Bibliometric Analysis of Financial Literacy Level

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ABSTRACT

Financial literacy level refers to the overall understanding of an individual's competency in managing finances. This article presents a bibliometric study on financial literacy. It was conducted using VOSviewer 1.6.18 to assess worldwide research trends, focusing on publication growth, publishing outputs by country, themes of interest, and co-occurrences of author keywords. Bibliometrics is a relatively new research methodology that has grown into a well-established aspect of information research and a quantitative approach to document description. The Scopus database obtained 563 papers published between 2019 and 2023. The literature search statistics indicate a decreasing trend in publishing outputs. Most of the papers came from scholars in the United States, followed by India and China. The keyword "financial literacy" appears most frequently in articles, followed by "financial knowledge." A closer examination of author keyword co-occurrences revealed that "financial literacy" had 242 instances. These findings could guide future research into under-explored aspects of financial literacy.

Keywords: *bibliometric analysis, financial literacy level, Scopus database, VOSviewer*

INTRODUCTION

The secret to unlocking the future is financial literacy, which is more than a trendy term. Making wise financial decisions, investing, and setting money aside for the future making prosperous ends meet. Knowing the fundamentals of money management can improve an individuals' financial situation, regardless of the period when making retirement plans. Therefore, this study examines how financial literacy may empower taking charge of new chances for personal financial management.

The purpose of this study is to define the pattern of financial literacy levels using statistical analysis. Additionally, the study aims to analyse the features of studies on financial literacy and levels using data accessed from the Scopus online database by focusing on two keywords: "Financial Literacy" and "Level." It establishes new insights for future studies by utilising bibliometric analysis approaches with the Scopus database.

This paper provides broad perspectives by examining the pattern of academic financial literacy-related publications by year, type of access, topic area, subject title, nation, document type, citation scores, source type, and keywords. As a result, this research will offer new ideas for future researchers in evaluating future directions and providing relevant suggestions for financial literacy levels. Furthermore, this study's bibliometric analysis helps to understand general descriptions of the subjects in question and identify emerging lines of research. VOSviewer is used to develop bibliometric citations, co-citations, and shared word maps.

This study is structured into several sections: the first section provides a chronological review of the literature, grouping selected articles from various eras. The second section explains the methodology employed in conducting the bibliometric analysis, providing detailed information on data collection and sampling strategies. The third section deals with the investigation and assessment of the accompanying bibliometric maps, while the last section discusses the results and recommendations.

LITERATURE REVIEW

Financial literacy has become a multidisciplinary study in recent years. The concept evolution of financial literacy was adopted by Muñoz-Céspedes et al. (2021). The evolution of financial literacy can be explained as follows: It dealt with the first research on money management from 1797 to 1990; the phrase "financial literacy" boomed from 2000 to the 2008 crisis; following the crisis until 2013, various definitions and indicators of financial literacy appeared; and finally, from 2014 to 2021, financial literacy was viewed as a multidisciplinary study.
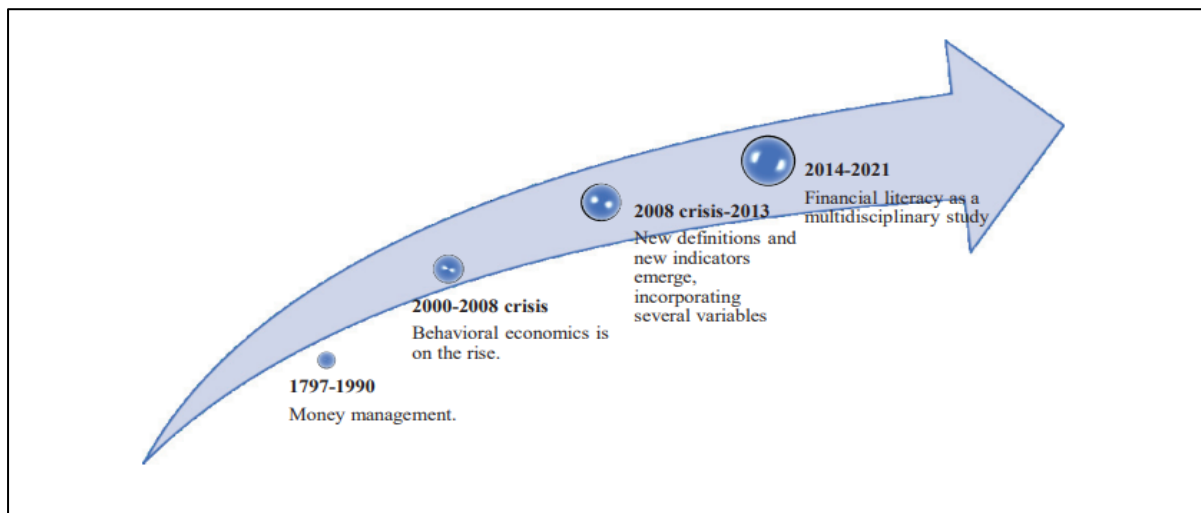

