

# Guidelines for Bibliometric-Systematic Literature Reviews - Teaching & Learning Guide

## 10 Steps to Combine Analysis, Synthesis and Theory Development

**This guide accompanies the following article:**

Marzi, G., Balzano, M., Caputo, A., & Pellegrini, M. M. (2025). Guidelines for bibliometric-systematic literature reviews: 10 steps to combine analysis, synthesis, and theory development. *International Journal of Management Reviews*, 27(1), 81–103. <https://doi.org/10.1111/ijmr.12381>

**Read the original article at:** <https://doi.org/10.1111/ijmr.12381>

**Companion website:** <https://www.b-slr.org/>

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### Authors' Introduction

The increasing volume of academic research has made literature reviews essential for advancing knowledge across disciplines. However, traditional approaches to review papers often lack methodological coherence, limiting their capacity to contribute novel theoretical insights.

The IJMR article associated with this teaching and learning guide introduces the Bibliometric-Systematic Literature Review (B-SLR) as a methodological and learning resource combining bibliometric analyses with systematic literature reviews. This framework guides researchers through a structured 10-step process integrating synthesis, analysis, and theory development. The B-SLR framework addresses the methodological fragmentation in review studies, providing a rigorous and systematic pathway for generating impactful theoretical contributions.

The B-SLR framework follows the UNESCO Recommendation on Open Science, emphasising accessibility by being free and open, primarily utilising non-proprietary and free resources. This approach aligns with the principles of transparency and inclusivity, fostering a more democratised access to scientific knowledge. The B-SLR framework supports educational objectives by offering replicable guidelines that enhance the quality and theoretical value of literature reviews. Thus, the B-SLR promotes methodological rigour and creativity, encouraging researchers to develop reviews that challenge existing paradigms and contribute to scholarly debates.

### Authors' Recommended Readings

Alegre, J., Callahan, J., & Iszatt-White, M. (2023). Innovative conceptual contributions—Raising the game for theory-driven reviews. *International Journal of Management Reviews*, 25(2), 233-239.

Breslin, D., & Gatrell, C. (2023). Theorising through literature reviews: The miner-prospecter continuum. *Organisational Research Methods*, 26(1), 139-167.

Colquitt, J. A., & George, G. (2011). Publishing in AMJ—part 1: topic choice. *Academy of Management Journal*, 54(3), 432-435.

Cronin, M. A., & George, E. (2020). The why and how of the integrative review, *Organizational Research Methods*, 26(1), 168-192.

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- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., & Others. (2021a), The PRISMA 2020 statement: An updated guideline for reporting systematic reviews, *BMJ*, 372, n71.
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., & Others. (2021b), PRISMA 2020 explanation and elaboration: updated guidance and exemplars for reporting systematic reviews, *BMJ*, 372, 160.
- Post, C., Sarala, R., Gatrell, C., & Prescott, J. E. (2020), Advancing theory with review articles, *Journal of Management Studies*, 57(2), 351-376
- Torraco, R. J. (2016). Writing integrative literature reviews: Using the past and present to explore the future. *Human Resource Development Review*, 15(4), 404-428.
- Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, 14(3), 207-222.
- van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84, 523-538.
- Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organisation. *Organisational Research Methods*, 18(3), 429-472.

## Useful Links

*B-SLR Companion Website* - A dedicated resource providing additional tools, templates, and guidance for implementing the B-SLR process. <https://b-slr.org>

*VOSviewer Software* – A user-friendly tool for performing bibliometric analyses and creating visualisations of research landscapes. <https://www.vosviewer.com>

*K-Alpha Calculator* - An online tool for computing Krippendorff's Alpha coefficient, essential for assessing inter-rater reliability in systematic reviews. <https://www.k-alpha.org>

*Java Download* - Required software for running VOSviewer and other bibliometric analysis tools. <https://www.java.com/en/download/>

*PRISMA 2020 Checklist* - A widely recognised guideline that provides a checklist for conducting and reporting systematic reviews and meta-analyses, ensuring transparency and replicability in research. <https://www.prisma-statement.org/prisma-2020-checklist>

## Syllabus

The proposed syllabus is adaptable to various contexts, serving a broad audience, including master's students, PhD candidates, and more experienced researchers. The suggested structure can be implemented as a short course or an extended seminar, exploring the B-SLR's 10 steps into 5 sessions representing broader macro-areas of work. Alternatively, it can be delivered in 10 sessions, each dedicated to a specific step of the process.

This syllabus presents a 5-session course designed to guide participants through the B-SLR process, from initial ideation to theorisation. Each session addresses a key phase of the B-SLR, offering practical insights, discussion topics, and recommended readings that align with the framework.

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# **Title of Course:** Conducting a Bibliometric-Systematic Literature Review (B-SLR): A Step-by-Step Guide.

## **Session 1:** Topic Choice and Research Question Formulation

### **Learning Objectives**

- Understanding the importance of selecting a relevant and impactful research topic.
- Learning how to formulate clear and innovative research questions that address critical gaps in the literature.
- Establishing the boundaries of the study, including inclusion and exclusion criteria.

### **Session Description**

Session 1 focuses on the foundational step of selecting a relevant topic and formulating a meaningful research question. These are crucial tasks in crafting a literature review that can advance current knowledge within a selected field. This session emphasises the significance of topic choice, guiding participants through the initial phases of the B-SLR process, where informal literature scanning plays a critical role in identifying research gaps and shaping the study's theoretical contribution.

The session introduces participants to the importance of informal literature scanning, an iterative task designed to enhance familiarity with the chosen research area. This process enables researchers to determine existing gaps and challenges within the literature, refining these insights into a precise and impactful research question. Identifying these gaps defines the study's potential contribution and sets the stage for the review process.

Participants will explore various strategies for literature scanning, including backward and forward procedures, which involve consulting cited references and sources that cite key documents, respectively. These techniques help researchers map the current state of knowledge, identify gaps, and assess the novelty of their proposed questions.

The session further looks into the critical task of establishing inclusion and exclusion criteria for the review, which are essential for defining the study's boundaries, ensuring methodological rigour, and minimising selection bias. By setting clear boundaries early in the process, researchers can create a focused and coherent corpus of literature that serves as the primary foundation for their review. Participants will be guided on how to set these criteria in alignment with the AMSTAR 2 protocol, ensuring that their choices are transparent, justifiable, and agreed upon among the research team.

Additionally, this session will cover key characteristics that a research question should embody to contribute meaningfully to the field: significance, novelty, curiosity, scope, and actionability. A well-crafted research question should address significant challenges, reflect broad concerns within the field, and propose innovative solutions that push the boundaries of existing knowledge. This involves moving beyond incremental contributions to introduce fresh perspectives or new frameworks, challenging established paradigms, and sparking further inquiry.

Participants will engage in exercises designed to help them formulate research questions that balance ambition and feasibility, ensuring that the scope is sufficiently broad to encompass critical aspects of the topic but focused enough for a thorough analysis. Emphasis will be placed on developing questions with practical implications, aligning theoretical insights with potential applications in policy, practice, and further academic research.

By the end of this session, participants will have a solid understanding of the importance of selecting a relevant topic and crafting a research question that advances knowledge in their field. They will be equipped with the tools and strategies necessary to define their study's

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boundaries and establish a strong foundation for the subsequent stages of the B-SLR process.

### **Focus Questions**

#### *Importance of Topic Selection:*

- Why is selecting a relevant and impactful research topic crucial for the success of a literature review?
- What criteria should be used to assess the significance of a potential research topic, and how can these criteria ensure that your review contributes meaningfully to the field?
- How can researchers align their topic choice with broader concerns in the field or societal challenges, and why is this alignment important?

#### *Formulating Research Question(s):*

- What makes a research question significant, novel, and actionable, and how do these characteristics contribute to advancing knowledge?
- How can researchers ensure that their research question addresses a critical gap in the literature rather than merely reiterating existing knowledge?
- What strategies can be employed to balance the scope of a research question, ensuring it is both ambitious enough to make a meaningful contribution and feasible enough to be thoroughly explored?

#### *Identifying Research Gaps:*

- What techniques can be used during the initial literature scanning to identify gaps in the current research landscape?
- How can backwards and forward citation tracking help map the existing literature and identify opportunities for novel contributions?
- What role do bibliometric tools play in refining the understanding of the research area and guiding the formulation of a relevant research question?

#### *Setting Boundaries of the Study:*

- How should researchers define inclusion and exclusion criteria to set clear boundaries for their study, and why is this step vital for methodological rigour?
- What factors should be considered when deciding which documents to include or exclude, and how can these decisions impact the focus and outcomes of the review?
- How can defining clear boundaries during the research question formulation stage help in minimising selection bias in the review?

