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Financial Literacy and Its Influence on Financial Decision: A Bibliometric Approach

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ABSTRACT

Financial literacy is critical in influencing financial decisions, particularly in today's complex financial market where individuals are constantly confronted with a diverse range of financial goods, complex investing possibilities, and ever-changing economic situations. The significance of making informed and wise financial decisions, including budgeting, savings, investments, and retirement planning, cannot be overstated. This prompts a gaining interest in financial literacy and its impact on financial decisions. More researchers are looking into various facets of financial literacy and how it affects individual's and society's financial well-being, subsequently paving the way for a better knowledge of this vital topic. Therefore, this study aims to highlight the current research trend on financial literacy influencing financial decisions. It involved a bibliometric analysis of data retrieved from the Scopus database by focusing on keywords related to financial literacy and financial decision-making. A total of 417 relevant documents were obtained for detailed analysis. Several analytical tools were used in this study, including Microsoft Excel for frequency analysis, VOSviewer for data visualization, and Harzing's Publish or Perish for citation metrics and analysis. The results were presented using typical bibliometric indicators, such as publication year, keyword analysis, geographical distribution, authorship, active institutions, and citation analysis. The findings showed a significant increase in financial literacy publications since 2014, highlighting the growing relevance of financial literacy and its broader societal impacts.

Keywords: *bibliometric analysis, financial decision, financial literacy, trends*

INTRODUCTION

Recent years have witnessed a great deal of focus on financial literacy, which is the ability to comprehend and navigate the complex world of finances. Its relevance is evident in the daily decisions that individuals make regarding their savings, investments, and debt. The increasing amount of research in this field resulted from a growing understanding of its implications for individual financial well-being and the consequences it has on societies and economies as a whole. Scholars such as Lusardi (2014) emphasized that financial literacy influences economic stability and growth on a broader scale

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than personal finances. Moreover, researchers have delved deeper into the complex nature of financial behavior influenced by financial literacy. Robb and Woodyard (2021) investigated the relationship between financial literacy and various financial behaviors, such as credit card usage, timely utility payment, and retirement planning. They found that individuals with higher levels of financial literacy exhibit responsible financial behavior across all these domains. In addition, Gale and Holmes (2021) investigated the mediating role of financial literacy in addressing financial concerns and strategies. Their research demonstrated that financially literate individuals are more likely to seek professional financial advice and make prudent financial decisions, thereby fostering financial resilience.

As the body of research on financial literacy grows, so does the need to systematically synthesize and analyze this knowledge. At this point, bibliometric analysis becomes essential because it provides a comprehensive and structured view of the financial literacy landscape by employing rigorous bibliometric techniques to assess publication trends, key authors, influential institutions, and the development of research topics. It enables a nuanced comprehension of the field's evolution over time and the identification of areas requiring additional research.

Consequently, this paper reports a bibliometric analysis of the relationship between financial literacy and financial decision-making that is driven by a dual purpose. First, it aims to fill an existing void in the literature by providing a comprehensive and recent list of resources. Due to the ever-increasing volume of research on financial literacy, stakeholders, such as policymakers, educators, and financial service providers, require an extensive body of synthesized knowledge to guide their strategies and decisions. The present study seeks to address this gap by developing a valuable tool for evidence-based policymaking, curriculum development, and financial product design. This can enhance the present understanding of how financial literacy is conceptualized and applied in various contexts through a systematic analysis of research trends and theoretical frameworks, ultimately serving as a foundational resource for academics, practitioners, and policymakers. Meanwhile, the second purpose of this bibliometric study is to contribute towards the theoretical foundations of financial literacy. It recognizes that financial literacy is a dynamic, context-dependent phenomenon influenced by cognitive processes, emotions, and social factors (Lusardi, 2014). By consolidating and analyzing the wealth of research in this field, this study seeks to facilitate collaborative efforts, nurture interdisciplinary insights, and ultimately contribute to more informed financial decisions at both individual and societal levels.

The objectives of this bibliometric study on financial literacy encompass several crucial dimensions. It shall begin with a comprehensive analysis of publication trends by examining the annual number of publications. This will be followed by an identification of influential authors and institutions that have made substantial contributions to the field by analyzing the authorship and citation metrics. The analysis shall conclude with an examination of keyword usage in the literature by distinguishing the most frequently used keywords and examining their trends over time.