Figure 1: Evolution of Financial Literacy (Muñoz-Céspedes et al. 2021)

The bibliometric analysis and literature review on financial literacy level studies are important for organising and evaluating the number of publications. Additionally, a bibliometric analysis can help study the evolution of published themes. A literature review and bibliometric analysis can connect earlier and more contemporary studies, identify knowledge gaps and recommend new lines of inquiry (Demartini & Beretta, 2020).

Numerous studies have been published on financial literacy levels (Ingale & Paluri, 2022; Vijay Kumar & Senthil Kumar, 2023; Idris et al., 2023; Damayanti et al., 2023). Safira et al. (2023) used the Scopus online database and VOSviewer tool to study research on the term "financial literacy." This allowed researchers to further analyse financial literacy in research publications using the VOSviewer tool for data collection.

There are few summaries of the completed bibliometric analysis on financial literacy (Safira et al., 2023). This study measured bibliometric analysis from 254 papers across 197 journals between 2006 and 2023. The results indicate that publications about financial literacy are still on the rise. First published in 2006, research on financial literacy has been increasing, reaching a high in 2022. The economic significance of financial literacy is the most frequently cited topic.

Innovation and Research Policy holds the record for the most citations among published journals. In terms of publications on this subject, the United States and the United Kingdom rank first and second, respectively. According to document citation categories, Australia comes in second with 341 citations, while the United States leads with 2,780. The literature search on financial literacy and investment decisions provided by this study acknowledges several limitations that should be addressed in future research (Safira et al., 2023).

Another article stated that between 1997 and 2021, a total of 1,211 articles were discovered and narrowed down to 768 papers (Vijay Kumar & Senthil Kumar, 2023). Using the R programming language and the VOSviewer tool, each paper was analysed from various angles, including co-authorship, co-citation, conceptual structure, co-word occurrence, trend topics analysis, thematic map, topic dendrogram, three-field plot diagram, and visualisation analysis. The United States ranks highest in publication output among countries. The analysis shows that authors from the USA, India, Malaysia, and the United Kingdom had co-authorship citations. 97 countries are working on financial literacy research through co-authorship, with a minimum of five papers required for a country to be included.

This article contains a comprehensive discussion of Scopus-published research on financial literacy levels, identifying the total number of publications, the 10 most-cited journals, the most-cited articles, the authors, and other relevant details. The objective of bibliometric analysis on the financial literacy levels is to map the variables, analyse and integrate the literature to provide ideas for future research, especially in this area of study.

