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www.litbaskets.io, an IT Artifact Supporting Exploratory Literature Searches for Information Systems Research

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Full Paper

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Abstract

Information Systems (IS) researchers currently lack an obvious place to start their literature searches. Existing tools suffer from being either too narrow in their coverage of existing research, leading to an insufficiency effect (low recall); or they are too encompassing, leading to an impracticality effect (low precision). From 11 listings of IS-related journals, we identify a set of 1,042 journals receptive to IS research. We introduce a web interface that allows searching for literature across most of these journals. The search tool enables researchers to narrow or widen the focus of searches, thus allowing researchers to optimise the precision-recall trade-off of their literature searches. We provide an evaluation of our artifact and discuss the relevance of our artifact for exploratory literature searches. Our artifact seeks to facilitate knowledge claims in IS research based on a shared body of knowledge beyond the AIS basket of eight journals.

Keywords: Literature Search, IS Journals, Literature Reference Database, Bibliometrics, Seniors Basket of Journals

1 INTRODUCTION

Identifying relevant literature to understand the current state of knowledge is an important endeavour for any research project in order to successfully argue for the relevance of its contribution (Boell and Hovorka 2019; Hovorka and Boell 2015). Moreover, stand-alone literature reviews have received considerable attention in IS in recent years (Boell and Cecez-Kecmanovic 2014; Paré et al. 2015; Tate et al. 2015; vom Brocke et al. 2015; Webster and Watson 2002). Searches in databases – such as the AIS e-Library (AISeL), Scopus, Web of Science (WoS), Google Scholar – are one important means for identifying earlier research to be included in literature reviews (Greenhalgh and Peacock, 2005).

Good academic practice involves the documentation of completed literature searches. However, it is not currently clear where IS scholars should start looking for literature. While there is the AISeL, it only covers few IS journals, currently not even allowing a search through what is published in the AIS Senior Scholars' Basket of Eight journals (B08). In contrast, many disciplines have established literature reference databases that serve as a starting point when looking for existing research. For instance, Psychology researchers generally begin looking for literature in Psycinfo, indexing around 2,500 journals; Medical researchers would start in Medline, indexing around 5,200 journals; and in Information Science, LISTA selectively indexes around 600 journals. By comparison, the AISeL covers 15 journals, only 2 of which are included in the B08. Our research is thus motivated by the lack of a simple search tool that provides a starting point for IS researchers when they embark on their journey of identifying existing research of relevance to IS.

We develop an artifact that supports IS researchers in undertaking exploratory literature searches (Bates 1989; Marchionini 2006; Savolainen 2017). While the B08 serves well as an aspiration for publication, limiting the literature identification process to only what is published in the B08 ignores many relevant articles published outside of it. This is what we, in this paper, call the *insufficiency effect*. Besides a narrow search in the B08, IS researchers frequently use large-scale multidisciplinary literature reference databases for their searches such as Google Scholar, Scopus or WoS. These databases, however, generally cover tens of thousands of journals, many of which publish research of very little relevance to IS researchers. Researchers are therefore often overwhelmed by a huge number of so called 'false positives' (Larsen et al. 2019). This makes it difficult to make sense of the huge volume of retrieved documents in a feasible amount of time, something we call in this paper the *impracticality effect*. This paper engages with the need to balance between the insufficiency effect and the impracticality effect.

Examining journals appearing across eleven listings of IS journals, we develop an extensive set of 1,042 journals whose at least partial relevance to IS research has been previously established. Ranking these journals by how often they are included in multiple journal listings, we identify a means through which literature searches can be conducted by narrowing and widening the focus of searches. Setting up an open source project, we build an IT artifact for the IS community that enables searching though these journals using the Scopus database. In the spirit of open source we propose that the literature search artifact available at www.litbaskets.io be refined by the collective effort of the IS community.

2 LITERATURE REVIEW AND LITERATURE SEARCHES

As the IS discipline has matured, recognition of the need to stock of existing IS research has also increased (Boell and Cecez-Kecmanovic 2014; Tate et al. 2015; vom Brocke et al. 2015; Webster and Watson 2002). There are different types of literature reviews that serve different purposes including theory development, providing an overview over a research area, and detailed analysis of a particular effect in a meta-analysis (Paré et al. 2015). Such literature reviews use various approaches for identifying relevant publications to be included in the review, ranging from keyword searches in databases, citation tracking of relevant papers, analysis of bibliographies, to serendipitous encounters and suggestions and advice by colleagues (Greenhalgh and Peacock, 2005).