The structure of this paper is outlined as follows. The first section describes the evolution of literature in the field of financial literacy while the second section explains the methodology and search strategy flow chart employed for this study. The third section discusses the outcomes and analyses of the pertinent bibliometric indicators with the incorporation of tables and figures for bibliometric analysis. The final section ends with conclusions and recommendations.

LITERATURE REVIEW

In recent years, financial literacy has emerged as a significant influence on the financial decision-making processes of individuals. As the financial landscape becomes more complex and diverse, individuals' financial well-being is closely linked to their level of financial literacy.

Numerous studies have consistently demonstrated that financial literacy is a crucial determinant of responsible financial behavior across a broad spectrum of domains. Kawamura et al. (2020) and Kumar et al. (2017) set the foundation by emphasizing the essential role of increased financial literacy in facilitating well-informed and prudent financial decisions, including savings, investments, and debt management. Such perspective is further expanded by Lusardi (2014) who revealed the intricate interplay between financial literacy, individual financial behavior, and the broader societal context. Her work illuminates the rippling effects of financial literacy, which extend beyond individual actions to impact entire communities, nations, and societies.

Asaad (2015) delved deeper into the components of financial literacy by emphasizing the importance of both financial knowledge and confidence. These elements mutually reinforce one another, with knowledge serving as the foundation and confidence as the catalyst for making sound financial decisions. Recent research by Agarwal and Mazumder (2021) confirms the positive correlation between financial literacy and prudent savings behavior. This follows earlier findings by Behrman et al. (2015) where individuals with greater financial literacy are more likely to engage in regular savings practices, establish emergency funds, and adhere to structured budgeting.

The context of investment decisions is another area where financial literacy has a significant impact. Alzahrani et al. (2023) emphasized the impact of financial literacy on investment choices, indicating that individuals with greater financial knowledge tend to make more diversified and informed investment decisions. It is aligned with the findings of Mitchell and Lusardi (2018), who highlighted the importance of financial literacy not only for investment decisions but also for retirement planning and long-term financial security. Additionally, the effectiveness of financial literacy also extends to debt management. Brown et al. (2020) found that individuals with higher levels of financial literacy are more likely to make informed borrowing decisions, effectively manage debt, and avoid excessive debt loads, thereby contributing to their long-term financial stability. Furthermore, Robb and Woodyard (2021) highlighted the multifaceted nature of financial behavior by demonstrating how financial literacy influences various aspects, such as credit card utilization, timely bill payment, and retirement planning. Their findings demonstrated that individuals with a higher level of financial literacy exhibit responsible financial behaviors across these various domains, reinforcing the extensive impact of financial literacy on overall financial well-being.

Meanwhile, Gale and Holmes (2021) examined how financial literacy mediates the relationship between financial concerns and strategies. Their findings showed that individuals with higher levels of financial literacy are more likely to seek professional financial advice and make prudent financial decisions in the face of financial concerns. This suggests that financial literacy functions as a buffer against financial concerns and plays a vital role in fostering financial resilience. Xu and Zia (2018) emphasized the significance of financial literacy in promoting financial inclusion and enhancing the financial well-being of underprivileged populations. Their research revealed that interventions designed to improve financial literacy can effectively combine financial knowledge with access to financial services, thus enabling underserved populations to make informed financial decisions. Additionally, Baihaqqy et al. (2020), Dewi et al. (2020), and Bongomin et al. (2018) further emphasize the role of financial literacy in empowering underprivileged populations. The research by Xue et al. (2020) investigated the mediating role of financial literacy in addressing financial concerns, while the findings by Fachrudin and Fachrudin (2016) shed light on its synergy with education for bolstering informed investment choices, ultimately demonstrating the diverse and profound impact of financial literacy on financial behaviors and choices in a variety of contexts.

METHODOLOGY

Bibliometric analysis is a quantitative research technique that systematically analyzes and evaluates scientific publications and their attributes, allowing the identification of patterns, trends, and relationships within a specific field of study (Leydesdorff & Vaughan, 2006). This analytical approach examines bibliographic data, including citations, to gain valuable insights into the scholarly communication process and the influence of scientific research (Waltman, 2016).