While many researchers use the Web of Science database to analyse research publications, this study gathers data from the Scopus database. The bibliometric literature on financial literacy levels suggests aspects of the study, such as year, type of access, topic area, subject title, nation, document type, citation scores, source type, and keywords for the analysis.
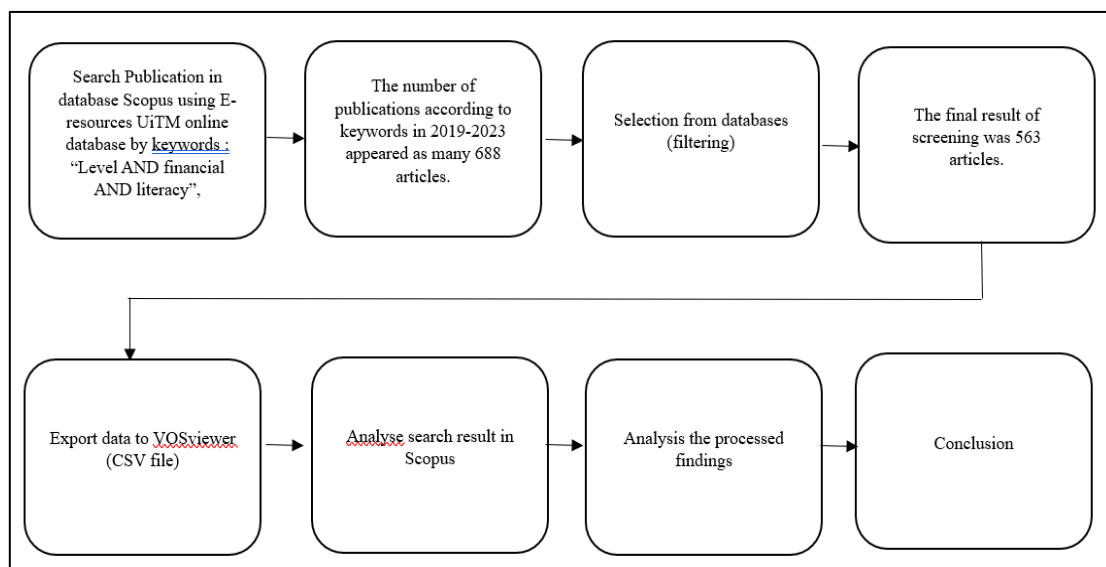
METHODOLOGY

Figure 2: Research methods

Figure 2 above defines the steps of the research methods taken for the bibliometric analysis financial literacy levels. The bibliometric analysis of financial literacy levels was conducted on November 4, 2023, using data gathered from the Scopus database. Scopus, which provides access to peer-reviewed publications, was chosen as the database to search for relevant literature. There are numerous methods to highlight the term "Level AND financial AND literacy." Scopus, one of the largest databases for citations and abstract literature, including books, conference proceedings, and scientific journals, was utilised. The initial search identified 688 journals, which later reduced to 125 after removing documents that were not classified as articles, reviews, letters, or notes. Thus, the final number of analysis papers was 563.

This research study aims to extract and analyse data from published scientific articles from the Scopus engine. The Scopus search results, comprising 563 analysis papers, were sorted by access title, type, year, country, topic area, language, and source title.

The study uses VOSviewer tool as a complement to the analysis. VOSviewer tool also presents graphic images of bibliographic materials. The programme creates maps by integrating bibliographical information, citation information, quotations, abstracts and keywords, and finding details after retrieving data in saved Excel (CSV) format. Therefore, it has advantages in visualisation (Alam et al., 2023).

The Scopus database was used to gather research information on this subject. Elsevier's Scopus website hosts the largest database of academic literature based on abstracts and peer-reviewed citations. The author selected this database because it generated the most topic-related data. Additional criteria for inclusion and exclusion were the publication period (2019–2023), article sources, keywords ("Level AND financial AND literacy"), all subject areas, and article sources.

The data was recorded in CSV format exported for additional study using the VOSviewer tool. The bibliographic data, including abstracts and keywords, citation data, and other pertinent information, was extracted. Using the Scopus analysis tool, this data was examined further, and a publication trends map was created for 2019–2023. After exporting the complete data in CSV format, the VOSviewer tool additionally mapped this data more thoroughly to create three information constructs: co-author, organisation and country, and co-citation and keywords.

RESULT AND DISCUSSION

This study aims to assess the trend of articles regarding financial literacy and provide both a statistical and visual analysis. The Scopus database and VOSviewer version 1.6.18 are used to analyse financial literacy levels in these articles.