#### *Ensuring Novelty and Contribution:*

- How can researchers ensure that their research question introduces a fresh perspective or challenges existing paradigms within their chosen field?
- What strategies can be employed to avoid incremental contributions and instead push the boundaries of knowledge meaningfully?
- In what ways can a well-formulated research question pave the way for future academic discussions, policy implications, or practical applications?

#### *Balancing Ambition and Feasibility:*

- How can researchers balance the need for an ambitious research question with the practical considerations of data availability and methodological constraints?
- What are the risks of overly broad or narrowly defined research questions, and how can these risks be mitigated during the formulation process?

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- How does the scope of the research question influence subsequent methodological choices, including literature search and data analysis?

#### *Curiosity and Actionability in Research Questions:*

- Why is it essential for a research question to spark curiosity and generate interest among scholars and practitioners alike?
- How can researchers ensure their research question has practical implications, linking theoretical development with real-world applications?
- What elements should be incorporated into a research question to ensure it prompts further inquiry and builds upon the scholarly conversation?

#### **Suggested Readings**

Colquitt, J. A., & George, G. (2011). Publishing in AMJ - Part 1: Topic Choice. *Academy of Management Journal*, 54(3), 432-435.

Kunisch, S., Denyer, D., Bartunek, J. M., Menz, M., & Cardinal, L. B. (2023). Review research as scientific inquiry. *Organisational Research Methods*, 26(1), 3-45.

Page, M. J., et al. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, 372, n71.

Shea, B. J., Reeves, B. C., Wells, G., Thuku, M., Hamel, C., Moran, J., Moher, D., Tugwell, P., Welch, V., Kristjansson, E., & Henry, D. A., (2017). AMSTAR 2: A critical appraisal tool for systematic reviews that include randomised or non-randomised studies of healthcare interventions, or both, *BMJ*, 358, j4008.

## **Session 2: Data Extraction and Data Cleaning**

### **Learning Objectives**

- Learning how to define search strings and select appropriate databases for literature extraction (e.g., Scopus, Web of Science).
- Mastering data cleaning techniques to refine search results and ensure data quality.
- Understanding the importance of methodological rigor in setting up a reproducible literature base.

### **Session Description**

Session 2 focuses on data extraction and cleaning, which is central to building a reliable and focused literature base for the subsequent stages of analysis, interpretation, and theorisation. This session emphasises the importance of systematically retrieving relevant literature from bibliographic databases, refining the extracted data, and preparing it for a detailed examination in the next phases of the review process. Ensuring the inclusion of relevant contributions while adhering to predefined inclusion and exclusion criteria is vital for maintaining the integrity and focus of the review.

The session begins with exploring search string definition, a key step in which participants will learn to craft effective queries to extract relevant documents from chosen databases. Participants will be guided on decomposing their research questions into individual concepts to create comprehensive search terms. This task includes identifying and incorporating various terminological variations, such as synonyms, abbreviations, and language differences, which are crucial to capturing the full scope of relevant literature. The session will highlight the significance of balancing the breadth of the search query to avoid unintentional exclusion of pertinent documents while ensuring that the search remains manageable and targeted.

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The participants will be introduced to structured strategies for developing search strings, such as using wildcards and Boolean operators, and the potential involvement of expert panels to validate the search terms. They will also explore techniques like snowballing and iterative search adjustments to refine and enhance the query, ensuring it aligns closely with the intended scope of the review. Practical exercises will provide hands-on experience in designing search queries wide enough to encompass all relevant literature while maintaining the specificity required for rigorous analysis.

Following the search string development, the session will transition into selecting appropriate databases for data extraction. Participants will learn to assess different bibliographic sources (e.g. Scopus, Web of Science, Dimensions, and PubMed), evaluating their strengths and limitations based on coverage, indexing criteria, and data extraction capabilities. This section will guide participants in selecting the primary database for their study and, if necessary, cross-validate data using secondary databases to ensure a comprehensive literature base.

The core of the session will focus on the data-cleaning process. Participants will be taught how to systematically screen the extracted documents to align with their inclusion and exclusion criteria, thus refining the initial dataset. The data cleaning stage involves the removal of duplicates, irrelevant documents, and items that do not meet the established boundaries of the review. Assessing each document based on titles, abstracts, and full texts will be emphasised to ensure alignment with the research question and study criteria. Participants will also learn about structured screening techniques, such as the A/B/C logic, which aids in categorising documents based on their relevance and guiding decisions on what to include in the final dataset.

The session will stress the importance of maintaining transparency and reproducibility throughout data-cleaning. Participants will be encouraged to document the search and selection procedures accurately, including the rationale behind excluding certain documents, and to visually represent this process through flow diagrams. These diagrams should outline the number of records retrieved, screened, included, and excluded, providing a clear audit trail of the data preparation process.

The session will also address the importance of consensus when multiple researchers are involved in the selection process. Techniques such as independent screenings and convergence assessments using statistical measures like Krippendorff's Alpha will be discussed, highlighting ways to reduce observer biases and enhance the reliability of the dataset.

## **Focus Questions**

### *Search String Development:*

- What strategies can be employed to develop a comprehensive and effective search string that captures the breadth of relevant literature while maintaining specificity?
- How can you ensure that your search string accounts for variations in terminology, such as synonyms, abbreviations, and linguistic differences, without compromising the quality of the results?
- What roles do iterative search adjustments and expert feedback play in refining your search string?

### *Database Selection:*

- How do the characteristics of different bibliographic databases (e.g., Scopus, Web of Science, Dimensions) influence the selection of a primary database for your study?
- What are the advantages and potential limitations of using multiple databases for literature extraction, and how can these be managed?
- In what scenarios might it be necessary to validate your data extraction across different databases, and what steps can you take to ensure consistency?

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#### *Data Cleaning Process:*

- What are the key steps in the data cleaning process, and why is each step critical for maintaining the integrity and focus of your review?
- How can the inclusion and exclusion criteria defined earlier in the process be effectively applied during the data-cleaning phase to ensure that only relevant documents are retained?
- What methods can be used to identify and remove duplicates, irrelevant documents, and other inconsistencies from your dataset?

#### *Screening and Document Selection:*

- How can structured screening techniques, such as the A/B/C logic, help categorise documents based on their relevance to your research question?
- What best practices should be followed when reviewing titles, abstracts, and full texts to make informed decisions on document inclusion?
- How can disagreements among researchers in the screening process be resolved, and what strategies ensure consensus and consistency?

#### *Ensuring Transparency and Reproducibility:*

- What documentation practices are essential to ensure transparency in your review's search, screening, and selection process?
- How can visual representations, such as flow diagrams, enhance the clarity and reproducibility of your data-cleaning process?
- Why is it important to report the rationale behind excluding seemingly eligible studies, and how can this information be effectively communicated?

#### *Data Quality and Validation:*

- What techniques can be used to validate the reliability of your data extraction, particularly when multiple researchers are involved in the review?
- How can statistical measures, such as Krippendorff's Alpha, be used to assess the agreement among researchers during the screening phase?
- What steps can a single researcher take to enhance the objectivity and quality of the data selection process, especially in the absence of multiple reviewers?

### **Suggested Readings**

- Hiebl, M. R. W. (2023). Sample selection in systematic literature reviews of management research, *Organizational Research Methods*, 22(6), 229–261.
- Marzi, G., Balzano, M., & Marchiori, D. (2024). K-Alpha Calculator–Krippendorff's Alpha Calculator: A user-friendly tool for computing Krippendorff's Alpha inter-rater reliability coefficient. *MethodsX*, 12, 102545.
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., & Others. (2021b). PRISMA 2020 explanation and elaboration: updated guidance and exemplars for reporting systematic reviews, *BMJ*, 372, 160.
- Williams, R. I., Clark, L. A., Clark, W. R., & Raffo, D. M. (2021). Re-examining systematic literature review in management research: Additional benefits and execution protocols. *European Management Journal*, 39(4), 521-533.

## Session 3: Conducting the Bibliometric Analysis

### Learning Objectives

- Understanding bibliometric analysis methods, including citation analysis, co-citation analysis, and bibliographic coupling.
- Using VOSviewer for science mapping, network visualisation, and identifying research clusters.
- Understanding the implications of bibliometric results for literature synthesis.

### Session Description

Session 3 focuses on conducting a bibliometric analysis using VOSviewer, a key step that helps visualise and interpret the structure of the existing literature within a specific field. This session aims to equip participants with the skills to extract meaningful patterns and clusters from bibliometric data, enhancing their ability to represent the current status of the literature effectively.

The session begins with an introduction to bibliometric analysis, differentiating between bibliometric indicators and science mapping. Bibliometric indicators provide descriptive insights into the dataset, including the number of documents, authors, keywords, and geographical scope, offering a broad overview of trends within the field. In contrast, science mapping explores the relationships among these elements, identifying interconnections among documents, authors, and themes through co-citation analysis, bibliographic coupling, and keyword co-occurrence.