In this study, the Scopus database served as the primary source for collecting a thorough compilation of articles on financial literacy and financial decisions. Scopus was selected due to its status as the largest index comprising journals, book series, conferences, and proceedings that are ranked according to their citation impact. Figure 1 shows an intricate visual representation of the sequential stages involved in the search strategy and subsequent bibliometric analysis procedures.

The search timeframe was set between 2014 to 2023. All source types were considered during the search, leading to the use of the terms "financial literacy" and "financial decision". The screening process generated a total of 417 records, all of which met the inclusion criteria for the study and thus became the focus of a comprehensive bibliometric analysis. Various tools were employed to facilitate the analysis. Firstly, Microsoft Excel was utilized to compute the frequencies of the published materials and to create the corresponding chart and graph. Secondly, VOSviewer (available at www.vosviewer.com) was employed to construct and visualize the bibliometric networks. Lastly, Harzing's Publish and Perish software was used to calculate the citation metrics and other frequencies.

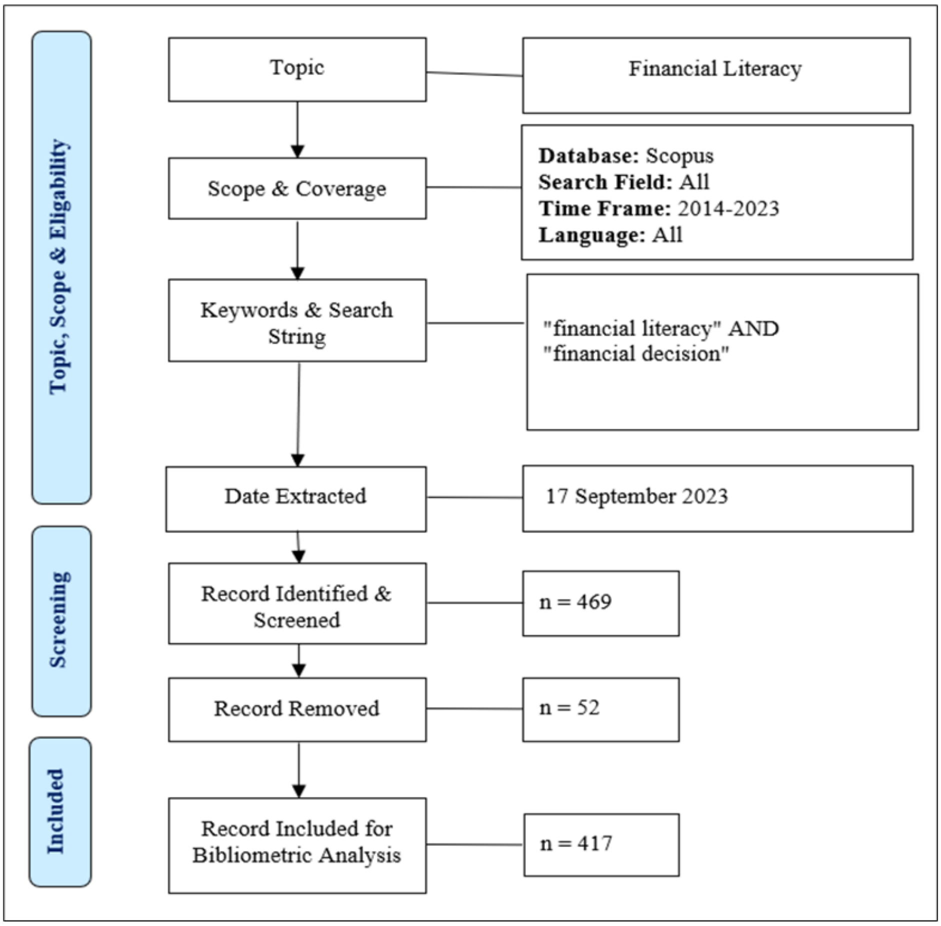

Figure 1: PRISMA Flow Diagram

RESULTS AND DISCUSSIONS

Year of Publications

According to the data presented in Table 1, there has been a notable increase in the number of publications throughout the years. In 2014, there were 13 publications, accounting for 3.12% of the total output. However, in 2022, academic productivity reached its peak with 71 publications or 17.03%