Analysis by Year

The search query yielded 563 results in the Scopus database. Figure 3 depicts the development of the number of publications on financial literacy levels at five-year intervals from 2019 to 2023. Over the years, the trend in the number of publications has fluctuated. Initial publishing began in 2019, and it continued to rise until it fluctuated in 2021 by 19%. It grew in 2022, but the graph began to decline in 2023, dropping from 27% to 22%. From 2019 to 2023, the number of publications on financial literacy levels fluctuated over the five years, with totals of 61.93, 118.23, 106.97, 152.01, and 123.86, respectively. The fewest publications on financial literacy levels were in 2019 when the study began to be carried out steadily.
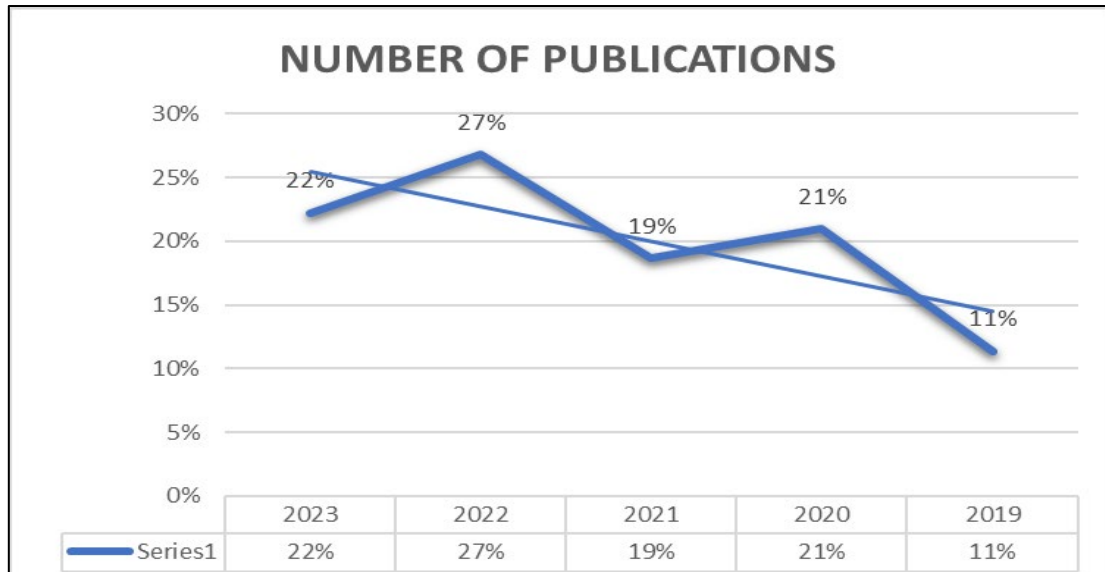
Figure 3: Number of publications