Participants will learn how to use VOSviewer. The session will guide participants through importing data into VOSviewer and selecting appropriate clustering algorithms. The session will provide instructions on setting up the software and running analyses, offering practical tips for choosing the right clustering technique based on the nature of the research field and the intended review objectives.

Once the clusters are generated, participants will be guided through the iterative process of interpreting and labelling these clusters. This involves reading through the abstracts—or, if feasible, the full texts—of documents within each cluster to identify underlying themes and connections. Emphasis will be placed on understanding the intersections among clusters, leveraging VOSviewer's different visualisation modes (network, density, and overlay) to explore how documents relate to each other within the broader research landscape. Participants will also learn to adjust parameters such as resolution and cluster size to refine the visual output, ensuring that clusters accurately reflect distinct thematic areas.

The session will address techniques for improving the visualisation of clusters to enhance interpretability. Participants will learn how to adjust VOSviewer's resolution settings, which control the level of detail in the clustering, enabling them to explore broad and narrowly defined topics. The session will also cover best practices for adjusting visual elements to better highlight key relationships and ensure that the clusters provide meaningful insights into the literature's structure.

A crucial aspect of this session is the strategic ordering of documents within clusters based on bibliometric indicators, preparing the dataset for the subsequent analysis, interpretation, and theorisation steps. Participants will be introduced to using indicators such as normalised citations, total links, and total link strength to rank documents within each cluster. These bibliometric measures help identify the most influential and representative documents, ensuring that the literature review captures the core contributions within each thematic area.

Participants will explore the Composite Bibliometric Influence Score (CBIS) to support the ordering and selection process. This metric combines normalised citations, total links, and link strength into a single measure of a document's impact and connectivity within the dataset. The session will provide a step-by-step guide on calculating CBIS, using Min-Max scaling techniques, and applying it to order the documents effectively. Participants will also

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learn how to adjust selection criteria to ensure that each cluster is proportionally represented in the final review, balancing the inclusion of foundational works with more recent and emerging contributions.

## Focus Questions

### *Introduction to Bibliometric Analysis:*

- What are the key differences between bibliometric indicators and science mapping, and how do they contribute to understanding the structure of a research field?
- How can bibliometric analysis help identify the most influential authors, documents, and research themes within your field of study?

### *Using VOSviewer for Cluster Generation:*

- What are the main clustering algorithms available in VOSviewer, and how do you decide which one to use based on the nature of your research field?
- How does co-citation analysis differ from bibliographic coupling, and when is each technique most appropriate?
- What steps should you take to prepare and import data into VOSviewer for a robust bibliometric analysis?

### *Interpreting and Labeling Clusters*

- How can you identify the main topics within each cluster generated by VOSviewer, and what are some effective strategies for labelling these clusters?
- What roles do visualisation modes (network, density, overlay) in VOSviewer play in making sense of the clusters and their interconnections?
- How can adjusting the resolution and cluster size parameters in VOSviewer refine the analysis and improve the clarity of the results?

### *Improving Cluster Visualisation:*

- What are the best practices for adjusting VOSviewer visualisations to make the clusters more interpretable and meaningful?
- How can modifying visualisation parameters enhance the representation of relationships among documents, authors, and research themes?
- Why is it essential to document any adjustments made to the visualisation parameters, and how does this contribute to the reproducibility of your analysis?

### *Ordering and Ranking Documents:*

- How can bibliometric indicators, such as normalised citations, total links, and total link strength, be used to rank documents within each cluster?
- What is the Composite Bibliometric Influence Score (CBIS), and how does it provide a comprehensive measure of a document's impact within the dataset?
- How should you balance the inclusion of foundational works and emerging research when ordering documents for the next steps of your review?

### *Implications for Literature Synthesis:*

- How do your bibliometric analysis results influence how you synthesise and interpret the literature in the subsequent stages of your review?
- What are the potential challenges of integrating bibliometric insights into the overall narrative of your literature review, and how can these be addressed?
- How can the clusters identified in your bibliometric analysis guide the development of new research questions or highlight underexplored areas in the field?

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#### *Ensuring Representativeness and Balance:*

- How can you ensure that each identified cluster is proportionally represented in your literature review?
- What criteria should be used to decide whether to include all documents or select a representative subsample from each cluster?
- How does the selection and ordering process affect the overall depth and scope of your literature review?

#### **Suggested Readings**

Bascur, C., et al. (2023). Mapping knowledge with bibliometric analysis. *Scientometrics*, 125, 1234-1256.

Klarin, A. (2024). How to conduct a bibliometric content analysis: Guidelines and contributions of content co-occurrence or co-word literature reviews. *International Journal of Consumer Studies*, 48(2), e13031.

van Eck, N. J., & Waltman, L. (2010). VOSviewer: A computer program for bibliometric mapping. *Scientometrics*, 84, 523-538.

Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organisation. *Organisational Research Methods*, 18(3), 429-472.

### **Session 4: Systematic Literature Review (SLR)**

#### **Learning Objectives**

- Learning the principles of conducting a systematic literature review (SLR), including thematic analysis and synthesis within and across clusters.
- Integrating findings from bibliometric analysis with systematic literature review to develop a comprehensive understanding of the field.
- Identifying critical junctures in the literature, explore interconnections and overlaps between clusters, and lay the groundwork for theoretical development.

#### **Session Description**

Session 4 centres on conducting a systematic literature review (SLR) based on the clusters identified in the bibliometric analysis. This session is key for reviewing the most relevant contributions within each cluster, exploring their interconnections, and understanding the overlaps between and within clusters. The aim is to provide a detailed examination of the current literature, establish a clear picture of what has been done in the field, and set the stage for the theorisation efforts in the next session.

This session begins by introducing the principles of SLR, focusing on thematic analysis and synthesis methods that allow researchers to evaluate and integrate existing knowledge critically. Participants will learn to conduct two complementary types of analysis: a holistic, overarching analysis that identifies interconnections and theoretical frameworks across clusters and a cluster-specific analysis that delves into the knowledge systematised within each cluster. This dual approach provides a broad view of the literature and enables a deep dive into specific substreams.

The holistic analysis leverages the various types of visualisations generated by VOSviewer during the bibliometric analysis phase. Participants will learn to utilise network visualisation to map the relationships among topics and clusters, revealing the interconnectedness of documents and the centrality of specific themes within the research domain.

Following the holistic analysis, the session will guide participants through a cluster-specific review, where the focus shifts to the in-depth analysis of individual clusters. Participants will

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employ a structured framework inspired by Petticrew and Roberts (2008), consisting of four sequential activities: (i) organising studies within each cluster into subcategories, (ii) analysing findings within each subcategory, (iii) comparing findings across subcategories, and (iv) synthesising insights across clusters.

Next, participants will begin by organising documents within each cluster into meaningful subcategories based on themes such as research questions, theoretical lenses, contexts, methodologies, and key findings. This step involves tabulating documents, providing a clear and concise overview of the cluster's content and highlighting prominent studies identified in the previous step using bibliometric indicators like normalised citations or CBIS.

Next, participants will engage in a narrative synthesis of the findings within each subcategory, interpreting how each study contributes to the broader understanding of the cluster's thematic focus. This analysis identifies patterns, consistencies, and discrepancies among studies, highlighting underlying mechanisms and contextual factors shaping the observed outcomes.

The session will then guide participants through the comparative analysis of findings across subcategories and clusters, identifying thematic connections and co-influence lines in the literature. This cross-cluster synthesis is instrumental in constructing a more integrated understanding of the field, setting the groundwork for developing theoretical frameworks that capture the insights derived from the SLR.

Participants will use VOSviewer's visualisations to support these analyses, examining focal points within clusters to understand how individual documents are embedded within the network of connections. The session will emphasise the importance of overlay visualisations in identifying how key documents link with both older foundational works and newer studies, offering a dynamic view of the literature's evolution.

The session will also delve into the interconnections and overlaps between clusters, encouraging participants to look beyond isolated cluster boundaries to identify emerging perspectives and potential areas for integration. This exploration will help highlight how various subfields intersect, providing valuable insights into how different research themes converge or diverge.

Thus, the findings from this systematic review will provide a comprehensive picture of the current state of the literature, highlighting both well-established areas and gaps ripe for further exploration. By the end of the session, participants will have developed a nuanced understanding of the literature, ready to engage in theorisation efforts that build on the synthesis of existing knowledge and push the field's boundaries.

## Focus Questions

### *Principles of Systematic Literature Review (SLR):*

- What are the core principles of conducting a systematic literature review, and why is it important to integrate thematic analysis with bibliometric insights?
- How does combining a holistic and cluster-specific analysis provide a comprehensive understanding of the literature?
- What challenges might arise when conducting an SLR based on bibliometric clusters, and how can these be effectively managed?

