SCIENTIFIC MAPPING OF THE GLOBAL TREND IN FINANCIAL LITERACY AND BEHAVIOR

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Abstract: Exploring the financial literacy trend has been interesting topic, it has the crucial ro;e as the fundamental knowledge and skill for individuals in this modern economy. Wheter the individuals are employed in salaried jobs or are self employed entrepreneurs, undersatnding financial pronciples is critical to managing income, investments, and future planning. This study aims to investigate how the evolution of the financial literacy just happened, like the structure the thematic development from scholarly research on financial literacy and also financial behaviour. Employed the bibliometric methods using the biblioshiny tools as the application within the bibliometrix R-package. The data were sourced from the scopus database and spanned publication between 2020 until mid-2025 and found 1574 articles and journals. The research followed has three majorstages: data collection, organize and evolution This study found that there is the increase interest in financial literacy and behaviour, with a notable surge in publication from 2023 onwards. Understanding about the evolution and thematic concentration of he literature can help shape more effective especially to understand the financial literacy has develop time by time this effectiveness might valuable for researcher, practitioners, and policymakers.

INTRODUCTION

Financial literacy encompasses the knowledge and skills required to make informed and effective financial decisions. As the economies there is become increasingly complex, the ability to manage personal finances, plan for retirement, navigate credit markets, and understand investment opportunities becomes even more critical. Financial behaviour, on the other hand, refers to the actions and decisions individuals make regarding their finances, influenced by both cognitive understanding and behavioural traits.

The increasing prominence of this subject in both academic and policy discussions underlines the need to systematically explore the development of knowledge. As all we knew

that the development of digital product of finance is fluctuate increase, known as DFL or digital financial literacy is also become important in this current of time [1].

The study about the financial literacy also growth year by year, the study from [2] has conclude that there is any the social factors influence financial literacy including the age, money and education. Some of the study also agreed about there is some of the influence for the financial literacy, so in this study try to interpret how the financial literacy has growth from 2020 until the mid of 2025.

This study focuses on examining research trend in financial literacy and behaviour from 2020 to middle 2025. The objective is to understand the volume of scientific production, identify the most productive authors and institutions, and explore the thematic and geographic distribution of research outputs. A bibliometric analysis offers a structured method to quantify and visualize research patterns, providing insights into influential authors, emerging themes, and collaborative networks within the field.

LITERATURE REVIEW
1.1 Financial literacy

As all we knew that money is not same as being financially literate. The organization for economic co-operation and development (OECD) officially defines that it has a combination of awareness, knowledge, skill attitude, and behaviour necessary to make sound financial decisions and ultimately achieve individual financial well being [4]

A study reveals that financial literacy is a highly important sort of human capital that is needed to make sound economic decisions on todays sophisticated financial world [3]. It encompasses both the capacity to grasp basic financial concepts like interest rates, inflation, and risk diversification and the ability to use this knowledge in real life circumstances like budgeting, saving, managing debt, and planning investments. Being financially literate is not only useful but also the necessary thing to the economic security and stability as financial goods becoming more complicated and people have to plan their own retirement [5].

Financial Behaviour

Financial literate people conduct is what they do with their money and what they choose to do with it. It shows how people use their financial knowledge in real life. Managing financial flow, credit, and debt or like saving investing and creating plans for longterm goals like retirement and education are all examples of these behaviours [6] People frequently imagine that being better with money equals acting more properly with it, but research reveals that there is a huge "literacy-behavior gap" yhis disparity illustrates that knowing a lot is not enough to make good financial choices [7]. To build strong financial education programs and policies that not only teach people about money but also help them form good habits and avoid them to do impulsive consumption.

Bibliometric

Bibliometric analysis is a scientific way to look at and evaluate a lot of academic writing by using data. It employs statistics to show how a given field of study has changed over time and how those changes have affected other fields [8]. By looking at publication and citation data, this strategy can uncover notable research trends, authors and publications, big conceptual themes, and the networks of academics, institutions, and countries that collaborate together. The bibliometric R package and other tools make it easy to accomplish

comprehensive science mapping in a way that can be repeated [9]. A bibliometric analysis is very helpful for a new and interdisciplinary topic like studying how people understand and act with money, researchers may now go beyond standard narrative evaluations to present a big picture, data driven picture of how the subject has changed, what its core concepts are, and where future research might be viable. **Research Questions**

We need a comprehensive examination of what we already know about financial literacy and behavior because the previous study is being done on these topics. This study uses a bibliometric method to find answers to the following research questions:

RQ1: How has research on financial literacy and behavior changed and grown year by year?
RQ2: Who, what, and where are most researchers working on financial literacy and behavior?
RQ3: What are the most important ideas and new trends in the study of financial literacy and behavior?