Analysis of Subject Area and Source Title

Figure 4 illustrates the number of publications by subject area. From the graph below, it is clear that the majority of publications on financial literacy levels are in the fields of economics, econometrics, and finance, with the highest total of 337 publications (31%). This is followed by business, management, and accounting with 262 publications (24%) and social science with 253 publications (23%). Other subject areas include psychology with 39 publications (4%), computer science with 34 publications (3%), environmental science with 30 publications (3%), arts and humanities with 26 publications (2%), energy with 23 publications (2%), engineering with 22 publications (2%), decision science with 20 publications (2%), medicine with 12 publications (1%), mathematics with 8 publications (1%), and lastly, agricultural and biological sciences with 7 publications (1%).
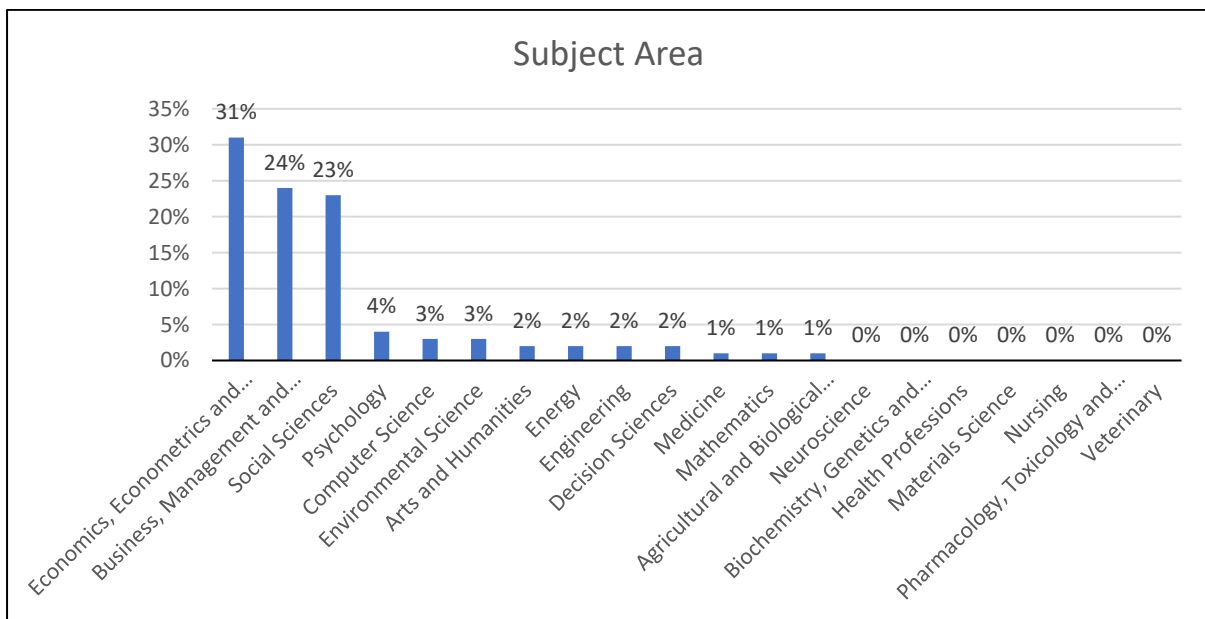

Figure 4: Publications by subject area

Analysis of Document Type

Figure 5 depicts the publications according to document type, which includes articles, book chapters, reviews, books, and conference papers. According to Figure 5, the majority of documents on financial literacy levels are articles, which account for 90% of the total. Book chapter publications account for 4%, while reviews and books account for 3% and 2%, respectively.
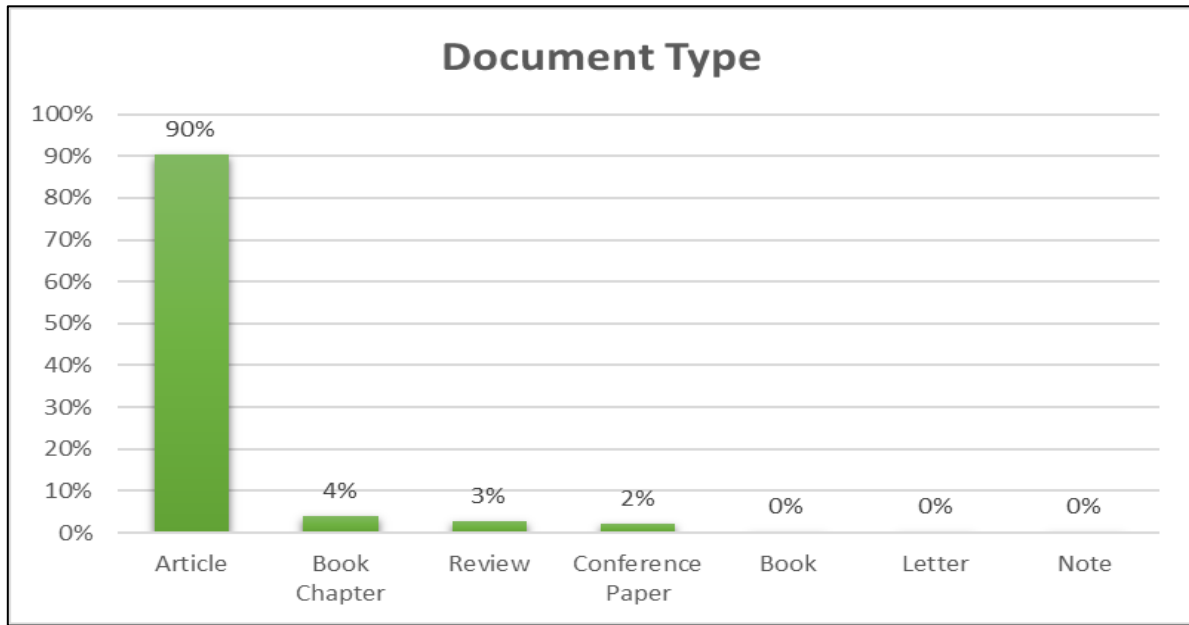