### *Integrating Bibliometric Indicators in SLR:*

- How can bibliometric indicators such as normalised citations and the Composite Bibliometric Influence Score (CBIS) guide the ordering and selection of documents for review?
- What role do VOSviewer visualisations play in enhancing the interpretation of findings within each cluster, and how can these visual cues support thematic analysis?

- How can researchers ensure that the clusters' thematic representations align with the underlying data, and what adjustments might be necessary to improve interpretability?

#### *Holistic Analysis of Clusters:*

- How can network visualisation in VOSviewer help identify the interconnections and intersections among clusters, and what insights can be drawn from these patterns?
- What role does density visualisation play in assessing the homogeneity or fragmentation of the literature within and across clusters?
- How can overlay visualisation be used to understand the temporal evolution of research themes, and why is this important for identifying emerging areas in the field?

#### *Cluster-Specific Review:*

- What steps are involved in organising studies within each cluster into subcategories, and how does this structure support the synthesis of findings?
- How can narrative synthesis help articulate the contributions of individual studies within each subcategory, and what key elements should be highlighted?
- What methods can be used to compare and contrast findings across subcategories, and how do these methods enhance the understanding of thematic connections within clusters?

#### *Exploring Interconnections and Overlaps:*

- Why is it important to explore the overlaps and interconnections between clusters, and how can this analysis reveal new perspectives or theoretical opportunities?
- How can cross-cluster synthesis help identify critical junctures in the literature and contribute to the development of a unified theoretical framework?
- What strategies can be employed to document and visualise the interconnections between clusters, ensuring a clear representation of the literature's broader landscape?

#### *Setting the Ground for Theorization:*

- How can the findings from the SLR inform the next steps in the theorisation process, and what elements are essential to highlight for theoretical development?
- What are the key gaps and areas of consensus that emerge from the systematic review, and how can these inform future research directions?
- How does synthesising insights across clusters help construct a more integrated view of the field, and why is this integration critical for advancing knowledge?

#### *Challenges and Best Practices:*

- What are some common challenges encountered when conducting an SLR based on bibliometric clusters, and what strategies can help mitigate these issues?
- How can researchers ensure methodological rigour and consistency in their review process, especially when dealing with overlapping or interrelated clusters?
- What best practices should be followed to document the review process, ensuring transparency and reproducibility in the analysis and synthesis of the literature?

### **Suggested Readings**

Petticrew, M., & Roberts, H., (2008). *Systematic reviews in the social sciences: A practical guide*, John Wiley and Sons

Simsek, Z., Fox, B., & Heavey, C. (2021). Systematicity in organisational research literature reviews: a framework and assessment, *Organizational Research Methods*, 26(2), 292-321.

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To cite: Marzi, G., Balzano, M., Caputo, A., & Pellegrini, M. M. (2025). Guidelines for bibliometric-systematic literature reviews: 10 steps to combine analysis, synthesis, and theory development. *International Journal of Management Reviews*, 27(1), 81–103. <https://doi.org/10.1111/ijmr.12381>

Tranfield, D., Denyer, D. & Smart, P., (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review, *British Journal of Management*, 14(3), pp. 207-222.

## **Session 5: Theory Development**

### **Learning Objectives**

- Exploring principles and strategies for developing theoretical contributions from review studies.
- Learning how to build frameworks, models, and research agendas based on the insights gained from the B-SLR.
- Understanding the miner-pro prospector continuum and its application in theory development.

### **Session Description**

Session 5 is dedicated to developing theoretical advancements within the field or specific topic under investigation. This session explores various theorisation mechanisms to move beyond merely summarising the existing literature. It emphasises the importance of leveraging insights from the bibliometric and systematic literature review phases to propose new frameworks, models, and research agendas that advance current understanding. This task is essential for shifting contributions along the miner-pro prospector continuum, creating a review that reflects the current state of the literature and provides a significant theoretical extension.

The session begins with participants exploring different theorisation mechanisms that can be employed to achieve theoretical advancements. Drawing on insights from the literature, they will learn how to challenge assumptions, develop new constructs, and integrate various theoretical perspectives. The session will guide participants through using diagrams, frameworks, and models to represent their theoretical contributions visually, helping to clarify complex relationships and enhance the impact of their work. Participants will be encouraged to revisit their previous analyses, focusing on synthesising the thematic insights gained from the systematic literature review. This process involves re-evaluating knowledge claims within the field, identifying key assumptions, and highlighting areas where current theories fall short. The goal is to use these insights to propose new theoretical directions.

Next, participants will learn how to navigate the miner-pro prospector continuum by integrating findings across clusters and subcategories. This stage involves aligning existing knowledge with potential avenues for new theory development, using creative framing to highlight previously unrecognised connections and to propose innovative theoretical contributions.

Participants will explore different forms of theoretical contributions that can be derived from the B-SLR, including research agendas, taxonomies and Structured Interpretative Frameworks, Alternative Models and Emergent Interpretative Frameworks, and Metatheory Development.

The session will also emphasise the importance of prototyping theoretical contributions for an audience. Participants will learn how to present their theoretical advancements effectively, ensuring that their contributions are accessible and relevant to both academic and non-academic stakeholders. The session will guide articulating the value of their theorisation, assessing its potential to advance academic debates, address societal challenges, and inspire future research.

Throughout the session, participants will be encouraged to reflect on their positioning within the miner-pro prospector continuum. They will learn how to strategically balance the

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consolidation of existing knowledge with pursuing novel theoretical insights, ensuring that their contributions are rigorous and innovative. The session will highlight the importance of clearly articulating the theoretical significance of their work, positioning it as a meaningful advancement in the field.

By the end of this session, participants will have gained a deep understanding of the various mechanisms available for theory development in review studies. They will be equipped with the tools and strategies needed to move beyond descriptive synthesis, crafting contributions that effectively advance the current state of knowledge and provide a robust foundation for future theoretical exploration. This session marks a critical transition from reviewing the literature to actively contributing to its evolution, positioning participants to make impactful theoretical advancements in their field.

## **Focus Questions**

### *Understanding Theory Development:*

- What are the key principles of theory development in literature reviews, and why is it important to go beyond merely summarising existing research?
- How can theoretical contributions enhance the impact of a literature review, and what distinguishes a high-value theoretical advancement from a simple synthesis of the literature?
- What role does the miner-pro prospector continuum play in guiding the positioning of your theoretical contribution?

### *Navigating the Miner-Prospector Continuum:*

- How can the miner approach help identify gaps and organise existing knowledge, and what are its limitations in advancing theoretical understanding?
- What strategies characterise the prospector approach, and how can these be used to generate innovative theoretical insights that challenge existing paradigms?
- When developing their theoretical contributions, how should researchers decide their positioning along the miner-pro prospector continuum?

### *Mechanisms for Theorisation:*

- What are the different theorisation mechanisms available (e.g., frameworks, models, research agendas), and how can each contribute to advancing theoretical understanding?
- How can diagrams, frameworks, and models be used to represent theoretical advancements visually, and what are the best practices for constructing these visual tools?
- What strategies can be used to challenge existing assumptions and integrate diverse theoretical perspectives to create novel constructs?

### *Developing Research Agendas:*

- How can research agendas be used to systematically identify gaps and propose future research directions in a field?
- What is the difference between exploitative and explorative research questions, and how can they be balanced within a research agenda?
- How can VOSviewer visualisations support identifying key areas for future research within a structured research agenda?

### *Creating Taxonomies and Alternative Models:*

- What steps are involved in creating taxonomies or structured interpretative frameworks, and how do these support clarifying and organising theoretical constructs?

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- How can alternative models offer fresh perspectives on existing knowledge, and what are some effective ways to identify areas for developing such models?
- What insights can be gained from visual tools like VOSviewer in identifying emerging patterns that can inform new theoretical frameworks?

#### *Exploring Metatheory Development:*

- What is metatheory, and how can it be used to extend the applicability of theories across different domains?
- How can analogical reasoning and interdisciplinary integration contribute to the development of metatheories?
- What are the challenges of developing metatheories, and how can these be addressed to create meaningful theoretical advancements?

#### *Evaluating and Prototyping Theoretical Contributions:*

- How can researchers assess the value of their theoretical contributions, and what criteria should be used to determine their potential impact on academic debates?
- What are the key considerations when prototyping theoretical advancements for different audiences, including academic and non-academic stakeholders?
- How can researchers effectively communicate the relevance and implications of their theoretical developments to ensure they resonate with the intended audience?

