
Literature Review Papers: Discourse Pertains to Searching and Selecting Literature Review Papers

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Abstract

The search and selection of documents included in literature review papers (LRP) should be explicitly reported on. This paper presents two approaches for reporting the methodology for doing this: a basic approach and a reasoned approach. The basic approach includes reporting databases(s), keywords, search strings, snowballing, the selection of documents, presenting an overview of documents included and reporting additional selection criteria (if applicable). The reasoned approach adds to the basic approach (what was done) by explicitly explaining the motivation for choices and showing the selection process graphically (why it was done). Viewing the two methodologies as choices rather than exclusive possibilities is imperative. We recommend that authors of LRPs depart from these approaches and modify them where appropriate. The important lesson is that authors should be explicit about the approach adopted, as this enables the reader to understand the thinking behind the LRP and the conclusions drawn.

Introduction

Literature review papers (LRPs) significantly contribute to the output of scientific research. The authors effectively orient readers to a particular field of study by furnishing a comprehensive survey of the existing body of knowledge. In academic literature reviews, it is expected that the author not only presents a comprehensive overview of the existing literature but also contributes to the field by identifying gaps in research, proposing a research agenda, evaluating the methods or theoretical frameworks employed, or discussing the practical implications of the findings. Van Wee and Bannister (2016) have suggested various ways to enhance the value of a literature review paper.

Literature review papers (LRPs) have become a crucial component of the research process due to their ability to furnish an easily accessible, current, and pertinent overview of a research subject. The aforementioned resource serves as a highly valuable point of departure for novice researchers searching for inspiration and information about a given topic. However, it is

important to note that experienced researchers transitioning to a novel topic or revisiting a previously explored topic after a hiatus would also benefit significantly from engaging with LRPs. Numerous intriguing research inquiries are at the intersection of diverse disciplines and literatures. Presently, there exists a vast amount of knowledge accessible in various formats. A superior Literature Review Paper (LRP) enables one to approach a subject matter from the vantage point of a recognised authority, thereby facilitating the process of gaining entry into that particular topic. This is due to the fact that a significant portion of the essential preliminary research has already been conducted. The Long-Range Plan (LRP) has the potential to illuminate prospects and promising avenues of investigation (i.e., the research agenda), while also revealing possible dead ends. Literature reviews play a crucial role in establishing the fundamental basis and contemplation of research subjects, and they are a significant component of the research methodology.

Until recently, it was relatively typical for an LRP's technique to be not entirely transparent. This finding is unexpected as there exists a widespread consensus that scientific investigations ought to be replicable. In 2016, we wrote a paper to provide authors of LRPs guidance on how to do the research for an LRP, and how to write their paper (Van Wee & Banister, Citation2016). Since then (to March 2023), this paper has been downloaded over 480,000 times (almost eight times more than the second most obtained paper in Transport Reviews) and cited over 250 times (in SCOPUS), and it has proven to be helpful to people who want to write a literature review paper.

In that paper, we did not explicitly provide guidance on reporting on the methodology used in a condensed and structured form. In this paper, we propose two approaches for reporting the methodology, labelled 'Basic Approach' and the 'Reasoned Approach'.

Our area of specialisation lies in the field of transportation. The way LRPs are presented differs between disciplines. LRPs in transport are similar to many other areas of social science, such as geography, psychology, innovation sciences, economics, and environmental sciences, and to the best of our knowledge also in areas like information systems, decision support, and

management. Nevertheless, LRPs pertaining to health science frequently exhibit dissimilarities compared to those in social science domains.

There are two techniques for reporting LRP methodology.

Both approaches share a similar thought process, however, the Reasoned Approach provides a more comprehensive account (Table 2) of the rationale behind the chosen pathways, whereas the Basic Approach (Table 1) solely outlines the six elements that were addressed. Both methodologies share common elements, including databases, keywords and search strings, snowballing, selection, results, and supplementary criteria. Further insights on searching and selecting sources can be found in academic literature such as Moher et al. (2009) and Van Wee and Bannister (2016).

Table 1. The basic approach for reporting the methodology of a literature review paper

Elements	Basic approach	Example
Databases	List the database(s) used for the search of papers	SCOPUS and Web of Science
Keywords and search string(s)	List the keywords and search string(s)	(transport*) AND (health OR exercise)
Snowballing	State if you applied forward and/or backward snowballing	We applied forward and backward snowballing departing from the references listed in Table [table number].
Selection of documents	State the principles on which you selected documents	We selected papers based on titles, keywords and abstracts.
Results: documents found	Report the documents selected	A table reporting author(s), year of publication, topic, geographical scope, method(s) used
Additional selection criteria (if applicable)	Make explicit. For example, language, time frame, geographical scope	We include English language documents only, published since 1990 related to the topic in OECD countries

Table 2. The reasoned approach for reporting the methodology of a literature review paper.