of the cumulative output. In the year 2023, a total of 53 publications made a significant impact, accounting for 12.71% of the overall publications. Additionally, Figure 2 illustrates the progression of publication activities within this particular topic from 2014 to 2023, indicating a notable increase in scholarly attention towards financial literacy over this timeframe. These advancements underscore the importance of financial literacy and the need for further investigation and instruction in this field.

Table 1: Year of Publications

Year	Total Publications	Percentage (%)
2023	53	12.71%
2022	71	17.03%
2021	56	13.43%
2020	52	12.47%
2019	45	10.79%
2018	38	9.11%
2017	32	7.67%
2016	33	7.91%
2015	24	5.76%
2014	13	3.12%
Total	**417**	**100.00**

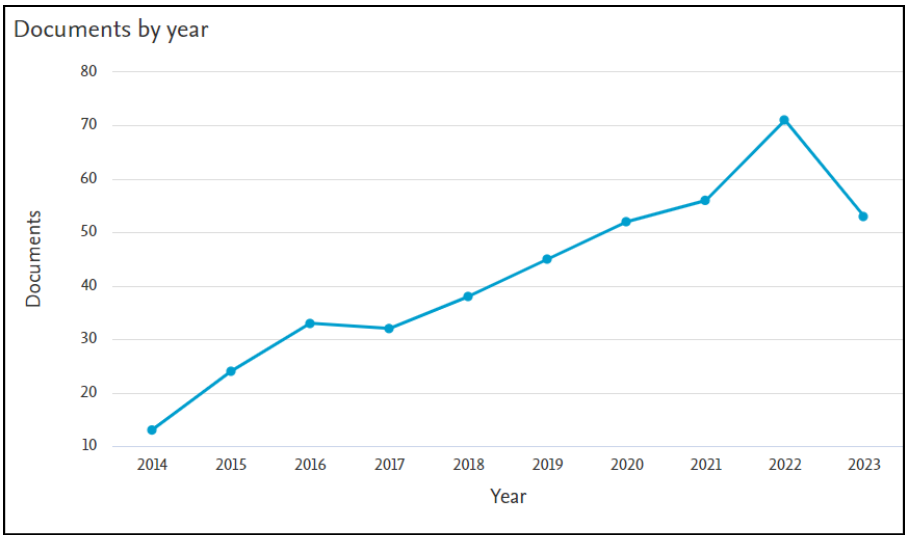

Figure 2: Document by Year

Keywords Analysis

The data in Table 2 reveals that Financial Literacy emerged as the dominant keyword that appeared in 280 publications, significantly accounting for 67.15% of all publications. This prominence underscores the central focus of research within the discipline, emphasizing the crucial role of financial literacy in various aspects of financial decision-making and behavior. Financial Education and Financial Decisions also carry a significant amount of importance in 11.75% and 10.31% of the publications, respectively. These terms represent the scholarly focus on the pedagogical aspects of financial literacy and the outcomes of making informed financial decisions. Furthermore, Decision Making and Finance appeared in 8.63% of the publications, reflecting the field's interest in investigating the processes and factors that influence financial decision-making as well as broader financial concepts. Financial Knowledge, Literacy, Education, Human, and Financial Behavior also emerged as notable keywords, ranging from 4.80% to 7.19% in frequency. These keywords represent various interrelated topics, including the acquisition of financial knowledge and the analysis of individual financial behavior patterns.

Table 2: Top Keywords

Author Keywords	Total Publications	Percentage (%)
Financial Literacy	280	67.15%
Financial Education	49	11.75%
Financial Decisions	43	10.31%
Decision Making	36	8.63%
Finance	36	8.63%
Financial Knowledge	30	7.19%
Literacy	29	6.95%
Education	25	6.00%
Human	25	6.00%
Financial Behavior	20	4.80%

This study used WordSift (https://wordsift.org) to generate a word cloud for the author's keywords. The outcome is depicted in Figure 3 with a scale setting and a maximum of 100 words. The visualization demonstrates that Financial and Literacy are among the top 100 words used in the published article, with the size of each word indicating the total occurrences of each keyword. Aside from the keyword used to identify the document's title, the word cloud also contains keywords such as Decision, Finance, Knowledge, Behavior, and Education. Despite their small size, these additional keywords have been utilized to accommodate the topic of financial literacy across the period of 2014 to 2023.