#### *Challenges and Best Practices in Theory Development:*

- What common challenges might arise during the theory development process, and what strategies can be employed to overcome these obstacles?
- How can researchers ensure that their theoretical contributions are rigorous, coherent, and capable of advancing the field?
- What best practices should be followed to document the theorisation process, ensuring that theoretical contributions are transparent and reproducible?

### **Suggested Readings**

- Breslin, D., & Gatrell, C. (2023). The miner-pro prospector continuum in literature reviews. *Academy of Management Review*, 48(2), 345-369.
- Gruner, R. L., & Minunno, R. (2023). The future of review-based research: Synthesising theory and practice. *Journal of Management Studies*.
- Post, C., Sarala, R., Gatrell, C., & Prescott, J. E. (2020). Advancing theory with review articles. *Journal of Management Studies*, 57(2), 351-376
- Torraco, R. J. (2016). Writing integrative literature reviews: Using the past and present to explore the future. *Human Resource Development Review*, 15(4), 404-428.

**B-SLR** |



# ***Guidelines for Bibliometric-Systematic Literature Reviews: 10 steps to combine analysis, synthesis and theory development***

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# Introduction to B-SLR

## Motivation for Developing B-SLR

- Increasing academic production has made it challenging to track major insights in each field (Thelwall & Sud, 2022)
- B-SLR was created to provide a structured, multi-method approach for identifying critical gaps and expanding academic conversations.

## Limitations of Traditional Reviews

- Pure bibliometric methods focus heavily on quantitative metrics but lack depth for conceptual contributions (Zupic & Čater, 2015).
- Systematic literature reviews (SLRs) offer qualitative insights but often miss data-driven connections (Breslin & Gatrell, 2023).
- Combining these methods in B-SLR leverages both quantitative and qualitative strengths for a more comprehensive review.

## Benefits of B-SLR for Researchers

- B-SLR acts as a flexible toolbox that encourages creativity while maintaining rigorous analysis.
- It enables researchers to synthesize complex knowledge, identify gaps, and expand theoretical contributions.
- This approach promotes timely and relevant insights, bridging gaps between diverse research traditions.

METHODOLOGY



**Guidelines for Bibliometric-Systematic Literature Reviews:  
10 steps to combine analysis, synthesis and theory  
development**

Giacomo Marzi<sup>1</sup> | Marco Balzano<sup>2</sup> | Andrea Caputo<sup>3,4</sup> |  
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# Purpose and Scope of the B-SLR Approach

## Research Question

- The B-SLR approach addresses the methodological question: What steps and key junctures are needed to integrate bibliometric analysis with systematic literature review (SLR) to deliver both a synthesis and theoretical development?
- This approach aims to fill gaps in traditional review methods by offering a structured, multi-method pathway that links bibliometric analysis, SLR, and theory-building (Page et al., 2021a; Shea et al., 2017)

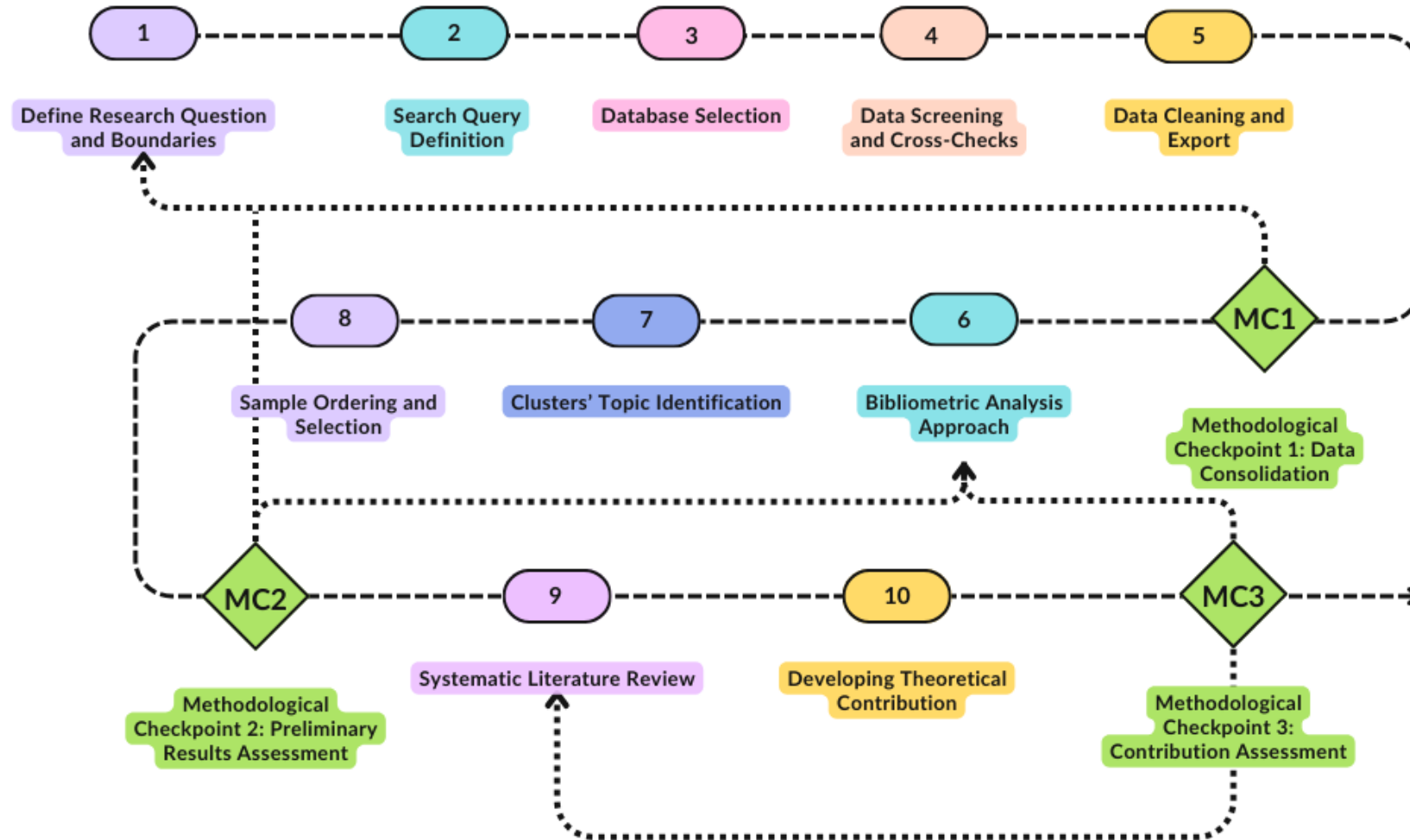
## Target Audience

- Designed for researchers who aim to synthesize and expand existing literature, the B-SLR is particularly useful in areas where interdisciplinary perspectives are required to develop theory or identify research gaps.
- This approach supports scholars in management studies along the "miner–prospector continuum" – from detailed domain examinations to exploratory research that pushes the boundaries of current knowledge (Breslin & Gatrell, 2023)





# The 10-Step B-SLR Process Overview



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# Step 1

## Defining Research Question and Boundaries



### Informal Literature Scanning

Start by reviewing existing literature informally to gain a broad understanding of the field.

This helps identify initial research gaps and familiarizes researchers with foundational concepts and emerging trends.



### Identifying Research Gaps

Through literature scanning, researchers pinpoint gaps in existing knowledge, which guide the formation of a focused research question.



### Defining the Research Question

The research question should be clear, actionable, and relevant, aimed at synthesizing existing knowledge or pushing theoretical boundaries.



### Setting Inclusion and Exclusion Criteria

Criteria are set to determine which studies will be included in or excluded from the review, ensuring the review stays relevant and manageable.

Consider elements like publication date, source quality, and topic relevance.

#### Outcomes:

- I. Topic choice
- II. Research question
- III. Inclusion/Exclusion criteria

#### Pillars and examples:

Alegre et al. (2023), Colquitt and George (2011), Kunisch et al. (2023)



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# Step 2

## Search Query Definition

### • Identify Keywords

- Based on the research question, determine the primary keywords and concepts that capture the scope of the review

### • Validate Keywords

- Review terminology used in recent and highly cited studies to ensure keywords are comprehensive and relevant.
- Consider synonyms, broader terms, and variations in terminology (e.g., “organization” vs. “organisation”)

### • Develop the Search String

- Combine keywords using Boolean operators (AND, OR) to create a robust search string.
- Test the search string to check that it retrieves a relevant and manageable number of documents

**Outcome:**  
I. Search String

#### **Pillars and examples:**

Kuhrmann et al.  
(2017)  
Williams et al. (2021)  
Caputo et al. (2021)  
Fan et al. (2021)



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# Step 3 Database Selection

Database	Coverage	Strengths	Limitations
	Broad interdisciplinary coverage across social sciences, health, and engineering.	Extensive range of document types (journals, books, conference proceedings). Regularly updated with large dataset, aiding interdisciplinary studies.	Some specialized journals may not be indexed. Slightly higher access costs, requiring institutional subscription.
	High-impact journals with selective indexing, often prioritized by prestigious journals. Strong focus on social sciences and natural sciences.	High-quality indexing ensures relevance and credibility. Well-suited for established fields needing recognized sources.	High-quality indexing ensures relevance and credibility. Well-suited for established fields needing recognized sources.
	Free, comprehensive access to a broad dataset across disciplines, with a growing collection of journal articles.	Open access, making it accessible for all researchers. Useful as an alternative where resources are limited.	May lack depth in some specialized areas. Still developing its indexing breadth compared to Scopus and WoS. Some filtering limitations.