In recent years in particular so called systematic or structured approaches have gained popularity in IS (Boell and Cecez-Kecmanovic 2015). As part of this trend, we see an increase in literature reviews that concentrate their efforts in identifying earlier IS research on the B08 and leading conferences in the field: e.g. "we restrict our scope to the eight journals included in the AIS Senior Scholars' Basket of Journals" (Schuster et al. 2018, p. 6); "we focused on the widely acknowledged AIS Senior Scholars' Basket of Journals" (Winkler and Wessel 2018, p. 4); "we focused on articles published in the basket of eight" (Diederich et al. 2019, p. 1553). However, focusing on only few leading outlets for literature identification is problematic as Larsen et al. (2019) highlight:

"Like the blind men, we may focus on the voices of manuscripts at an arbitrary set of 'top journals', which often eliminate manuscripts that challenge dominant theory, have unsupported hypotheses or

nonsignificant findings and thus did not clear the hurdles of the small set of editors and reviewers at top journals." (Larsen et al. 2019, p. 888)

Accordingly, much relevant existing knowledge may not be published in top tier journals such as the B08. Nonetheless, findings of such research are relevant and should inform the generation of new knowledge. While much is to be learned from an exceptional piece of research published in a top tier journal, other journals also make important contributions to the knowledge of the field. One may even go as far as arguing that an inward gaze and a sole focus on a few leading outlets can, in the long run, be detrimental to the intellectual development of the discipline as controversial and unusual ideas are sidelined in the academic discourse (Boell and Hovorka 2019; Larsen et al. 2019). However, such ideas can drive innovative approaches and new thinking about phenomena (Alvesson and Sandberg 2014).

Besides the problem of literature reviews taking a too narrow focus, researchers also learn more about the existing literature as they engage in the literature review process (Boell and Cecez-Kecmanovic 2014). Bates (1989), Marchionini (2006), Savolainen (2017) and others have thus emphasised the exploratory nature of literature searches. As He et al. (2019) put it

"Searchers pick up pieces of information as they navigate through an information space. In this evolving process, searchers acquire new knowledge and change their perception of search tasks through their interaction with the information space" (p. 844).

For instance, as researchers engage with the existing literature they will discover different theories, concepts, methodologies, frameworks, models, or constructs, associated with specialised vocabulary or phrases that then can be used to further refine the literature identification process (Boell and Cecez-Kecmanovic 2014). However initially, when researchers delve into the literature discovery process, they are often not familiar with such specific vocabulary useful for locating highly specialised literature. At these points, researchers often need to use general vocabulary as search terms in order to describe the phenomena of interest to them. However, when searching with general vocabulary in a large database often many irrelevant documents will be retrieved. Our research is thus motivated by two aspects:

(1) The first motivation of our research is to addressing the problem of literature reviews that are taking a too narrow focus when considering earlier published research, which we call the *insufficiency effect* in the coverage of existing literature.

(2) The second motivation for our research is to address the need of researchers to interactively manage the amount of search results retrieved in response to a query in order to deal with what we call the *impracticality effect*.

3 WHAT IS AN IS JOURNAL? — Identifying a Set of IS Journals

IS as a discipline has many interests thus making it often unclear where IS research begins and where it ends. This, however, can make it difficult to identify what journals outside of the B08 are publishing research of relevance to IS. Before building a search artifact we thus first needed to identify a suitable set of sources through which a literature search should be conducted. We decided to focus on journal articles as a starting point since they are generally considered the primary research output of completed IS research projects. We further believe that existing listings of IS journals offer a suitable starting point for our purpose.