RESARCH METHODOLOGY

This study use the quantitative bibliometric approach to systematically map the intellectual structure and evolution of research at the intersection of financial literacy and behaviour. The methodological framework, as illustrated in the following diagram, is structured in a sequential process encompassing data retrieval, keyword-based searching, and a multi-faceted analytical procedure utilizing the bibliometrix R Package.
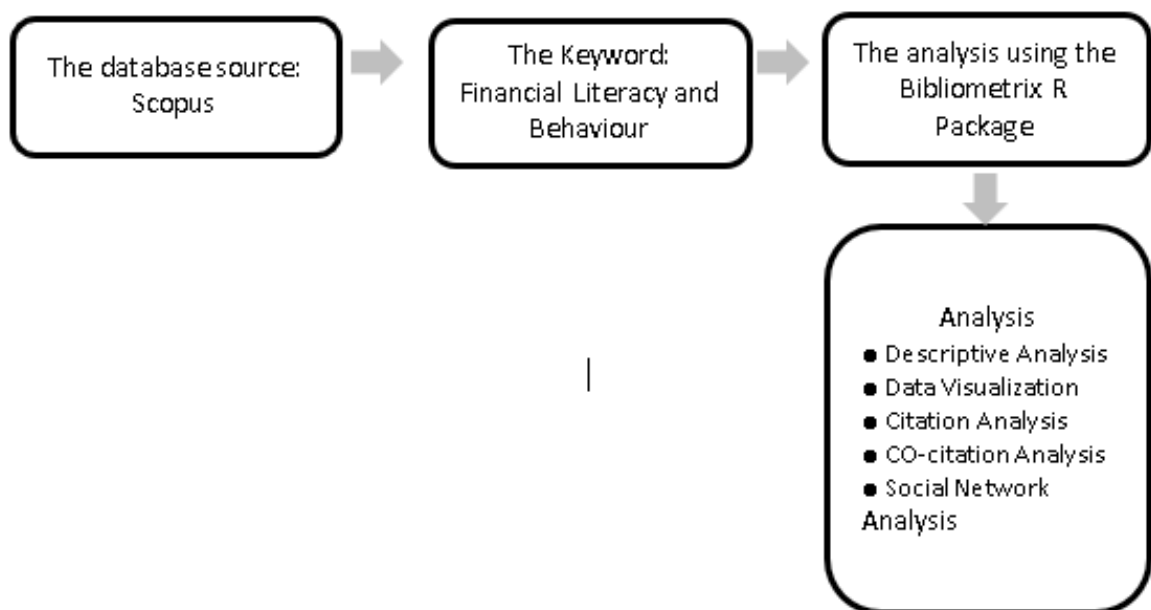
Gambar 1. Research Framework

Data Source and Selection Criteria

To the bibliometric analysis the selected data must be comprehensive coverage of peer-reviewed literature, the Scopus was selected with the search keyword such as "financial literacy" AND "financial behaviour"

Bibliometric Tool and Analytical Approach

Data were exported in CSV format and anaylzed using the bibliometrix R Package through the biblioshiny interface. That platform facilities a range of analyses, including descriptive statics, performance analysis, science mapping, and social structure analysis.

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Data Processing Steps

The processing steps of this study such as: Data Sources and Retrieval, search strategy, and also, analytical tool and techniques.

- **Data Source and Retrieval**

Scopus selected as the primary data source due to its extensive coverage of peer-reviewed literature, including journals, conference proceedings and books, across a wide array of disciplines. Its robust indexing and citation tracking capabilities ensure the retrieval of high-quality and relevant analysis, in the scopus also providing the reliable and broad overview of the scholarly landscape

- **Search Strategy**

Strategy of the keyword search was implemented to identify relevant publications. The main search query the keywords of "Financial literacy" and "Behavior". That specific combination was chosen to capture the breadth of research that investigates the linkages, correlations, and causal relationship between an individuals financial knowledge and their subsequent financial actions and decisions.

- **Analytical Tool and Techniques**

The bibliometrix package in the R statistical programming environment was used to process and analyze the retrieved data set. This powerful tool is made just for indepth science mapping analysis and has a set of functions that let you measure and show bibliographic data. The study used a number of different but complementary methods to do the analysis:

The first one is Descriptive Analysis: The first step gives a general overview of the research area. It has numbers like yearly publication trends, the most prolific authors, the countries and institutions that contribute the most, and the documents that are cited the most. This study lays the groundwork for growth and identifies the main contributors to the field. **The second one is Data Visualization:** Different ways of visualizing data are used to make it easier to understand complex data. These visual maps can show how publication trends change over time, where research is done around the world, and how keywords change. **Citation Analysis as the third methods.** This method looks at the citation links between publications to find the most important and influential works in a given field of research. It helps to know which papers have become important sources for later research**. Next is Co-citation Analysis:** This method looks at how often works cite two documents together. By grouping publications that are related in terms of ideas, it shows the intellectual structure of the field and helps to find major research themes, schools of thought and foundational theories. **And the last one is Social Network Analysis (SNA):** SNA is used to look at the ways people work together in the field. This includes mapping co authorship networks to find groups of researchers who often work together, as well as patterns of collaboration between countries and institutions. This shows how the research community is organized socially and how they share knowledge. The research framework makes it easier to do a thorough and multi-dimensional study of the literature on financial literacy and behavior by combining those analytical methods. The goal is to find important research trends, intellectual cornerstones, and future research directions.

