Trend and Application of Bibliometric Analysis in Humanities and Social Sciences Research

Lalita Jitkaroon, Naresuan University, Thailand

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Abstract

Bibliometric analysis is a quantitative method for the systematic study of academic publications using statistical techniques to reveal trends, impacts, and interrelationships within scholarly work. This paper examines the importance of bibliometric analysis in the humanities and social sciences research, emphasising emerging trends and diverse applications. With the rise in scholarly publications, bibliometric analysis has become a vital instrument for analysing academic literature and enhancing comprehension of research trends and influences. Additionally, this paper focuses on an application of bibliometric analysis using the flow diagram of PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guideline, which provides a structured framework for the systematic selection of publication data. VOSviewer is also mentioned in this paper as a software for constructing and visualising bibliometric data and networks. It involves an analysis of citation, bibliographic coupling, co-citation and co-authorship relations, which help to visualise the co-occurrence network relationship of the key terms derived from the extracted publication data. By offering insights into the dynamics of academic knowledge, the outcome of this paper emphasises key essential qualifications for systematic bibliometric analysis to understand the complexities of knowledge creation and dissemination in an interconnected academic world. Overall, this paper clearly presents the transformative role of bibliometric analysis in promoting research innovation and enhancing the understanding of bibliometric analysis as a vital tool in the humanities and social sciences.

Keywords: bibliometric analysis, PRISMA guideline, VOSviewer

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Introduction

Bibliometric analysis is a quantitative method aiming to analyse scholarly literature, publication trends, and citation networks. It helps to assess the impact, development, and structure of different academic fields systematically. This technique provides valuable insights into research productivity, influential works, and emerging areas of interest, thereby supporting strategic decision-making for researchers, institutions, and policymakers (Moed, 2005). By analysing large datasets of publications and citations, bibliometric methods enable comprehensive mapping of knowledge evolution, helping to identify key contributors and collaboration patterns within disciplines.

Social scientists increasingly employ bibliometric analysis due to its efficiency in managing and interpreting large volumes of scholarly information. It enables them to objectively evaluate the influence of research, collaboration networks, and thematic developments, facilitating evidence-based assessments of scientific productivity and impact. Furthermore, bibliometric tools facilitate benchmarking of researchers and institutions, inform funding allocations, academic recognition, and policy formulation. As subsequently supported by Donthu et al. (2021), Bibliometric analysis effectively addresses the large volume of academic publications, which enable high research impact. Consequently, effectively conducted bibliometric studies can establish substantial foundations for the knowledge mapping and networking of specific fields. It facilitates scholars to obtain a comprehensive overview in the academic arena, identify academic gaps, generate original research ideas, and determine prospective contributions within the discipline (Donthu et al., 2021).

Although it originated in data and information science, bibliometric analysis has increasingly gained significant popularity in the humanities and social sciences. Scholars utilise bibliometrics analysis to examine publication and citation trends, the dissemination of ideas, and the relationships between influential works within the disciplines. This paper then examines an increasing trend of applying bibliometric analysis in humanities and social science research. It subsequently discusses an application of bibliometric analysis using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guideline, which provides a structured framework for the systematic selection of publication data before applying VOSviewer, a software for constructing and visualising bibliometric data and networks. The software involves an analysis of citation, bibliographic coupling, co-citation and co-authorship relations, which help to visualise the co-occurrence network relationship of the key terms derived from the extracted publication data. The outcome of this paper will enhance an understanding of bibliometric analysis as a valuable tool for researchers in the humanities and social sciences to manage large amounts of academic journals and identify essential works among the vast number of publications.

Trend of Bibliometric Analysis in Humanities and Social Sciences Research

Initially, the bibliometric method has been used in specific disciplines, such as science and technology, health sciences and information sciences, to evaluate research impact and collaboration networks. According to the Scopus database, academic publications related to “bibliometrics” have been published since the early 1970s, indicating that this method is not a recent development. Regarding the fields of humanities and social sciences, the application of bibliometric analysis has seen a growing trend over recent years, reflecting an increasing recognition of its value in these fields. The scholars have increasingly adopted these

techniques to analyse publication patterns, the influence of academic works, and the evolution of disciplines.

According to an analysis of the Scopus database, 16,365 research publications (articles and proceedings) in arts, humanities, and social sciences related to "bibliometrics" were found. In the early 1970s, scholars applied bibliometrics analysis for different purposes. For example, Hubert (1977) employed bibliometric analysis to evaluate the productivity of journals in the social sciences. Koenig (1978) used the bibliometric method to analyse citation data within the arts and humanities literature. These publications were recognised as an early application of bibliometric analysis in the disciplines. During that time, this method was very limited, due to the nature of the subject and the lack of a suitable citation database (Koenig, 1978).