In order to identify journals that are of current interest to IS we decided to use any listing or ranking of IS journals published in 2008 or later. For those interested in earlier journal rankings see, for instance, Gillenson and Stefford (2008) or Walstrom and Hardgrave (2001). Overall, we found eleven such journal lists from which we identified journals (Table 1). Importantly, our focus here is not on the alleged quality of journals (Lewis et al. 2007; Lowry et al. 2013) or the diversity of editorial boards (Burgess es al. 2017; Cabanac 2012), but simply on the journals considered.

One well-known journal list is the one published by the Association for Information Systems (AIS 2011). In addition to the B08, the AIS listing also includes journals nominated by various special interest groups (SIGs) of the AIS. For instance, *Information and Organization* and *Decision Support Systems* are nominated by multiple SIGs as one of their top 5 journals. All together the AIS thus introduces a list of 55 unique journals receptive to IS research (AIS 2011). Beyond the AIS list there are other reputable lists of IS journals. Some of these listings are used for research assessment purposes, such as the Academic Journal Guide by the UK-based Chartered Association of Business Schools (CABS 2018) and the listing of 177 IS journals by the Australian Business Deans Council (ABDC 2016). In addition, the London School of Economics (LSE) has published an IS journal list (Willcocks et al. 2008); Holsapple (2009) provides a list of 43 journals based on publication behaviour at US public universities; Chan et al. (2015) used a citation based analysis for identifying IS journals; and Stewart et al. (2017) build a list of IS

journals based on the WoS journal category for Computer Science/Information Systems. Furthermore, Scopus also provides three different listings of IS journals. Finally, John Lamp (2004) maintains a listing of IS journals on his website that is regularly updated since 1995 and well recognised within the IS community. For the purpose of our research we only focused on journals listed by Lamp (2004) as active.

Listing	Description	# of journals (% unique)
(1) ABS – Journal Ranking	Ranking journals from 4* (best) to 1. Aims to show "where the best work in their field tends to be clustered". Based upon peer review, editorial and expert judgements and citation statistics.	93 (7%)
(2) ABDC / ACPHIS	Ranking journals from A* (best) to C. The listing for IS is identical to the listing provided by the Australian Council of Professors and Heads of Information Systems (ACPHIS).	177 (10%)
(3) AIS	Journals nominated by the AIS "college of senior scholars" including journals nominated by special interest groups (SIGs) as "worthy of broader AIS recognition extending beyond the basket of 8" (AIS 2011).	55 (11%)
(4) WoS based	Based on the WoS category 'Computer Science and Information Systems', extended with additional IS journals in order to identify "a large enough sample to reflect the diversity of IS journals" (Stewart et al 2017, p. 549).	98 (30%)
(5) Citation based	Citation-based analysis with the aim to develop "an objective method to identify a set of core journals" (Chan et al. 2015, p. 239).	35 (0%)
(6) LSE	LSE's ranking to inform promotions decisions and to "advise junior staff and students on where they should publish." (Willcocks et al. 2008, p. 163)	46 (26%)
(7) US Public Universities	Based on the publications of "106 full-time, tenured IS faculty members at [...] top public research universities" in the US (Holsapple 2009, p. 122).	43 (7%)
(8) Scopus IS List	In addition, we added three Scopus "subject areas" designated IS: First, 'Computer Science – Information Systems', oriented towards technical perspectives on Information Systems.	309 (52%)
(9) Scopus MIS List	As above, for: 'Business – Management Information Systems', oriented towards the use of Information Systems for business management.	99 (33%)
(10) Scopus ISM List	As above, for: 'Decision Sciences – Information Systems and Management', oriented towards the use of IS to assist decision-making.	108 (32%)
(11) John Lamp's List	Since 1995 John Lamp actively maintains an Index of Information Systems Journal. The aim of the index is to be exhaustive in its coverage. For our purpose we chose to include all journals listed as active ('current').	681[1] (61%)

Table 1. Overview of IS journal lists.