Figure 3: Word Cloud of the Author's Keywords

Figure 4 shows a network visualization map of the author's keywords with at least three occurrences for each term. The map was constructed using VOSviewer, which is software for creating and visualizing bibliometric networks. The color, circle size, font size, and connecting line width indicate the relationships between the keywords. For example, keywords that are of the same color are often listed together.

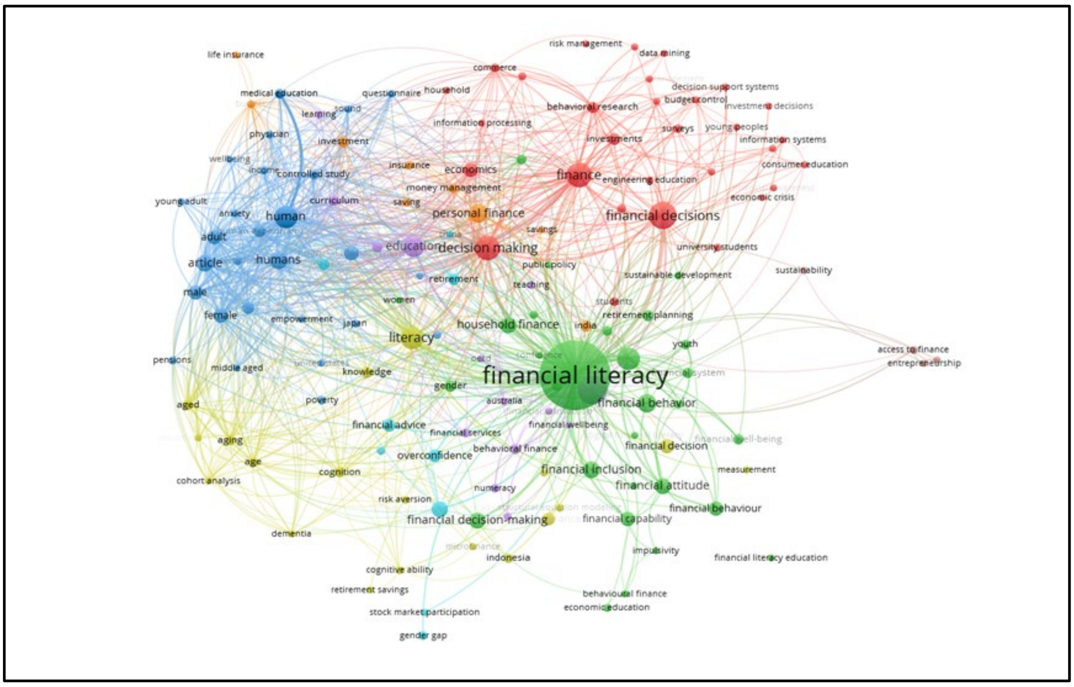

Figure 4: Network Visualization Map of the Author's Keywords

Geographical Distribution of Publications

According to Table 3, the United States (US) contributes the highest number of publications, accounting for 27.34% of all publications. Such dominance reflects the country's significant influence and participation in the academic discussion concerning financial literacy and its implications. India is ranked second in terms of contribution, constituting 9.11% of all publications. This indicates that the country's academic output in financial literacy research is becoming increasingly significant. Furthermore, Germany and Australia contribute significantly to financial literacy research across various spectrums, which account for 7.43% and 7.67% of all publications, respectively. Finally, the United Kingdom (UK), Malaysia, Indonesia, Italy, and Portugal are additional noteworthy contributors with their total publications ranging from 3.36% to 6.95%.