Figure 1

Number of Research in Arts, Humanities and Social Sciences by Year Which is Related to Bibliometrics Analysis

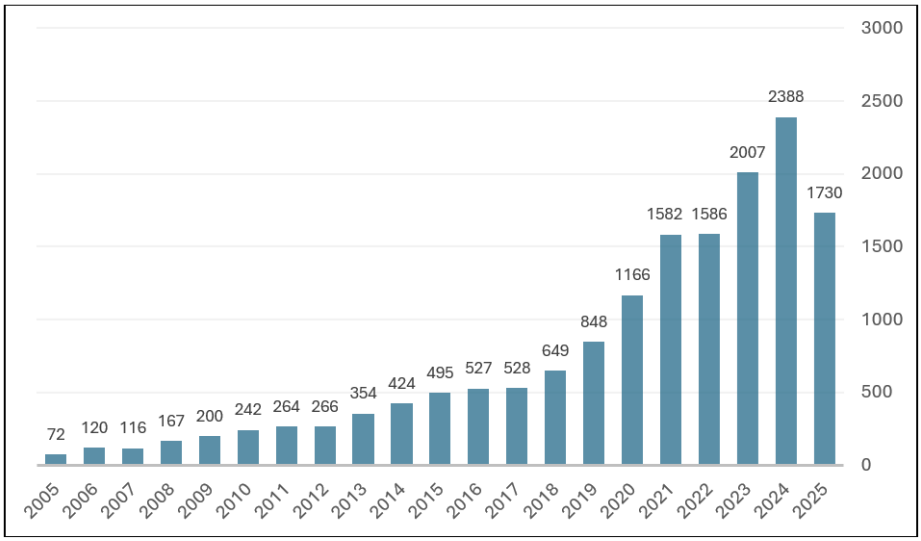

Figure 1 above presents the number of research articles in the arts, humanities, and social sciences by year, which is related to bibliometric analysis. The data retrieved from the Scopus database in the subject area of "arts and humanities" and "social sciences" using the keywords "bibliometric" and limited to the document types "article" and "conference paper."

It is observed that over the twenty years from 2005 to 2025. The data illustrates a lower number of publications than 100 during this time, beginning with 72 publications in 2005. Between 2005 and 2010, the number of publications increased gradually, indicating a foundational phase of research activity and a growing interest in the bibliometric method among scholars. Between 2010 and 2015, this upward trend continued, with more consistent growth and notable increases around 2013. The period from 2016 to 2020 shows a marked acceleration, culminating in a peak of 1,166 publications in 2020, nearly doubling the earlier figures and reflecting heightened research engagement towards this bibliometric method. The most significant surge occurs from 2021 to 2025, with the number of publications more than doubling again, reaching a peak of 2,388 in 2024. Although there is a slight decline in 2025, the overall upward trajectory remains evident. This growth trend highlights an increasing scholarly focus and productivity within these fields. Overall, the data demonstrate a dynamic and expanding landscape of research interest in bibliometric analysis across the arts, humanities, and social sciences over the past two decades.

Several academic research studies in the humanities and social sciences have successfully employed bibliometric analysis to explore disciplinary trends, influential scholars, and research networks. One example is a study by Hong and Zhanhao (2025) that utilises bibliometric techniques to assess research on dementia in the linguistics field. They examine 545 articles from 89 peer-reviewed journals between 1994 and 2023 to identify key bibliometric data and key research in the growing field of study, which will be beneficial for future research development. Similarly, Regalado-Pezua and Christofle (2025) applied bibliometric analysis to review the current advancements in sustainable smart cities, assessing the impact factor, evaluating the scientific output on the subject, and identifying potential research gaps. The researchers have worked on 2,758 research articles employing VOSviewer and systematic content analysis of the most cited publications. Through the application of bibliometric analysis, the researchers have identified research opportunities for future development in the economic and social dimensions of smart cities, which are essential for comprehending the broader implications of these technologies. In the field of Education, Alrefaee et al. (2025) have applied bibliometric analysis to assess online education research in India over the past decade, from 2014 to 2024, aiming to explore trends, patterns, and future research in the context of technological disruption challenges posed by the COVID-19 Pandemic. This study utilised data from 831 publications in the Scopus database. The research outcome offers valuable insights into the field of online education in India for policymakers, educators, and researchers.