Taken together, the eleven lists summarised in Table 1 identify 1,042 different journals. Out of the eleven lists, ten contain journals that are unique to only one list leading to a list of 714 journals unique to a single journal listing (Table 1). Thus, when assessing journals as to how often they appear across different journal lists, we see a strong concentration pattern as per Table 2 below. This skewed distribution can be expected as it is in line with what can be observed for most bibliometric phenomena (Wilson 1999): skewed distribution patterns are commonly observed when looking at authors publishing on a topic, publications on a given topic across journals or citations across publications. A possible explanation for the skewed distribution of journals across lists is that they are published by bodies with differing expertise and research orientation, using various methodologies for identifying IS journals. Thus, while there is agreement on core IS journals, IS as a reference discipline (Baskerville and Myers 2002) is connected to the interests of diverse related communities. These communities will be reflected differently across journal lists and hence the composition of journals in different listings will vary. For

[1]John Lamp's list has 684 entries marked 'current'; however, of these, 3 are internally duplicated: *Information, Communication and Society* (appears twice); *International Journal of Information Communication Technologies and Human Development* (appears twice); *International Journal of Technology Diffusion* (appears twice).

instance, Burgess et al. (2017) argue for the existence of sub-communities within IS such as E-commerce, Human-Computer Interaction, Management IS, among others. Likewise, the range of SIGs within the AIS and the range of journals they nominate suggest that there is a range of journals receptive to different types of IS research.

# of lists journal is listed in	11	10	9	8	7	6	5	4	3	2	1	Total
# journals in this set	5	1	1	5	4	13	22	37	72	168	714	1,042
% of total	0.5%	0.1%	0.1%	0.5%	0.4%	1.2%	2.1%	3.6%	6.9%	16%	69%	100%
# indexed by Scopus	5	1	1	5	4	13	22	36	67	148	545	847
% of set indexed	ALL	ALL	ALL	ALL	ALL	ALL	ALL	97%	93%	88%	76%	81%

Table 2. Appearance of journals across 11 IS journal listings and their coverage in Scopus.

Based on the skewed appearance of journals across listings, we see the emergence of a 'core' of IS journals appearing across the majority of lists. For instance, besides the Bo8 only four journals are listed in 8 or more rankings (see figure 1 below). We therefore argue that a list of 51 journals appearing in five or more lists would constitute a suitable set for embarking on initial exploratory literature searches. As the review process progresses or if insufficient number of results are retrieved IS researchers may want to 'cast a wider net', hence literature searches can be further expanded into journals appearing across fewer journal lists.

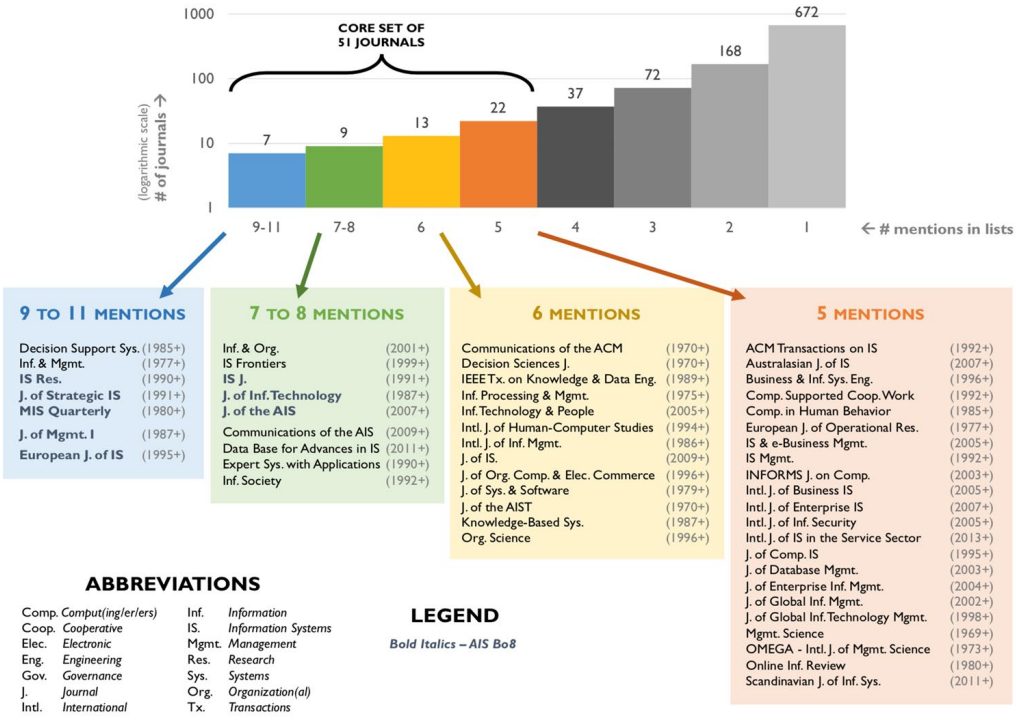

Figure 1. IS journals appearing in 5 or more lists including years covered in Scopus.