**Outcomes:**  
I. Selected database

**Pillars and examples:**  
Hiebl (2023), Caputo et al. (2021)

**Robustness:**  
cross-check to provide layer of verification



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# Step 4

## Data Screening and Cross-Checks

**Pillars and examples:**  
Hiebl (2023), Balzano (2022)

### Initial Data Screening

- Remove duplicates and irrelevant studies based on predefined criteria (e.g., document type, language).

### Quality Standards Check

- Assess studies based on quality indicators such as journal ranking, citation count, or relevance to the research question.

### Cross-Verification with Co-Researchers

- Conduct a cross-check with team members or co-researchers to ensure alignment and reduce subjective bias.

**Outcome:**  
I. Raw Dataset



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# Step 5

# Data Cleaning and Export

## Data Cleaning Process

- Screen documents based on inclusion/exclusion criteria to ensure relevance to the research question (Page et al., 2021a; Shea et al., 2017)
- Apply critical judgment as per the AMSTAR 2 protocol (Shea et al., 2017)
- Use a structured classification method (e.g., A/B/C logic) to categorize documents (Pittaway et al., 2004)

## Inter-Rater Agreement

- If multiple researchers are involved, categorize independently and discuss discrepancies. Use tools like **Krippendorff's Alpha** to measure agreement and ensure consistency (Krippendorff, 2019), e.g., K-Alpha Calculator (Marzi et al., 2024)

## Export and Document Transparency

- Export cleaned dataset (e.g., .csv from Scopus, .txt from WoS).
- Provide initial and cleaned datasets as supplementary material for transparency also in the review process.

## Visual Representation

- Flow diagrams show the document selection process, with details on the number of documents retrieved, screened, and included.

### Pillars and examples:

Marzi et al.  
(2024), Mukherjee  
et al. (2022)

Outcome:  
I. Refined dataset



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# Methodological Checkpoint 1

## Data Consolidation

- **Purpose of Data Consolidation**

Ensures rigor and consistency in the review process before advancing.

- **Key Areas for Review**

**Research Question:** Verify clarity and relevance.

**Inclusion/Exclusion Criteria:** Confirm these boundaries align with research goals.

**Search String Effectiveness:** Assess if the search captures relevant literature fully.

**Data Completeness:** Ensure the dataset is comprehensive for analysis.

- **Reappraisal and Calibration**

If issues are found, refine previous steps or recalibrate criteria to enhance review rigor and relevance.

- **Information to be reported on the methodological section of the study developed with B-SLR:**

1. Literature perimeter
2. Inclusion and exclusion criteria
3. Research string
4. Database adopted as primary source and database used for cross-checking
5. Document type limitations: language, type of documents, etc.
6. The time span covered by the research query
7. Number of documents extracted from the first research query before the manual selection following the inclusion/exclusion criteria
8. The number of documents retained after the manual selection following the inclusion and exclusion criteria



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# Step 6

## Bibliometric Analysis Approach

### • Bibliometric Indicators

Descriptive statistics such as document count, author contributions, keywords, geographical scope, and timeframes to understand dataset characteristics.



### • Science Mapping

Analyze relationships and patterns among documents, authors, journals, and keywords.

Options include:

**Co-citation Analysis:** Emphasizes historical connections within the field, showing how past research interconnects.

**Bibliographic Coupling:** Highlights recent developments by linking documents through shared references.

Outcome:  
I. Preliminary  
bibliometric  
results

### Pillars and examples:

Donthu et al. (2021),  
Marzi et al. (2021),  
van Eck and  
Waltman (2010),  
Zupic and Čater  
(2015)



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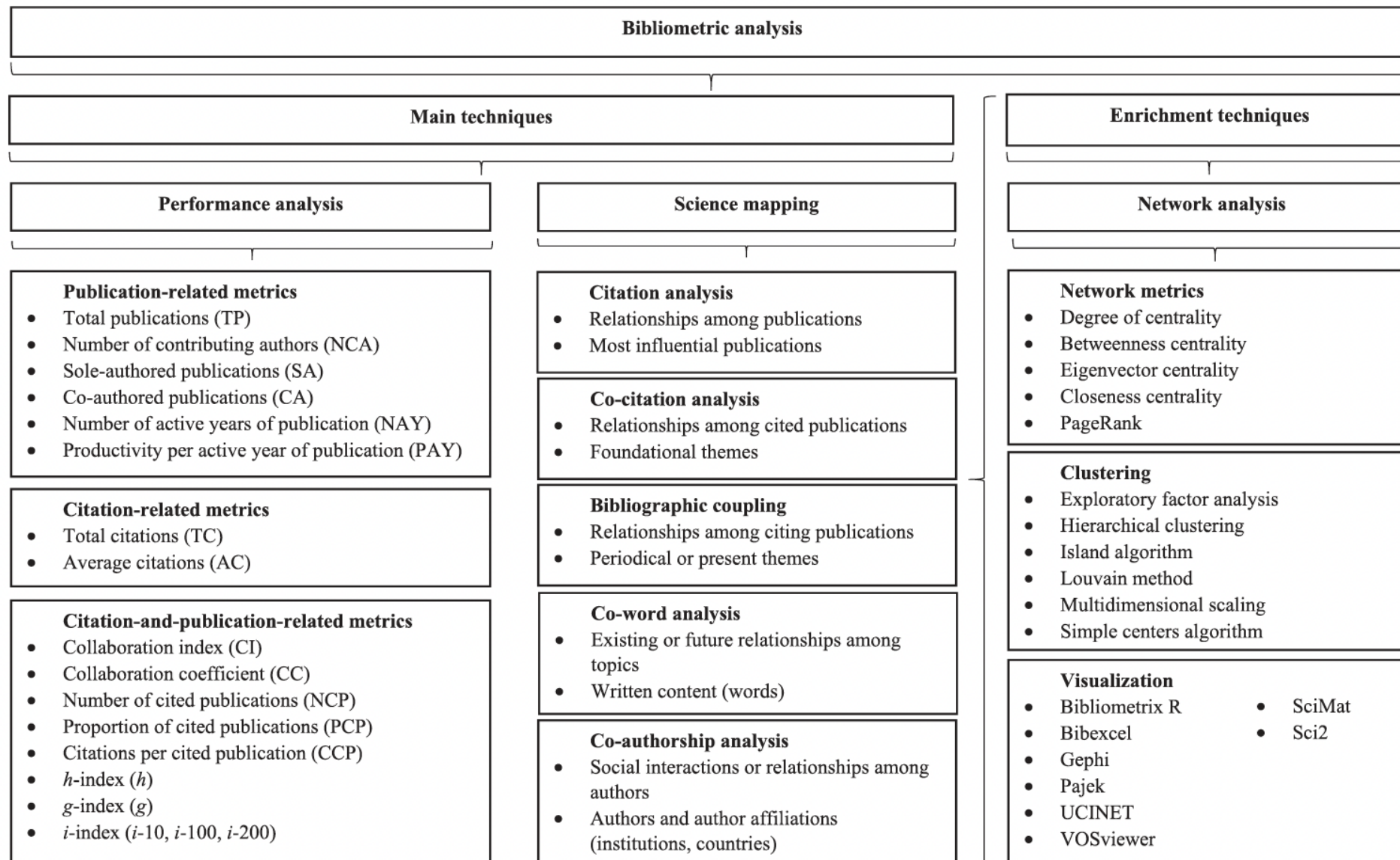


Fig. 2. The bibliometric analysis toolbox.

Donthu et al. (2021)



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# Types of analysis available in VOSviewer

Type of Visualisation	Description	Scope
Network	Enables scrutinising the spatial distributions of the documents and their respective clusters to figure out the overarching knowledge structure within a field.	Highlights the relatedness and interconnection among topics and clusters, offering insights on documents' centrality within a research stream.
Density	Underscores the magnitude and influence of specific subdomains in a given research field. It employs different colour gradients, wherein a blue tone indicates areas of diminished impact, a green tone indicates an average value and a yellow shade denotes regions of greater intensity and activity.	Highlights the extent to which the knowledge base in a field is either homogeneous or fragmented. It assists in identifying chief documents recurring across various clusters and/or topics.
Overlay	Displays the temporal evolution of a field. Elements and regions depicted in blue tones indicate well-established topics, moving to green indicating developed topics, whilst those progressing to yellow tones denote emerging trends.	Highlights the progressive developments occurring over a specified time span, helping identify topics that have garnered increased interest in recent years and future trends.