The examples of the studies above are evidence of the diverse applications of bibliometric analysis within the arts, humanities, and social sciences, ranging from mapping research collaborations and thematic trends to assessing research impact. The methodologies facilitate a more systematic understanding of scholarly communication and evolution in these disciplines, complementing qualitative insights with quantitative evidence.

Tools for Bibliometric Analysis

A variety of tools and software applications are available to facilitate bibliometric analysis, each offering specific functionalities to examine scholarly data and publications. VOSviewer is widely recognised for its ability to visualise bibliometric networks, such as co-authorship, co-citation, and keyword co-occurrence, through interpretable maps (Van Eck & Waltman, 2010). Its strength involves processing large datasets efficiently and providing explicit visual representations of research landscapes. Similarly, CiteSpace is another prominent software that emphasises the detection of emerging trends and development in research frontiers, enabling dynamic visualisation of evolutions within scientific fields (Chen, 2006). It provides the users with both graph-based and timeline-based visualisations through a variety of tools and options (Van Eck & Waltman, 2014).

Additionally, bibliometric software such as BibExcel offers options for data preprocessing and statistical analysis, supporting more detailed quantitative assessments (Persson et al., 2009) BibExcel, created by Olle Persson, is a bibliometric analysis software that provides extensive capabilities and compatibility with other analytical tools such as Pajek, Excel, and SPSS. The key advantage of the program is its remarkable flexibility, allowing users to perform a variety of bibliometric analyses utilising multiple data sources beyond the Web of Science database, including non-bibliographic datasets. The software's adaptability facilitates advanced data management and analysis for users who comprehend the fundamental file structure requirements. However, due to its flexibility, some of the new users may find this software complicated to use (Persson et al., 2009). Collectively, these tools enhance the

capacity for systematic understanding of scientific productivity, collaboration patterns, and thematic evolution across disciplines.

The selection of appropriate software for bibliometric studies depends on specific objectives, the complexity of the data, and the user's familiarity with analytical platforms. These tools significantly advance bibliometric methodologies, enhancing our understanding of scholarly communication and research dynamics. This paper will focus on VOSviewer, a specialised software tool designed for bibliometric mapping and visualisation of scientific data, developed by the Centre for Science and Technology Studies at Leiden University. The software enables users to create visual representations of relationships among authors, publications, keywords, and institutions based on bibliometric data (Van Eck & Waltman, 2010). It uses a visualisation technique called "VOS mapping," which positions items in a two-dimensional space such that the distance between them reflects their relatedness or similarity. Additionally, the size and colour of nodes can represent various attributes, such as citation counts, citation impact, or thematic clusters. It could be seen that, unlike other tools, VOSviewer presents distance-based visualisations of bibliometric networks, focusing solely on the nodes without displaying the edges that connect them. The visualisations highlight that the proximity between two nodes generally indicates their relatedness. VOSviewer is especially effective at visualising larger networks by utilising distance-based rather than graph-based visualisations. While it is more specialised in visualisation, it offers specific features for text mining (Van Eck & Waltman, 2010).

The benefits of VOSviewer include its user-friendly interface, versatility, and ability to handle large datasets efficiently. It allows for the visualisation of complex networks, revealing underlying structures and emerging trends within scholarly fields (Van Eck & Waltman, 2014). The software supports various types of analyses, including co-authorship, co-citation, bibliographic coupling, and keyword co-occurrence, providing comprehensive insights into the scientific landscape. Its visualisation capabilities help researchers and policymakers identify influential entities and collaboration patterns effectively, thereby enhancing strategic decision-making processes. Furthermore, VOSviewer is freely available and well-documented, making it accessible and easy to use in diverse research contexts (Van Eck & Waltman, 2010). Overall, VOSviewer is a valuable tool for conducting and visualising bibliometric analyses, contributing to a deeper understanding of the structure and dynamics of scholarly knowledge.

PRISMA Guideline and Applications of Bibliometric Analysis

The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guideline provides a structured framework for the systematic selection of data, ensuring transparency and reproducibility in the review process. It includes a diagram illustrating the flow of information through the various phases of a systematic review, as well as a checklist of items to include when reporting a systematic review or meta-analysis (Moher et al., 2009). In this study, a four-stage diagram of the information flow through the different phases of a systematic review will be used as guidance for conducting bibliometric analysis. The four-stage diagram is: identification, screening, eligibility and include. The initial step involves defining explicit inclusion and exclusion criteria based on research objectives, such as time frame, publication type, language, geographical location, and relevant keywords or subject areas. These criteria help refine the dataset and ensure that only pertinent literature is considered for analysis.