4 BUILDING A SEARCH ARTIFACT

To realise the vision of an IT artifact for literature searches, we needed to connect to an existing literature database covering the majority of the journals identified as publishing research of relevance to IS. Our first attempt, based on Google Scholar, was of limited success. While Google Scholar allows users to manually specify the journal to target for a particular search it does not allow this journal filter to compound. We would therefore need to generate a different results page for each journal searched.

As many research universities provide their staff with access to Scopus we thus saw an opportunity to leverage the existing Scopus advanced search functionality for building a tool that enables targeted searches for IS. Advanced searches in Scopus allow the use of a retrieval language which adds compounding conditions to searches beyond keywords. For instance, all resources indexed in Scopus have a unique SOURCE-ID. Thus, an advanced search for 'SOURCE-ID(12402)' will identify *all* articles published in *MIS Quarterly* that are indexed by Scopus. When the SOURCE-ID is combined with keywords one is thus able to search through the title, keywords and abstracts of articles published in *MIS Quarterly*. Furthermore, additional conditions can be included in searches such as document types in order to search only for literature review articles or editorials or year of publication. The ability to search for review articles and editorials are particularly useful for exploratory searches. Literature reviews enable the identification of publications that offer an overview of earlier research. A search through editorials is useful for identifying special issues on particular topics.

To proceed, we first matched the complete set of all journals identified by us (see Tables 1, 2) to their respective SOURCE-ID registered in Scopus. In the case of John Lamp's list a SCOPUS-ID was already provided for most journals for other lists used identifying features such as ISSN or journal titles. This process was facilitated by a relational database system (mySQL) in which we captured other useful attributes such as Scopus coverage years and journal URL, where applicable. Of the 1,042 unique journals identified during the discovery phase, 847 are indexed by Scopus (81%, see Table 2). As shown in Figure 1, all 51 journals included in 5 or more lists are currently indexed by Scopus with coverage in many cases is also going back several decades. Using the relational database of SOURCE-ID for IS journals we developed a web-based graphical user interface accessible at www.litbaskets.io in which users can generate search strings for Scopus' advanced search and customise the selection of journals. IS researchers can thus use our tool to generate elaborated search strings for Scopus advanced search that enables simultaneous search in up to 847 journals publishing research or interest to IS. All users have to do is copy the search string into Scopus' advances search window (Figure 2).

Figure 2. Transferring Scopus Query String into Scopus Advanced Search.

Furthermore, if users are accessing Scopus from within an organisational network that has access to Scopus (e.g. on campus or via VPN) search queries can be directly performed in Scopus. Since we established our own relational database containing Scopus SOURCE-IDs, we can directly generate predictive URLs for specific Scopus searches. As URL length are capped, direct searches work only for sets of ~52 journals. However, as our artifact generates complete search strings using the correct syntax for Scopus' advanced search, simultaneous searching across all 847 journals indexed by Scopus is possible by copying the generated search string directly into Scopus (Figure 2).

Our codebase is open-source and available on GitHub[2] to facilitate the development of our search artifact by the IS community. Our search artifact is tentatively named *Litbaskets* (short for *Literature Baskets*) and deployed at www.litbaskets.io. It has the following features:

- *'Search':* Landing page with a search box and instructions. The instructions encourage the user to think about the nature of their search, and on that basis, make adjustments using the configuration pages (see below). If the user chooses to proceed with the search without customising the settings, the search is performed on our default core set of 51 journals with the user-entered search terms matched against the *title*, *keywords* and *abstract* fields in Scopus. Upon submitting their search and if fewer than 52 journals are searched, the user (assuming they have access to Scopus) is

[2]GitHub repository: https://github.com/blairw/litbaskets

redirected to a Scopus search results page in a new browser tab. In addition, a message appears on www.litbaskets.io with the relevant query string that can be pasted directly into Scopus' advanced search if needed (see Figure 2), and options to execute the same search directly on AISeL or the dblp.org bibliographic library. (Although dblp.org relates to Computer Science and not IS, we provide the option for the cases where the research topic is sufficiently technical to make use of Computer Science literature.)