Figure 5: Publications by Document Type

Analysis of Citation Scores

Table 1 shows the list of the highest-cited publications in the financial literacy field from 2019 to 2023. The table provides information about each document, including the year of publication, the source of the document, and its citation score. This allows for an analysis of the top-cited publications in financial literacy. The source with the highest citation count is the International Journal of Consumer Studies, with 321 citations in 2021. Other highly cited sources include Forum for Social Economics (96), FIIB Business Review (82), Managerial Finance (79), Journal of Family and Economic Issues (62), International Journal of Bank Marketing (61), International Journal of Consumer Studies (60), Economics of Education Review (57), and Journal of Consumer Research (56).

Table 1: The Top Ten Highest Cited Publication in The Financial Level

No	Document title	Year	Source	Citation Score
1.	Financial literacy: A systematic review and bibliometric analysis	2021	International Journal of Consumer Studies, 45(1), pp. 80–105	321
2.	Financial inclusion research around the world: A review	2021	Forum for Social Economics, 50(4), pp. 457–479	96
3.	Association of Financial Attitude, Financial Behaviour and Financial Knowledge Towards Financial Literacy: A Structural Equation Modeling Approach	2019	FIIB Business Review, 8(1), pp. 51–60	82
4.	How financial literacy and demographic variables relate to behavioral biases	2019	Managerial Finance, 45(1), pp. 124–146	79

5.	Competence, Confidence, and Gender: The Role of Objective and Subjective Financial Knowledge in Household Finance	2020	Journal of Family and Economic Issues, 41(4), pp. 626–638	67
6.	Financial Knowledge and Short-Term and Long-Term Financial Behaviors of Millennials in the United States	2019	Journal of Family and Economic Issues, 40(2), pp. 194–208	62
7.	Subjective financial knowledge, prudent behaviour and income: The predictors of financial well-being in Estonia	2019	International Journal of Bank Marketing, 37(4), pp. 934–950	61
8.	Consumer's subjective financial well-being: A systematic review and research agenda	2021	International Journal of Consumer Studies, 45(4), pp. 750–776	60
9.	The effects of high school personal financial education policies on financial behavior	2020	Economics of Education Review, 78, 101786	57
10.	On a need-to-know basis: How the distribution of responsibility between couples shapes financial literacy and financial outcomes	2019	Journal of Consumer Research, 45(5), pp. 1013–1036	56

Analysis of Source Type

Financial literacy has been a topic of debate since its early stages and remains an important issue among researchers. As shown in the pie chart below, journals account for the highest percentage of publications, at about 94%. This is followed by books, book series, and conference proceedings, each accounting for 2% of the publications.
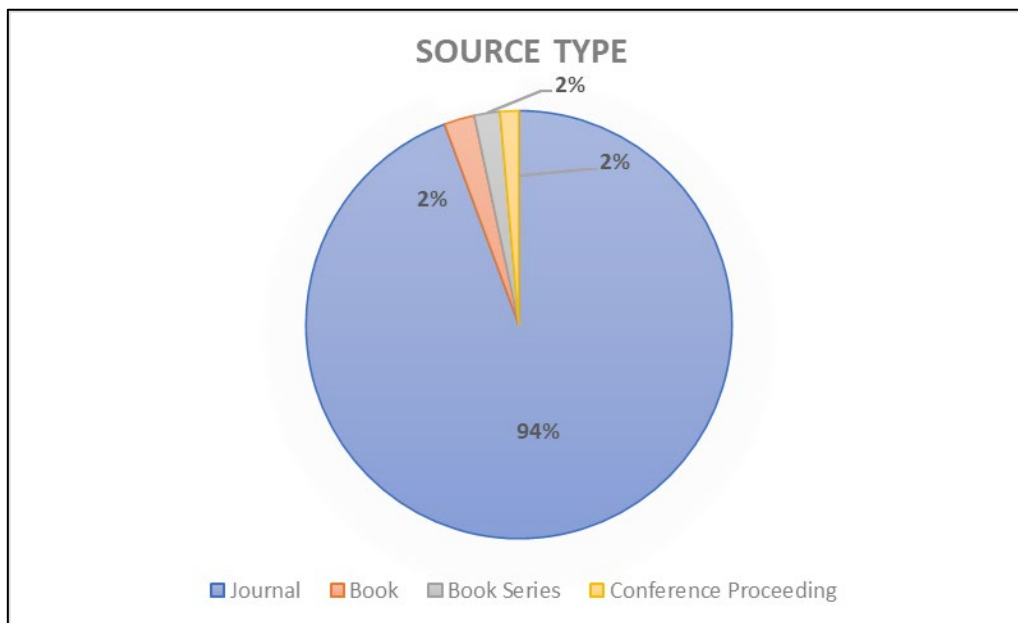
Figure 6: Publications by Source Type