Subsequently, comprehensive searches are conducted across relevant bibliographic databases, such as Web of Science, Scopus, or Google Scholar, that encompass the scope of the research domain. The search results are screened through a two-stage process: an initial screening of titles and abstracts to eliminate irrelevant or duplicate records, followed by a full-text review for final inclusion. This process is systematically documented using a PRISMA flow diagram, which details the number of records identified, screened, included, and excluded at each stage, along with reasons for exclusion (Moher et al., 2009).

Data extraction involves recording key information, such as publication year, authorship, keywords, citations, and thematic focus, governed by predefined protocols to maintain consistency. This approach ensures that the selected database accurately reflects the current state of scholarship within the humanities and social sciences, providing a foundation for subsequent bibliometric analysis (Moher et al., 2009).

Subsequently, to conduct a bibliometric analysis of humanities and social science research, VOSviewer will be applied to extract meaningful insights from scholarly data. Initially, relevant bibliometric data must be compiled from databases such as Web of Science, Scopus, or Google Scholar, focusing on publications, citations, authorship, keywords, and institutional information relevant to the research domain (Van Eck & Waltman, 2010). The data should be exported in formats compatible with VOSviewer, typically as plain text or CSV files.

The next step is importing the dataset into VOSviewer, followed by selecting the appropriate analysis type, such as co-authorship, co-citation, bibliographic coupling, or keyword co-occurrence. These analyses enable exploration of collaboration networks, influential works, thematic clusters, and intellectual structures within the field. Adjustments to parameter settings, such as the minimum number of occurrences or citations, are made to refine the visualisation by emphasising the most significant patterns and removing noise (Ozturk et al., 2024).

Subsequently, VOSviewer generates visual maps displaying relationships among authors, publications, or keywords. These visualisations reveal clusters that indicate research themes or collaboration groups, with proximity representing relatedness and node size reflecting influence or productivity. Interpreting these maps involves identifying core contributors, emerging research topics, and potential interdisciplinary connections. Exporting the visualisations and underlying data allows for further analysis and integration into scholarly reports or presentations (Van Eck & Waltman, 2010).

It is clearly seen that this systematic approach enables scholars in the humanities and social sciences to visualise complex intellectual landscapes, identify influential actors and themes, and track research trends over time, thereby enhancing understanding of scholarly dynamics within these disciplines.

Conclusion

The application of bibliometric analysis in the humanities and social sciences has experienced a significant rise, primarily facilitated by advanced visualisation tools such as VOSviewer. This technique allows researchers to systematically map and analyse the intellectual landscape of these disciplines, including collaboration networks, thematic trends, and influential publications. The visualisations produced by VOSviewer enable scholars to identify core research themes, key contributors, and emerging areas of interest, thereby

providing a comprehensive overview of the scholarly landscape. Such insights are invaluable for guiding future research directions, collaborations, and assessing the impact of specific works or authors.

The growing trend of utilising bibliometric analysis in these fields enables a shift toward more quantitative and systematic approaches to understanding scholarly communication. Despite the traditional association of the qualitative method with the humanities and social sciences, the integration of bibliometric methods offers a balanced perspective by supplementing qualitative insights with quantitative evidence. VOSviewer's user-friendly interface and powerful visualisation capabilities have made it an essential tool for academics seeking to efficiently and meaningfully explore large datasets.

Furthermore, applying the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines enhances the transparency of bibliometric studies in these fields. By following the flow diagram of PRISMA, researchers can systematically select relevant literature, document their search and screening processes, and present their findings in an organised manner that improves data analysis. This structured approach ensures that bibliometric analysis accurately reflects the scope of research and minimises biases.

In conclusion, bibliometric analysis, particularly through the use of flow diagram of PRISMA and VOSviewer software, has become an increasingly valuable method in humanities and social sciences research. It enhances the understanding of disciplinary structures, research trends, and scholarly impact, offering valuable insights for researchers, institutional policymakers, and funding bodies. As the dissemination of scholarly publications continues to grow in recent years, these tools will increasingly support efforts to map and interpret the evolving academic landscape.

Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

The author declares that Grammarly, an AI-assisted writing software, was used in proofreading and refining the language used in the manuscript. The usage was limited to correcting grammatical and spelling errors and rephrasing statements for accuracy and clarity. The author further declares that, apart from Grammarly, no other AI or AI-assisted technologies have been used to generate content in writing the manuscript. The ideas, design, procedures, findings, analyses, and discussion are originally written and derived from careful and systematic conduct of the research.

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