Elements	Reasoned approach	Example
Databases	List the database(s) used for the search of papers	SCOPUS and Google Scholar
	Explain your choice	We first searched documents in SCOPUS. Because the topic of this LRP, Artificial Intelligence, is rapidly evolving and academic publications might miss recent trends, we additionally searched for papers published in the past 24 months via Google Scholar.
Keywords and search string(s)	List the keywords and search string(s)	(transport*) AND (health OR exercise)
	Explicitly discuss the motivation. For example, discuss synonyms, different terms in different research areas that have about the same meaning.	Because not all relevant papers use the term 'accessibility' we also searched for literature using related terms, i.e. 'connectivity' 'access' and 'proximity'.
Snowballing	State if you applied forward and/or backward snowballing	We applied backward snowballing departing from the references listed in Table [table number].
	Explain your choice	Because the first paper in this area were published less than 6 months before the date of searching, we only applied backward snowballing.
Selection of documents	State the principles on which you selected documents	We selected papers based on titles, keywords and abstracts.
	Include a table showing, or figure visualising how many papers were added/removed after each selection step	See Le et al. (2022) (Figure 1) and Table 1
Results: documents found	Report the documents selected	A table reporting author(s), year of publication, topic, geographical scope, method(s) used
Additional selection criteria (if applicable)	Make explicit. For example, language, time frame, geographical scope	We include English language documents only, published since 1990 related to the topic in OECD countries
	Explain your motivation	We only included documents published since 1990 because the methodologies used before that data are outdated – this would need to be supported by a key reference

This discourse delves into the three paramount subjects, specifically the process of database selection, formulation of search strings, and the criteria employed in selecting publications, with greater elaboration. It is imperative to explicitly state the databases utilised for document search within a Literature Review Paper. The prevalent databases in academic research include Web of Science (WoS – www.webofscience.com), SCOPUS (www.scopus.com), and Google Scholar (<https://scholar.google.com/>). The Web of Science (WoS) database contains a greater number of papers from earlier time periods compared to the SCOPUS database. Additionally, SCOPUS exhibits a slightly higher level of inclusivity. In addition to papers published in ISI journals, SCOPUS incorporates other sources, including academic publishers' books. Google Scholar incorporates "grey literature," which refers to materials and research created by organisations outside of conventional commercial or academic publishing and distribution channels, as defined by Wikipedia. To obtain comparative insights between databases, scholarly works such as those authored by Singh et al. (2021) or Martín-Martín et al. (2021) can be consulted.

The academic literature may experience delays in certain aspects due to the practise of authors initially presenting their work at conferences or in reports, and subsequently revising and submitting it to journals. The comprehensive reviewing, revising, and publishing procedure can extend beyond a year. As a result, it is possible to track more recent research more

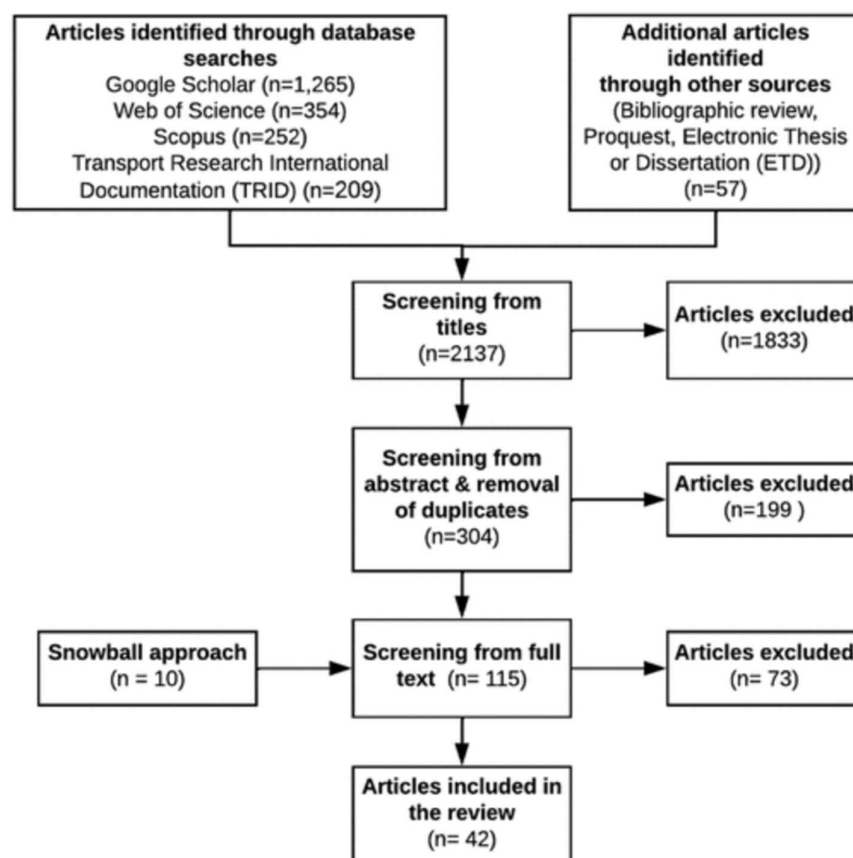
effectively using Google Scholar compared to SCOPUS or WoS. In the case of swiftly developing subjects, such as Artificial Intelligence, Machine Learning, or Mobility as a Service, it may be advantageous to explore not only SCOPUS and/or WoS but also Google Scholar, as of the year of this manuscript's composition, 2022. It is advisable to utilise Google Scholar for non-academic publications, including policy documents.