Table 3: Top 10 Countries Contributed to the Publications

Country	Total Publications	Percentage (%)
United States	114	27.34%
India	38	9.11%
Australia	32	7.67%
Germany	31	7.43%
United Kingdom	29	6.95%
Malaysia	24	5.76%
Indonesia	21	5.04%
Italy	17	4.08%
Portugal	14	3.36%
China	13	3.12%

Authorship

Table 4 displays the most distinguished authors in the field of financial literacy along with their respective publication counts and contribution percentages. Lusardi, A. emerged as the most prolific author with eight publications, constituting 1.92% of all documents. It demonstrates the importance of her research in the field of financial literacy. This is followed by Munene, J. C. with 6 articles, constituting 1.44% of the total publications. It illustrates the author’s substantial contributions to this field of study. Other productive authors include Bennett, D. A., Boyle, P. A., Gerrans, P., Okello Candiya Bongomin, G., Santos, E., Tavares, F. O., Yu, L., and Ahmad, Z. where each of these authors has contributed four articles (0.96%), except for Ahmad, Z. with three articles (0.72%).

Table 4: Most Productive Authors

Author’s Name	No. of Documents	Percentage (%)
Lusardi, A.	8	1.92%
Munene, J.C.	6	1.44%
Bennett, D.A.	4	0.96%
Boyle, P.A.	4	0.96%
Gerrans, P.	4	0.96%
Okello Candiya Bongomin, G.	4	0.96%
Santos, E.	4	0.96%
Tavares, F.O.	4	0.96%
Yu, L.	4	0.96%
Ahmad, Z.	3	0.72%

Most Influential Institutions

The author's affiliation was also evaluated in this bibliometric analysis. As shown in Table 5, the University of Georgia emerged prominently with 8 associated publications, thus accounting for 1.92% of the total academic output. On the other hand, Universiti Malaya, GW School of Business, and Makerere University Business School each produced 7 publications, contributing 1.68% to the total number of publications. Meanwhile, The George Washington University, Goethe-Universität Frankfurt am Main, Rush Alzheimer's Disease Centre, Rush University Medical Centre, Polytechnic Institute of Leiria, and The University of Western Australia are affiliated with 5 publications, each representing 1.20% of the data.

Table 5: Most Influential Institutions with a Minimum of Five Publications

Institution	Total Publications	Percentage (%)
University of Georgia	8	1.92%
Universiti Malaya	7	1.68%
GW School of Business	7	1.68%
Makerere University Business School	7	1.68%
The George Washington University	5	1.20%
Goethe-Universität Frankfurt am Main	5	1.20%
Rush Alzheimer’s Disease Center	5	1.20%
Rush University Medical Center	5	1.20%
Polytechnic Institute of Leiria	5	1.20%
The University of Western Australia	5	1.20%

Citation Analysis

A researcher's productivity can be measured by the total number of citations and citations per year. Table 6 shows the total number of citations with average citations per year for all retrieved documents. There are 5609 citations reported in 10 years (2014 – 2023) for 417 retrieved articles with an average of 623.22 citations/year.

Table 6: Citations Metrics

Metrics	Data
Publication years	2014-2023
Citation years	10
Papers	417
Citations	5609
Citations/year	623.22
Citations/paper	13.45
Citations/author	2413.52
Papers/author	201.45
h-index	35
g-index	65

Table 7 reveals the top 10 most cited articles based on the number of citations according to the Scopus database. The article titled "Financial Literacy, Financial Education, and Downstream Financial Behaviors" published by Fernandes, D., Lynch Jr, J. G., and Netemeyer, R. G. in 2014 has received an impressive total of 873 citations. It also has maintained an average citation rate of 97 per year, indicating its significant influence in its field. Meanwhile, the article "Keeping It Simple: Financial Literacy and Rules of Thumb" authored by Drexler, A., Fischer, G., and Schoar, A. in 2014 has received a remarkable number of 263 citations with an average of 29.22 citations per year. This demonstrates its significance in financial literacy research.