Analysis of Productive Country

As seen in Figure 7, the majority of articles are written by authors from the United States. Articles can, of course, include authors from multiple nations; in these cases, contributions will help both countries enhance their publication of articles related to financial literacy levels. This study highlights the countries with the most financial literacy level articles based on author affiliation. For inclusion, a minimum of 10 countries with the highest citations were selected. The United States has published the most articles on financial literacy (88), followed by India (67), China (28), Australia (22),

the Russian Federation (15), Brazil (11), Canada (8), Saudi Arabia (6), Ethiopia (2), and Kazakhstan (1).
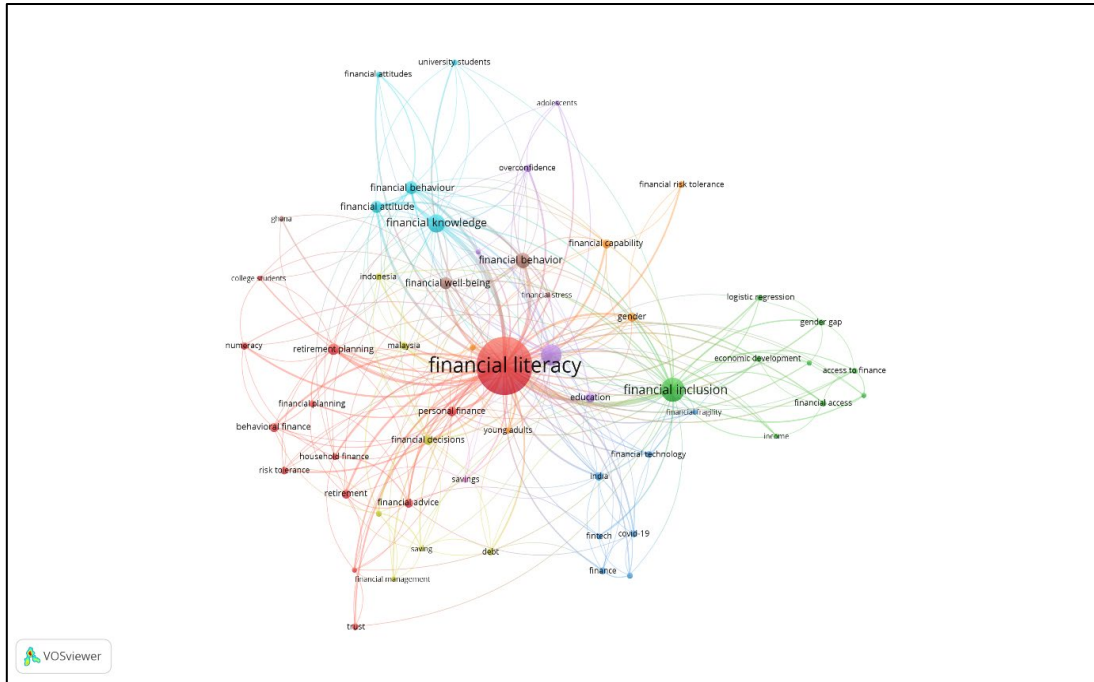