- *'1. Choose Litbasket':* Configuration page that allows the user to select a 'litbasket', which is simply a predefined set of journals that the search can be performed on. The default litbasket is our 'core' set of 51 journals, which we call 'L5' (mentioned in 5 or more of our reference lists, as per Figure 1). Other litbaskets based on list counts range from the largest, 'L1' (all 847 journals indexed by Scopus) to the smallest, 'L7' (only the 16 journals that appear in 7 or more of our reference lists, as per Figure 1).We also include an even smaller litbasket than L7 which is the 'Bo8' option so that users can, if they deem appropriate, still simply just search through the AIS Basket of Eight.
- *'2. Customise Sources':* Configuration page that allows the user to select or deselect individual journals to make adjustments to the 'litbasket' that they have selected. To assist the user to find a specific journal, this configuration page includes all reference lists from Table 1, as well as the aggregate of the journals from all lists combined. Thus, users can customise a particular journal set from all 847 journals based on the specific needs imposed by their research topic.
- *'3. Apply Filters':* Configuration page that allows the user to use additional Scopus search features. For example, in order to return only current research, there is a default filter that limits search results to only retrieve articles published from 2013 onwards. If older results are desired, researchers can adjust this filter. In addition, Scopus (unlike Google Scholar) indexes articles into document types. This enables filtered searches: either only for literature *review* articles (for an overview of earlier research and how studies are related to each other); or only for *editorials* (for identifying special issues on particular topics).

5 ASSESSING AN ARTIFACT

Two crucial measures for assessing any search system are *recall* and *precision* (Salton and McGill 1983). Underpinning both measures is the criterion of *relevance*, since items retrieved in a search can either be described as addressing ('relevant'), or not addressing ('irrelevant'), what is sought. *Recall* is a measure describing how many of all potentially relevant items available in a search system are retrieved by a search. Ideally, a retrieval system would aim for a recall of 100% to identify all relevant items available. A search system that always reproduces all items available in response to a query would, by definition, have a perfect recall. Nonetheless, such a system would be largely unusable due to the aforementioned *impracticality effect*.

Therefore, *precision* is established as a second measure of the exactness of retrieval systems. This measure assesses how many of the results retrieved by the system are actually relevant. Ideally, a perfect retrieval system would aim for a precision of 100% if, in response to a query, the system only showed users documents that are relevant to them. However, in practice, attempts to achieve high precision result in too few results, as per the aforementioned *insufficiency effect*. This is the recall-precision trade-off relationship (Buckland and Gey 1994), wherein an increase in recall generally comes at the expense of precision, and searches with high precision will generally yield a lower recall. Figure 3 visualises the recall-precision trade-off, and how it leads to the impracticality effect and the insufficiency effect.

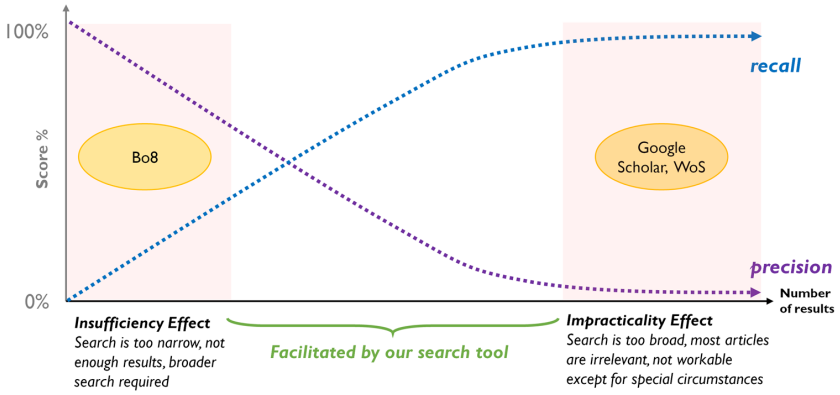

Figure 3. How www.litbaskets.io manages the recall-precision trade-off.