Table 7: Highly Cited Articles

No.	Authors	Title	Year	Cites	Cites/ Year
1	Fernandes, D., Lynch Jr., J. G., & Netemeyer, R. G.	Financial Literacy, Financial Education, and Downstream Financial Behaviors	2014	873	97
2	Drexler, A., Fischer, G., & Schoar, A.	Keeping It Simple: Financial Literacy and Rules of Thumb	2014	263	29.22
3	Bucher-Koenen, T., Lusardi, A., Alessie, R., & van Rooij, M.	How Financially Literate Are Women? An Overview and New Insights	2017	187	31.17
4	Calcagno, R. & Monticone, C.	Financial Literacy and The Demand for Financial Advice	2015	184	23
5	Klapper, L. & Lusardi, A.	Financial Literacy and Financial Resilience: Evidence from Around the World	2020	127	42.33
6	Finke, M. S., Howe, J. S., & Huston, S. J.	Old Age and The Decline in Financial Literacy	2017	118	19.67
7	Frydman, C. & Camerer, C. F.	The Psychology and Neuroscience of Financial Decision Making	2016	107	15.29
8	Grohmann, A., Kouwenberg, R., & Menkhoff, L.	Childhood Roots of Financial Literacy	2015	105	13.13
9	Skagerlund, K., Lind, T., Strömbäck, C., Tinghög, G., & Västfjäll, D.	Financial Literacy and The Role of Numeracy - How Individuals' Attitude and Affinity with Numbers Influence Financial Literacy	2018	103	20.6

No.	Authors	Title	Year	Cites	Cites/ Year
10	Grohmann, A.	Financial Literacy and Financial Behavior: Evidence from The Emerging Asian Middle Class	2018	91	18.2

CONCLUSION

This bibliometric analysis provides insights into trends, influential authors, institutions, and influential works that shape the landscape of financial literacy research. It indicates a growing interest in the discipline, with the highest number of publications occurring in 2022. Notably, "Financial Literacy" stands out as a major theme. The analysis acknowledges Lusardi, A. as a notable figure in the field, highlights the United States' prominent research contributions, and emphasizes the contributions of prominent institutions, such as the University of Georgia and Universiti Malaya. Furthermore, important bibliometric metrics like a significant h-index and a high number of citations per paper demonstrate the significance and impact of financial literacy research. Therefore, examining highly cited articles, particularly those written by Fernandes, D., Lynch Jr., J. G., and Netemeyer, R. G., demonstrates the evolution and influence of this field.

However, the limitations of this bibliometric analysis must be considered when interpreting its findings. First, the analysis relies on publicly accessible data sources, such as academic databases, which may not capture all relevant publications or have varying data quality. Second, the focus of this study is primarily on quantitative metrics, such as publication counts and citation metrics, which may not adequately convey the qualitative aspects of research quality. Though the analysis has identified influential authors and institutions, it does not delve into the specific content or methodologies of the research, which limits the depth of insights into the nature of the contributions. Lastly, bibliometric analyses are inherently dependent on the accuracy and consistency of author affiliations and keyword assignments in the underlying data sources, which may introduce biases or errors. Therefore, these constraints must be considered and addressed in future research by employing mixed-method approaches, investigating unexplored regions and populations, and embracing interdisciplinary perspectives. The study of financial literacy should also expand beyond its current boundaries to include psychological, neurological, sociological, and cultural influences.

In terms of its implications, this bibliometric analysis of financial literacy research can provide valuable guidance for organizations and institutions engaged in financial education and decision-making. This may include curriculum development, training, product design, policy development, advocacy, wealth management, marketing, research collaboration, risk management, and internationalization. By incorporating research-based insights into their strategies and operations, organizations and institutions can contribute to the improvement of individuals' and communities' financial literacy and decision-making.

Finally, the evolving conceptualization of financial literacy can generate theoretical advancements, transforming it from a static concept into a context-dependent, dynamic phenomenon that is influenced by cognitive processes, emotions, and societal factors. This transformation enhances the theoretical foundations of financial literacy research and provides a strong foundation for future studies.

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AUTHORS' CONTRIBUTION

The authors confirm their contribution to the paper as follows: Introduction, Conclusion, and References: Samanol, S.; Literature Review, Methodology, and Result and Discussion: Md Zani, R. Both authors reviewed the results and approved the final version of the manuscript.

CONFLICT OF INTEREST DECLARATION

We certify that the article is the Authors' and Co-Author's 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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