speculate that documenting the search coverage – an essential characteristic of methodological quality, which allows researchers to assess the completeness and rigor of literature reviews – is valued by other authors who need a "*reliable basis for follow-on research*" (Kitchenham et al. 2011).

Second, compared to qualitative or narrative literature reviews and in stark contrast to some other disciplines, our results show that meta-analyses –as a particular type of systematic reviews (Patsopoulos et al. 2005; Schultze 2015) - have a lower impact on IS research. Thereby, our study is the first to uncover

differences between the IS field and its reference disciplines, such as the health sciences[6] (Patsopoulos et al. 2005), and management (Judge et al. 2007). In these disciplines, meta-analyses have consistently been found to yield a higher scientific impact than narrative reviews and other research methodologies. In fact, Judge et al. (2007) observe a tendency that meta-analyses are nominated for best-paper awards in management simply because they are expected to have a higher impact. As meta-analyses have a negative scientific impact in IS (compared to other reviews), they are less likely to be among the seminal articles which have a dominant impact on our discipline and are therefore selected as best paper nominations. In this context, our results show that meta-analyses and SLRs have a lower scientific impact compared to the health sciences – this suggests that careful attention is required in adapting meta-analyses and the SLR methodology to the IS field. Specifically, some IS research domains might simply be less "amenable to meta-analyses" (Cooper et al. 2009, p. 516; Hwang 1996; King and He 2005; Oates et al. 2012; Oates 2011; Tate et al. 2015)

Third, claiming to be a systematic literature review (SLR) is a predictor of lower scientific impact. Our analyses show that claiming to be a SLR does not correlate with domain expertise – this suggests that the lower impact of SLRs cannot be attributed to a preferred use by junior scholars, who are less experienced or have a lower reputation compared to senior colleagues. One explanation for the seemingly paradoxical results – with documentation of the search process having a positive impact and adopting a systematic approach having a negative impact – is that IS scholars value the documentation of the search coverage more than subsequent steps of a systematic methodology, such as quality appraisal and quantitative aggregation of empirical results. Another explanation, could be that SLRs are associated with the evidence-based practice paradigm and that the focus and impact of SLRs on practice is stronger than the impact on research.

Finally, and beyond the methodological characteristics, our study has included the (epistemological) goal of a literature review as a factor of its scientific impact. Interestingly, there is no evidence that reviews which go beyond a synthesis by identifying research gaps or developing a research agenda, have a higher scientific impact. This might seem at odds with prominent editorial recommendations to guide further research (Rivard 2014; Rowe 2012, 2014), and suggestions that the relevance dimension of a literature review is useful to explain its influence on research (Templier and Paré 2015). In fact, it appears quite reasonable that a rigorous review pursuing an irrelevant goal "*would have low value for its audience*" (Templier and Paré 2015). But our results might also indicate that scientific impact depends not on the pure existence but more on the quality of the research gaps or the research agenda. While some literature reviews might provide low quality guidance (e.g., by including superficial research gaps to satisfy a reviewer), other authors might leverage their expertise and provide guidance and insights which influence a whole research stream. Consequently, we argue that – although the goal of a review is not a significant predictor of scientific impact according to our high-level coding scheme – it is not irrelevant. In fact, we would encourage further investigation into the quality of the goals that yield superior scientific impact.

Conclusion

Our study contributes to IS research by identifying key drivers of scientific impact of standalone literature reviews at the journal, the author and the article level. While our results confirm that there is a strong effect on the journal level, they provide more actionable insights on the author and article level. For prospective authors who want to achieve a high scientometric impact of their standalone literature reviews, our results suggest that it is strongly advisable to gain domain-specific experience by conducting other research before embarking on the journey to write a literature review. In addition, there are positive effects of collaborating in small teams and, in case of single authorships, of soliciting external conceptual feedback. Finally, regarding the methodological approach, it pays off to document the search coverage, but developing a systematic literature review or a meta-analysis should not be expected to yield exceptional scientific impact, such as in the health sciences. These strong inter-disciplinary differences – with meta-analyses having a substantially lower scientific impact in IS than in its reference disciplines – also deems relevant for our methodological discourse on standalone literature reviews.

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[6] We include the health sciences as a reference discipline because it has influenced the methodological discourse on literature reviews in IS (Boell and Cecez-Kecmanovic 2015a, 2015b; Oates 2015).

Notwithstanding its contributions and implications for prospective authors, our study has its limitations, some of which present opportunities for further research. First, to rule out other rival explanations for our results and to improve internal validity, additional factors from extant scientometric research should be included in future studies, such as author impact and the reputation of the authors' institution (Judge et al. 2007; Tams and Grover 2010). Second, while our study makes extensive use of robustness analyses, it should be explored whether a more detailed measurement of our factors and of scientific impact yields even higher explanatory value. For example, our results suggest that there is no difference between the impact of literature reviews which identify research gaps and those which do not. Advances in measuring the quality of research gaps or research agendas might help us to test the hypothesis of whether the quality of research gaps (e.g., are they identified reliably, is it possible to close them) determines the scientific impact of literature reviews. Similarly, the citations – our measure for scientific impact – could be analyzed qualitatively, for example, by investigating how subsequent research has exploited the epistemological value of LRs. This might yield insights into whether the value of literature reviews is really used or whether it is of peripheral importance to a large percentage of the citing articles (Bornmann and Daniel 2008; Montori et al. 2003). Finally, there are alternative explanatory approaches which deserve to be considered. For example, there might be exogenous factors, such as the peer-review process that – mediated through deterrent and selective effects on the authors who write and submit literature reviews – affect the scientific impact of literature reviews. Specifically, influential senior scholars might be underrepresented because they have more information on the time and effort required to publish a literature review. Furthermore, the impact of literature reviews might also depend on its position within the discourse of our scientific community: it might depend on the fit with the predominant paradigm (Wall et al. 2015) or on how useful the literature review is to justify the knowledge claims of subsequent research articles (Cozzens 1989). The impact of a literature review might alternatively be measured in terms of coverage in social research networks (Kim 2012; Shema et al. 2014) or frequency of downloads (Lippi and Favaloro 2013), and it may also pertain to teaching and practice (Swanson 2014). In fact, studying the impact of literature reviews on different audiences might show that – as suggested by a common reference to evidence base practice - systematic literature reviews and meta-analyses in IS do have an important impact on practitioners. Overall, we hope that the insights of this study turn out to be useful for prospective authors and for our methodological discourse on literature reviews.

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