To exemplify the usefulness of www.litbaskets.io for dealing with both the insufficiency effect (when too little literature is found) and the impracticality effect (when researchers are overwhelmed with too many results), we conduct some exemplary searches. Since the actual judgement of whether a paper is relevant will depend on what a researcher seeks to achieve, we chose to use the number of documents retrieved as a proxy for judging how encompassing the results retrieved by our artifact are in comparison to existing alternatives. To do this, we selected four broad search terms that we believe are representative for what may be initially used by researchers conducting exploratory searches (Table 3).

Search Term	AIS Bo8	AISeL	Litbaskets.io Core Set ('L5')	Litbaskets.io Full Set ('L1')	WoS	Google Scholar
blockchain	4	154	51	692	2,974	~24,100
crowdfunding	25	144	77	204	1,302	~20,400
e-health	2	135	104	830	6,187	~78,900
outsourcing	63	243	338	1,452	18,338	~84,300

*Table 3. Number of results for different search tools using example searches based on title, abstract and keywords and publication year > 2013.*Searches in Google Scholar could not be limited to abstracts, titles, keywords only.*

As aforementioned, relying on a set of 'top journals' is problematic when conducting literature reviews. Further looking at the number of documents retrieved using titles, abstracts and keywords for the AIS Bo8, it is seems that for many searches too few documents are retrieved for a comprehensive literature review. When limiting the search to titles, abstracts and subjects in the AISeL the number of documents retrieved are more promising. However, looking more closely at the results almost all of them are conference papers. We thus believe that the AISeL can offer a good additional resource to litbaskets.io for identifying conference papers. In contrast, the number of search results retrieved from Web of Science (WoS) and Google Scholar indicate an impracticality effect as researchers would have to traverse through thousands of documents of which many will be irrelevant to the research topic.

While the usefulness of the ability for IS researchers to search through a specific set of IS journals should be evident, the number of results for www.litbaskets.io further exemplifies this. As can be seen in Table 3, users are able to interactively manage the focus of their literature searches and thereby control the number of documents retrieved. Our core set ('L5') in Table 3 is for searches across journals listed in Figure 2, i.e., those appearing in the majority of all eleven of our reference lists. As the range of journals through which a search is conducted increases, so does the number of documents retrieved. This is illustrated by the increase in the number of documents retrieved for the full set of all 847 journals indexed by Scopus. Thus our artifact allows researchers to manage the recall-precision trade-off as searchers can increase the number of journals if the recall in response to their query is too low. However, too many documents are retrieved for an initial engagement with the literature researchers can easily apply filters such as 'review articles only' or reduce the number of journals through which a search is conducted.

6 DISCUSSION

6.1 Contributions

The contributions of our research are related to the bibliometric work underpinning the creation of our list of IS journals as well as the IT artifact we created. Firstly, our artifact contributes an important new means for discovering IS knowledge. Many established disciplines have a primary resource for discovering publications, yet no comparable resource exists for IS. Our tool thus addresses an important need as discipline-specific literature reference databases fulfil notable functions: (1) They make literature accessible through searches; (2) They support researchers in making knowledge claims based on a disciplines discourse by ensure good coverage of established knowledge; (3) They select specific sources to filter out predatory journals and any sources not central to disciplinary knowledge.

Moreover, by enabling a search through an extensive set of journals in which research of relevance to IS may be published, we enable IS researchers to improve the effectiveness of their literature searches. Recall and precision and therefore the effects of insufficiency as well as the impracticality are related to both the range of sources considered for a literature search as well as the search terms chosen for the search. We manage and optimise *precision* by reducing the sources considered for searching, from the broad coverage offered by large multidisciplinary sources such as Google Scholar or WoS to a more

targeted and specific set of journals. Furthermore, Scopus further supports the literature identification process as it allows researchers to employ elaborate search strategies such as successive fractions or snowballing through its 'refine search' function (Boell and Cecez-Kecmanovic 2014). Hence, researchers are less likely to be overwhelmed by huge numbers of irrelevant documents. We also manage and optimise *recall*, as searches through a more targeted set of journals enable a more thorough search within this set, for instance, by using single word searches or common language in addition to specialised terminology. Hence, researchers are less likely to miss relevant publications as they can use more inclusive search terms in their searches without risking that too many irrelevant documents ('false positives') are retrieved.