Marzi et al. (2025)



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# Step 7

## Identifying Clusters

### Setting Parameters in VOSviewer

- Default settings in VOSviewer are recommended: set resolution to 1.00 and minimum cluster size to 10% of the total sample size.

### Cluster Identification Process

- Review the content of each cluster by reading abstracts or, if possible, full texts for smaller clusters.
- Identify topics and themes within each cluster, considering the theoretical perspectives, empirical context, or practices that unify the documents.

### Assigning Cluster Labels

- Each researcher independently labels clusters, then collaboratively finalizes labels to ensure a shared understanding of thematic structures.

### Adjusting Resolution for Clarity

- If necessary, adjust the resolution to refine cluster size and thematic homogeneity. Higher resolution generates more clusters, offering greater granularity.

**Outcomes:**  
I. Clustering  
II. Graphical representation

### Pillars and examples:

Bascur et al. (2023),  
McAllister et al.  
(2022), Pellegrini et  
al. (2020)



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# Strategies for Clusters' Topic Identification

Type of Strategy	Description
<ul style="list-style-type: none"> <li>Iterative Resolution Adjustment</li> </ul>	<ul style="list-style-type: none"> <li>Researchers can observe the impact on cluster compositions by starting with the default setting (1.00) and making gradual adjustments (either increasing or decreasing).</li> <li>Allows for granular data exploration and fine-tuning of clusters by meaning.</li> <li>Useful for uncovering subtle connections between documents.</li> </ul>
<ul style="list-style-type: none"> <li>Comparative Cluster Analysis</li> </ul>	<ul style="list-style-type: none"> <li>Generating and analysing bibliometric maps at multiple resolution settings to examine the stability and variability of topics across different levels of granularity.</li> <li>Core topics should remain consistent across various resolution settings, indicating their robustness and centrality to the field.</li> <li>Peripheral or emerging topics may appear or disappear as the resolution changes, highlighting their potentially peripheral role.</li> <li>Assesses reliability of identified themes.</li> </ul>
<ul style="list-style-type: none"> <li>Thematic Homogeneity Assessment</li> </ul>	<ul style="list-style-type: none"> <li>Balance between the breadth (coverage) and depth (focus) of clusters to ensure coherence.</li> <li>Refine clusters to accurately reflect a unified theoretical perspective, empirical context, or set of practices.</li> <li>Ensures that clusters are not overly broad nor too narrow.</li> <li>Thematic homogeneity is a key in the interpretability of bibliometric analyses.</li> </ul>
<ul style="list-style-type: none"> <li>Benchmarking Against Known Literature</li> </ul>	<ul style="list-style-type: none"> <li>Adjust clustering resolution to ensure seminal works and well-established findings are grouped correctly.</li> <li>Use landmark studies as reference points to validate cluster formation.</li> <li>Verify that significant works are positioned within relevant clusters, aligning with known knowledge structures.</li> <li>Serve as a quality control measure, confirming that the bibliometric analysis reflects the discipline's intellectual landscape.</li> <li>Validate the analytical approach by ensuring identified clusters are accurate and meaningful within the broader scholarly context.</li> </ul>



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Marzi et al. (2025)



# Step 8

## Sample Ordering and Selection

### Purpose of Sample Ordering and Selection

- Connects the bibliometric analysis to the review process by establishing the order and selection of documents within each cluster.

### Criteria for Document Selection

- Researchers assess document representativity within each cluster.
- Criteria may include quantitative metrics like normalized citations (NCs) or a **Composite Bibliometric Influence Score (CBIS)** to represent document impact.

#### Outcomes:

- I. Dataset ordered by the representativity of the documents per each cluster
- II. Sample reduction (if needed)

#### Pillars and examples:

Bornmann (2014),  
Krippendorff (2019), Turzo et al.  
(2022)

### Guidelines for Sample Size

- For management studies, the ideal sample is around 100  $\pm$  40 documents, ensuring both depth and manageable scope.
- When reducing sample size, a minimum threshold of **10% per cluster** is suggested to maintain cluster representativity.

### Final Review and Quality Control

- Researchers qualitatively review excluded documents (e.g., abstract re-reading) to ensure exclusions don't compromise review quality.
- Agreement measures, such as **Krippendorff's Alpha**, can assess consistency among reviewers, especially if multiple researchers are involved.



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# Methodological checkpoint 2 – preliminary results assessment

- **Joint Examination of Initial Bibliometric Results**

Review initial analysis outcomes collectively to ensure alignment with study objectives.

- **Critical Quality Assessment**

Evaluate the quality, impact, and meaningfulness of results, ensuring they meet established standards.

- **Triangulation for Interpretation**

Use triangulation among co-authors or a panel of experts to validate insights, enhance interpretation, and refine document selection.

- **Information for Methodological Transparency**

VOSviewer version used.

Aggregation criteria (e.g., bibliographic coupling, co-citation).

Resolution and minimum cluster size set.

Criteria for sample ordering and selection.



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# Step 9

## Systematic Literature Review

### • Holistic and Cluster-Specific Analysis

Perform two complementary types of analysis:

- **Holistic Analysis:** Identifies interconnections between clusters and overarching theoretical frameworks
- **Cluster-Specific Analysis:** Focuses on organizing and synthesizing knowledge within each cluster.

### • Qualitative Thematic Analysis

Use thematic analysis to critically evaluate and interpret central concepts, themes, and research gaps within the literature.

### • Visualization and Interpretation

Utilize **VOSviewer** for spatial representation, including:

- **Network Visualization:** Highlights interrelationships between clusters.
- **Density Visualization:** Assesses the knowledge distribution and core topics.
- **Overlay Visualization:** Identifies evolving themes and potential research directions over time.

### • Framework for Theory Development

Combine insights from holistic and cluster-specific analyses to build a theoretical foundation and outline knowledge gaps.

#### Outcomes:

- I. Results of the holistic analysis
- II. Results of clusters' thematic analysis

#### Pillars and examples:

Petticrew and Roberts (2008), Post et al. (2020), Simsek et al. (2021), Tranfield et al. (2003)



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# Step 10

## Developing Theoretical Contribution

### Review Knowledge Claims

- Reassess core assumptions, enduring critiques, and existing research gaps to identify focal points for theory development.

### Theorizing Approaches

- Research Agenda: Generates structured research questions to guide future studies (Torraco, 2005; Pellegrini et al., 2020)
- Taxonomy/Conceptual Framework: Organizes constructs and relationships to clarify emerging patterns (Breslin & Gatrell, 2023; Post et al., 2020)
- Alternative Models/Metatheory: Builds interdisciplinary insights or bridges different theoretical perspectives (Alegre et al., 2023; Torraco, 2016)

### Miner vs. Prospector Approaches

- Miner: Consolidate and structure existing knowledge (Breslin & Gatrell, 2023)
- Prospector: Explore novel insights, create interdisciplinary connections, and extend existing paradigms (Breslin & Gatrell, 2023)

### Theory Prototyping for Broader Appeal

- Present the theoretical contribution in a form relevant to both academic and non-academic audiences, potentially using diagrams or models for clarity (Alegre et al., 2023)



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# Type of synthesis for theorising in B-SLR articles

Marzi et al. (2024)

Type of Synthesis	Conceptual Perimeter	Underlying Rationale	B-SLR Application	Possible Theorisation Avenues	Theoretical Value
<b>Research agenda</b>	A research agenda is based on a set of research questions that can inform the future development of the field.	To systematically identify gaps and set a structured pathway for advancing the field, ensuring continuous development and innovation in research.	Research agendas could present questions that pertain to the results of thematic/critical analyses performed at the cluster level (cluster-focused questions) or that pertain to the holistic analysis (general questions).	<ul style="list-style-type: none"> <li>- Proposing further emerging perspectives;</li> <li>- Challenging literature assumptions by proposing different ones or relaxing the existing ones;</li> <li>- Summarising areas need for further clarification where future research should set its locus of attention;</li> <li>- Leading more investigation on existing and new boundary conditions and ways to further examine them;</li> <li>- Directing future efforts in exploring how new theory testing could contribute to a field;</li> <li>- Looking at a phenomenon at large, exploring trajectories, transformational conditions or subcomponents of the broader phenomenon.</li> </ul>	Establishes a detailed roadmap for future research by highlighting critical gaps, emerging areas, and critical questions to move the field forward. Research agendas should be capable of influencing future studies and encouraging the exploration of novel theoretical landscapes or fine-graining more studied avenues.
<b>Taxonomy (structured interpretative framework)</b>	A taxonomy is an organised synthesis that classifies the thematic/critical analysis results to set the ground for future developments.	To create a coherent understanding of the field that aids researchers in navigating and synthesising theoretical constructs, promoting clarity and depth in scholarly discourse.	A taxonomy or structured interpretative framework should incorporate the overarching themes or clusters identified through the review, juxtaposing them against established or emerging frameworks, key elements, and theories within the discipline or even those borrowed from other fields.	<ul style="list-style-type: none"> <li>- Illustrating the key differences among salient theoretical constructs by contrasting old and new theoretical perspectives;</li> <li>- Comparing and clarifying the underlying assumptions and showcasing the core dimensions leading to their variations;</li> <li>- Classifying boundary conditions, mechanisms and core concepts;</li> <li>- Testing the validity of a new or existing theory.</li> </ul>	Provides a comprehensive and systematic classification that clarifies and organises the key concepts, theories, variables and frameworks in the field. This structured synthesis facilitates a deeper understanding of theoretical constructs and their interrelations, enabling scholars to identify core dimensions, boundary conditions, and underlying assumptions.