Regarding the search queries, it is necessary to document the keywords utilised. It is not recommended to utilise phrases such as "we employed keywords such as [list]" or expressions like "we utilised [A, B, ...] as keywords and their synonyms" in academic writing. It is necessary to specify the particular synonyms being referred to. For the sake of reproducibility, it is recommended to copy and paste the exact search string used. In the context of paper selection through search strings, the Reasoned Approach recommends the utilisation of a graphical representation to demonstrate the number of papers that were included or excluded at each stage of the selection process. Ensuring the explicitness of all search strings is crucial for reproducibility of the analysis and for reflecting on the significance of the chosen keywords and search strings. In certain instances, the process may be uncomplicated, while in other cases, exploring alternative testing methods could prove advantageous in establishing the validity of the employed search queries. Furthermore, it is imperative to impose language, temporal parameters, and geographical scope limitations. Such limitations serve to constrain the search process and recognise the boundaries of the authors' expertise. Complete transparency is imperative (refer to Tables 1 and 2).

Figure 1 depicts an instance of the selection process visualisation, as presented in a recent study conducted by Le et al. (2022). The authors conducted an inquiry into the escalation of e-commerce and its influence on individual travel patterns. Their approach involved a methodical identification of relevant literature through database searches and other means. This provided them with a pool of over 2000 potential papers for evaluation. Initially, the researchers employed a methodical approach to curtail the scope of their investigation by scrutinising the titles and abstracts of relevant literature. Subsequently, they refined their search by meticulously examining the complete texts of approximately one hundred articles. Ultimately, 42 papers were incorporated into the Long Range Plan (LRP) after the rigorous selection

process. This was augmented by a limited number of supplementary papers identified through a concurrent snowballing procedure. The transparency and reproducibility of the entire process are logically sound. In numerous instances, a tabular representation that delineates the selection process through multiple steps (rows within the table) can effectively fulfil the task.

Figure 1. an example of the visualisation of the selection process (Le et al.,2022).



Conclusions

The primary assertion is that it is advisable for authors to provide precise details regarding the methodology employed in a Literature Review Paper (LRP), particularly in relation to the document selection process. The whole approach may include numerous further research processes, such as document categorization (e.g., by period and place), interpretation of qualitative and/or quantitative findings, or coding of findings. The explicit reporting of methodological steps is crucial, including the aforementioned steps. However, the

heterogeneity observed in the remaining methodological steps pertaining to literature search and selection is substantial, and it is outside the purview of this paper to propose potential alternatives.

It is important to acknowledge that the two proposed alternatives should not be regarded as the sole methodologies. There are additional possibilities to consider, and the suggested approaches should be viewed as a starting point rather than a definitive plan. Writers of Literature Review Papers (LRPs) have the flexibility to deviate from the aforementioned methods and adapt them to meet their specific needs. As an illustration, the individual could provide a detailed account of the methodology employed to cluster the chosen documents into distinct categories, along with a rationale for the approach.

In the event that researchers have delineated their research procedures, they may delegate the task of replicating the search process and document selection based on the reported methodology to another individual. Ideally, the individual in question would arrive at a comparable selection, and if such an outcome were to transpire, it would serve as a favourable endorsement of the employed methodology. However, it is possible that this step may require a significant amount of time. It is recommended that authors of Literature Review Papers engage in a critical discourse regarding the two proposed methodologies presented. Future iterations of the aforementioned could potentially yield even greater utility, based on the insights gleaned from prior usage.

It is anticipated that the significance of automated searching, selecting, and screening will increase in the forthcoming years. Chai and colleagues (2021) examine the utilisation of Machine Learning in the screening of abstracts. As of the present writing (2022), the utilisation of automated searching, selecting, and screening methods has yet to gain widespread acceptance and implementation within our research domain of transportation, and conceivably, in numerous other fields as well. A recent search conducted on June 8th, 2022 using the SCOPUS database and the search terms "automated searching" and "literature" yielded a total of three results, none of which were deemed relevant to the research inquiry. Conversely, extant resources, such as those found at <http://systematicreviewtools.com/index.php>, suggest that the utilisation of such instruments may experience a surge in popularity. Despite being in its

nascent stages, the utilisation of AI for conducting literature reviews holds promising potential for the future. This is particularly true if forthcoming research endeavours continue to facilitate the advancement of AI for this specific purpose (Wagner et al., Citation2022). In the event that LRPs are authored using artificial intelligence (AI) tools in the future, it is advisable to incorporate a comprehensive account of the employment of such tools in the LRP report. This account should encompass the manner in which the tools were utilised, the rationale behind their usage, and an analysis of the efficacy of the search and selection process. Notably, it should also underscore potential concerns such as the possibility of selection bias. In the event that scientometric techniques are employed, such as clustering or citation pattern identification, it is imperative to provide a clear and comprehensive explanation of the methods utilised in order to ensure their reproducibility.

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