Figure 7: Publications by Countries

Analysis of Keyword Co-occurrence

A graphical bibliometric map for financial literacy levels was constructed using VOSviewer version 1.6.18 to observe keyword co-occurrences. When using the overlay visualisation option, the size of the bubble indicates the frequency of appearance of the phrase. The width of the lines and the distance between the bubbles indicate the strength of the relationship, and the colours denote clusters. The bibliometric map for author keyword co-occurrence is shown in Figure 8. The author keyword "financial knowledge" has the strongest links with "financial literacy," as it appears most frequently among all keywords. Individuals with strong financial literacy typically possess a deeper understanding of financial issues and exhibit better financial behaviour. Conversely, individuals with greater financial knowledge tend to excel in managing their finances. This correlation between financial knowledge and financial literacy underscores their intertwined nature and mutual reinforcement.

Table 2 presents a summary of topics of interest related to financial literacy levels. The most frequently co-occurring terms include "financial knowledge" (89 times), "financial education" (83 times), "financial inclusion" (60 times), "financial behaviour" (47 times), "financial well-being" (28 times), "retirement planning" (21 times), and "personal finance" (19 times).

Figure 8: Bibliometric Map by VOS Viewer

Table 2: Summary of Financial Literacy Level

No	Item(s)	Link Strength
1.	Financial literacy	242
2.	Financial Knowledge	89
3.	Financial education	83
4.	Financial inclusion	60
5.	Financial behaviour	54
6.	Financial attitude	51
7.	Financial behaviour	47
8.	Financial well-being	28
9.	Retirement planning	21
10.	Personal finance	19

CONCLUSION

Bibliometric analysis is an innovative and fascinating technique for examining the organisation and direction of previous research. In this article, we explore financial literacy level research from a broader perspective by considering all relevant publications on the topic. By employing a bibliometric analysis approach, we aim to uncover the evolution of financial literacy level research between 2019 and 2023.

However, the quantity of publications fluctuated gradually from 2019 until 2023, with the lowest number of publications in 2019. Scopus indexed a final total of 563 papers on financial literacy. The findings revealed that most financial literacy publications are focused on economics, econometrics, and finance. Articles were found to be the most influential document type in the study of financial literacy.

The Forum for Social Economics, FIIB Business Review, and Managerial Finance are the most frequently cited sources or scientific publications in financial literacy research, as indicated by the citation analysis's findings. The findings suggest that the United States, India, and China are the countries with the greatest emphasis on the topic of financial literacy.

The results of this study can assist aspiring and seasoned researchers in identifying new areas of study interest, pertinent sources, opportunities for collaboration, and how to make well-informed decisions. An exploratory bibliometric analysis of publications on financial literacy levels was carried out in this study. "Financial Knowledge" and "Financial Education" are topics discussed between 2019 and 2023.

The study demonstrated the connection between global scientific cooperation and financial literacy research efficacy. Research conducted in collaboration with foreign nations was found to have a higher citation effectiveness than its scientific output. It points to potential study locations and emphasises the most discussed problems in the field. This study can offer crucial information for developing financial literacy and education policies.

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AUTHORS' CONTRIBUTION

Auryn Rahiem, Hasyeilla Abd Mutalib, and Norhisam Bulot conceived and plan the experiments. The experiments and data collection were conducted by Auryn Rahiem. The stimulations were prepared and carried out by Auryn Rahiem while Hasyeilla Abd Mutalib and Norhisam Bulot assisted with the interpretation of the findings. Auryn Rahiem took the lead in writing the manuscript. All authors gave critical feedback and contributed to the development of the research, analysis, and manuscript.

CONFLICT OF INTEREST DECLARATION

We certify that the article is the Authors' and Co-Authors' original work. The article has not received prior publication and is not under consideration for publication elsewhere. This research/manuscript has not been submitted for publication nor has it been published in whole or in part elsewhere. We testify to the fact that all Authors have contributed significantly to the work, validity and legitimacy of the data and its interpretation for submission to Jurnal Intelek.

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