# Type of synthesis for theorising in B-SLR articles

Marzi et al. (2024)

Type of Synthesis	Conceptual Perimeter	Underlying Rationale	B-SLR Application	Possible Theorisation Avenues	Theoretical Value
<b>Alternative model (emergent interpretative framework)</b>	Alternative models are innovative ways to frame existing knowledge.	To innovate and provide fresh perspectives on existing knowledge by addressing overlooked areas and reconceptualising established ideas.	Alternative models can be derived directly from thematic analysis and assessing what prior literature did not extensively address. An alternative model or emergent interpretative framework should summarise the key elements of the holistic and specific thematic/critical analysis into new (or partially new) schemes and reassess their interconnections via theoretical synthesis.	<ul style="list-style-type: none"> <li>- Introducing and comparing different models' assumptions, constructs, and boundary conditions;</li> <li>- Contrasting established models with new ones;</li> <li>- Investigating the explanatory power of a new model based on existing evidence;</li> <li>- Framing the whole literature as a system composed of different elements;</li> <li>- Illustrating how conflicting results may be explained by unidentified mechanisms that have not been previously discovered.</li> </ul>	An alternative model offers innovative perspectives that challenge and extend existing paradigms by introducing new elements, relationships, and frameworks. This synthesis fosters intellectual advancement by providing alternative explanations and reconceptualising the interconnections within the body of knowledge. It addresses gaps and contradictions in the literature, proposing novel theoretical constructs and explanatory mechanisms, thereby enriching the theoretical landscape and guiding future inquiry.
<b>Metatheory</b>	Metatheory refers to applying existing theories from different and eventually unrelated disciplines.	To broaden the applicability of theories and create innovative connections across different fields, fostering interdisciplinary research and expanding the scope of theoretical frameworks.	A metatheory can support a prospector approach, facilitating the creation of new conceptual links among clusters or subtopics.	<ul style="list-style-type: none"> <li>- Expanding emerging perspectives to explain other phenomena in similar domains;</li> <li>- Expanding boundary conditions across phenomena, contexts, and disciplinary boundaries;</li> <li>- Focusing on key underlying assumptions and conceptual ambiguities by reconciling sparse viewpoints;</li> <li>- Showing how a new theory applies across prior research findings in different research domains.</li> </ul>	Enhances theoretical richness by integrating and transcending disciplinary boundaries, creating comprehensive frameworks that apply across various contexts and domains. This synthesis leverages analogical reasoning to establish connections between disparate fields, offering new conceptual linkages and broadening the applicability of existing theories. It fosters interdisciplinary innovation and addresses complex phenomena through a multifaceted theoretical lens, promoting greater conceptual depth and further theoretical advancements.





# Methodological Checkpoint 3

## Contribution Assessment

### • Joint Examination of SLR and Theorizing Outcomes

- Researchers collaboratively review systematic literature review (SLR) findings and the results of theorizing exercises to ensure consistency and quality.

### • Impact and Overall Contribution Evaluation

- Assess the study's contribution to the field through a **reflexive and sense-making exercise**. This involves evaluating whether the findings offer meaningful insights and align with research objectives.

### • Refinements and Quality Checks

- Conduct minor adjustments based on findings and feedback, ensuring completeness. Write the abstract to summarize the research contribution effectively.

### • Document Methodology Transparency

- Record essential information, including guiding principles, SLR procedures, and types of synthesis for theorizing, to ensure transparency.



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# Expanding B-SLR

- **Computational Approaches**

Integrate techniques like **topic modeling** to reveal latent topics and refine clusters.

- **Extensions to Other Review Types**

Support for **Integrative Literature Reviews**: Generate new insights across research streams.

Support for **Problematizing Reviews**: Challenge established perspectives through reflexive reading.

- **Use in Review of Reviews (Umbrella Reviews)**

Apply B-SLR to meta-reviews, summarizing multiple reviews for comprehensive insights.

- **Artificial Intelligence (AI) Integration**

Use AI for tasks like data extraction and categorization, enhancing efficiency and interdisciplinary discovery.

- **Flexibility and Open Science**

Tailor B-SLR to specific disciplines. Emphasizes the use of open-access tools and aligns with Open Science principles.



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# Practical tips and best practices

- **Sample Size Recommendations**
  - Target around  $100 \pm 40$  documents to balance depth and manageability.
- **Order of Sample Selection**
  - Prioritize documents using **normalized citations (NCs)** or **Composite Bibliometric Influence Score (CBIS)**.
- **Data Cleaning and Transparency**
  - Document both initial and final datasets for transparency and replicability.
- **Reliability and Inter-Rater Agreement**
  - Ensure consistency with metrics like **Krippendorff's Alpha** in team-based reviews.
- **Parameter Settings in VOSviewer**
  - Start with **resolution set to 1.00** and adjust as needed for thematic clarity in clusters.
- **Benchmarking Clusters**
  - Validate clusters by comparing against key studies to ensure alignment with established knowledge.





# Companion Resources and Support

- <https://www.b-slr.org/> companion website provides additional resources for supporting authors in applying the B-SLR framework

## Available Resources:

- [Published Article](#)
- [B-SLR Activities, Outcomes and Methodological Pillars](#)
- [B-SLR 10-Steps Workflow](#)
- [B-SLR Methodological Template](#)
- [VOSviewer Software](#)
- [PRISMA 2020 Materials](#)
- [AMSTAR 2 Materials](#)
- [Krippendorff's Alpha Calculator](#)
- [Teaching and Learning Guide](#)



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# Software and Databases for B-SLR

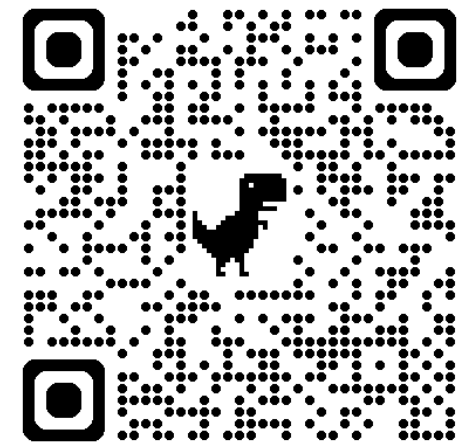
## Software

- **VOSviewer:** Used for bibliometric analysis, especially in **Step 6** (Bibliometric Analysis Approach) and **Step 7** (Clusters' Topic Identification).
- VOSviewer helps visualize relationships between documents through co-citation, bibliographic coupling, and co-occurrence analysis.
- **Bibliometrix (optional):** Another tool sometimes used for bibliometric analysis. It offers alternatives for mapping knowledge and analyzing bibliographic data.
- **Spreadsheet Software (e.g., Excel or Google Sheets):** Used in **Step 8** (Sample Ordering and Selection) to organize and rank documents based on criteria like citation strength and total link strength.
- **K-Alpha Calculator:** For assessing agreement among researchers in document selection, recommended during data cleaning or at **Methodological Checkpoint 2** for preliminary results assessment.

## Database

- **Scopus and Web of Science (WoS):** Commonly mentioned as primary databases in **Step 3** (Database Selection) for extracting bibliographic data due to their extensive coverage and reliability.
- **Dimensions:** An alternative database that offers broad scientific coverage and can be used if access to Scopus or WoS is unavailable.
- **PubMed** (specific to medical or life sciences literature): Although less common in management studies, it's mentioned as an option if the research includes medical or interdisciplinary topics.





# Thank you for your kind attention