Our tool therefore is useful to IS researcher in three ways: (1) By enabling targeted searches and filters, we empower researchers to quickly identify a highly relevant article to be added on top of their reading list. Based on the reading of such an article, researchers discover further relevant terminology, constructs, concepts, theories, models, etc. that then inform further literature searches (Boell and Cecez-Kecmanovic 2014); (2) By using our tool, researchers can also compile lists of relevant articles related to a topic that provide them with an overview of what is well known and researched within the wider IS community, thus better frame the contribution of their work to the disciplinary discourse (Boell and Hovorka 2019); (3) By enabling a targeted search, our tool supports editors by facilitating identification of potential reviewers.

Finally, the methodology we used for creating the journal list demonstrates that skewed distributions underpinning bibliometric phenomena also apply to how frequently journals are mentioned across journal listings. In other words, inclusion of journals in journal lists follows a similar distribution pattern as, for instance, citations to articles. This finding has implications for journal analysis in bibliometric studies more widely as it questions the validity of studies underpinned by a single journal list. For instance, Stewart et al. (2017) make important observation about the cohesion of the IS discipline. Yet when looking at the set of journals used for the analysis, 30% of the 98 journals did not appear in any of the other ten journal listings identified by us. Likewise, Burgess et al. (2017) exploration of the diversity of editorial boards in IS journals was based on the CABS journal listing. However, the CABS ranking not only includes 6 journals not mentioned in any of the other journal lists, it also excludes most journals of our journal set of 51 journals appearing in the majority of all journal lists. Hence our research encourages caution when looking at findings from earlier bibliometric studies not only for IS, but for bibliometric studies related to journals in general.

6.2 Limitations and Next Steps

Although our search tool enables most IS researchers to begin comprehensive literature reviews on most IS topics, it is not perfect and has some limitations. Firstly, users must have access to Scopus. Secondly, while we identified an extensive set of IS journals, depending on the research undertaken additional journals should be searched. Thirdly, our search tool enables searching though journal article and excludes other publications such as conference proceedings or book chapters. These limitations do, however, have mitigating factors. Firstly, Scopus access is very common. We inspected the institutional login page for Scopus and found that, for example, every university that has ever hosted the Australasian Conference on Information Systems (ACIS) currently has institutional access to Scopus (Scopus 2019). Secondly, we argue that by starting with journal papers – i.e., documentation of completed research projects – in their first literature review iteration, IS researchers can have a better appreciation for conference papers that they discover in later iterations. Furthermore our artifact can be paired with AISeL that offers much better coverage of IS conference, but lacks coverage of IS journals. We thus recognise the value of potentially including additional databases in future to reduce the high level of reliance on Scopus, and we are currently investigating the technical feasibility of connecting to APIs available for dblp.org and Google Scholar.

One of the reasons for making our codebase entirely open-source is to encourage other IS academics to contribute, such that the project as it is 'by the community, for the community'. We take inspiration from other significant open-source projects started in academia and a view that the IS community has a critical mass of members who possess the programming skills required to participate. For instance, we would welcome an initiative to extend the coverage of www.litbaskets.io to also include the proceedings of leading IS conferences in its searches.

7 CONCLUSION

To make a meaningful contribution, research needs to be framed in relation to the prevailing discourse of an academic community (Boell and Hovorka 2019; Hovorka and Boell 2015). The literature identification process is central for understanding share knowledge and hence for expressing new

knowledge claims. However, unlike Medline for Medicine or Psycinfo for Psychology, there is currently no database that IS researchers can go to as a starting point for conducting exploratory literature searches, leading to either too little literature to review (the insufficiency effect) or too much literature to review (the impracticality effect). Our study addresses this deficit by identifying a set of journals that can be considered as receptive to IS research. By building www.litbaskets.io as an interface for searching through these journals we hope to not only make literature searches more effective for IS researchers, but also to facilitate the IS discipline uniting around a core of shared knowledge.

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