RESULT AND DISCUSSION
Result

There are two ways that data analysis was organized, the first one is descriptive statistics concentrats on analysing bibliometrics information in therm of the fundamental components of the set of data including "sources", "journals", "authors and "documents" and to promote further research into literature reviews in any subject and bibliometrics analysis, so the second one is "scientific mapping" employs a range of visual aids, such as network analysis three field plots and thematic maps, and extracts the earning structure.

Descriptive Analysis
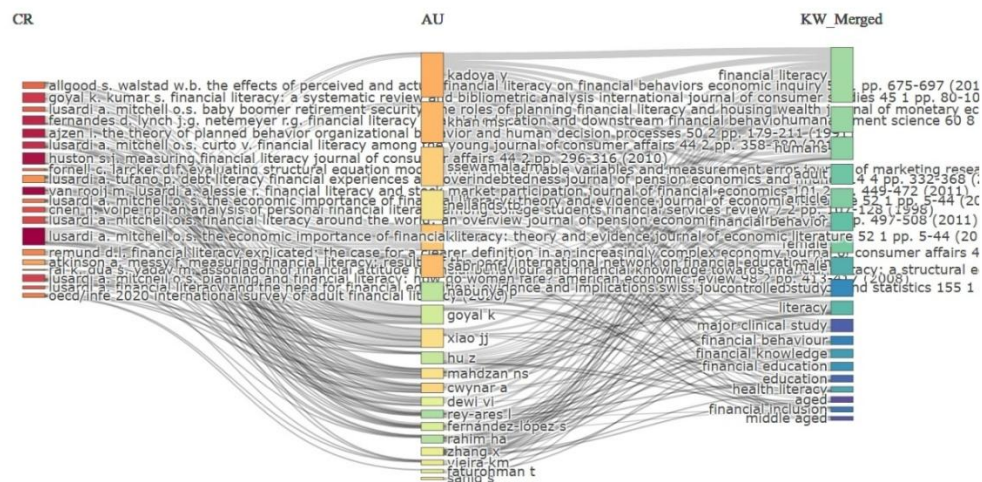## The Numerous dimensions used for analysis

Figure 2. Three Field Plot

Three field plot identify and describe the three main categories from the attached figure such as CR (Cited Reference/Sources), AU stand for Authors and KW Merged stand for Merged Keywords/Themes. That figure also explain the nature of the connections or relationships between authorship of cited works and the thematic focus from the keyword or the authors works.

Interpreting the visual representation of the connections in the attached image, specifically how the thickness or width of the bands signifies the strength, frequency, or importance of the relationship between the connected entities, toward that figure also describe that this study is analyze the content within each category to identify prominent examples, such as frequently authors lie Lusardi and Mitchell and for key research themes such as like financial literacy, financial behavior and influential publications.

The result also explain that the synthesize and observations overall purpose and utility the type of visualization in a scientific or academic context, such as mapping the intellectual structure of research field, identifying influential researchers, or highlighting dominant research topic. That three field plot also show the visualization to understand about the interconnections between researchers, their publications, and the thematic areas they contribute, providing insights into the evolution and focus of specific domain of study.
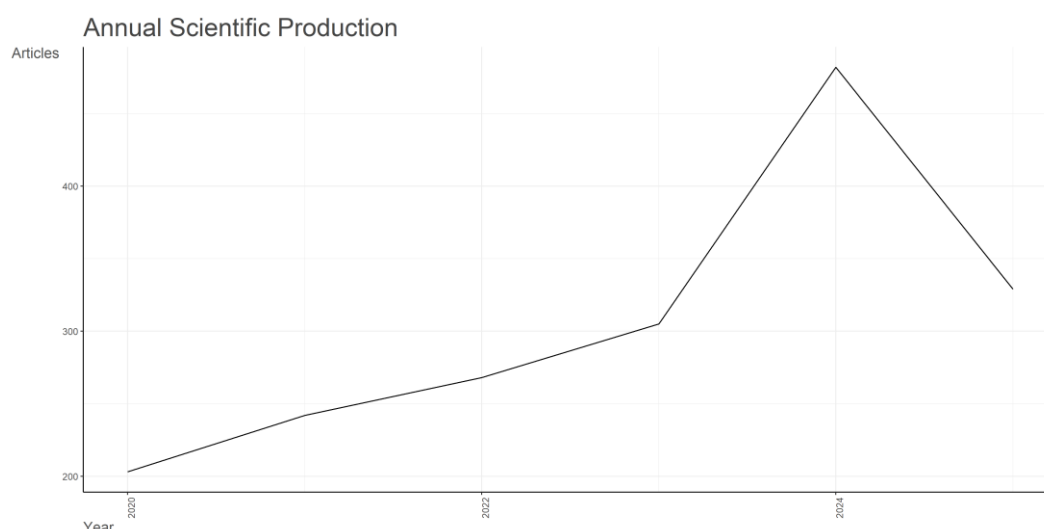
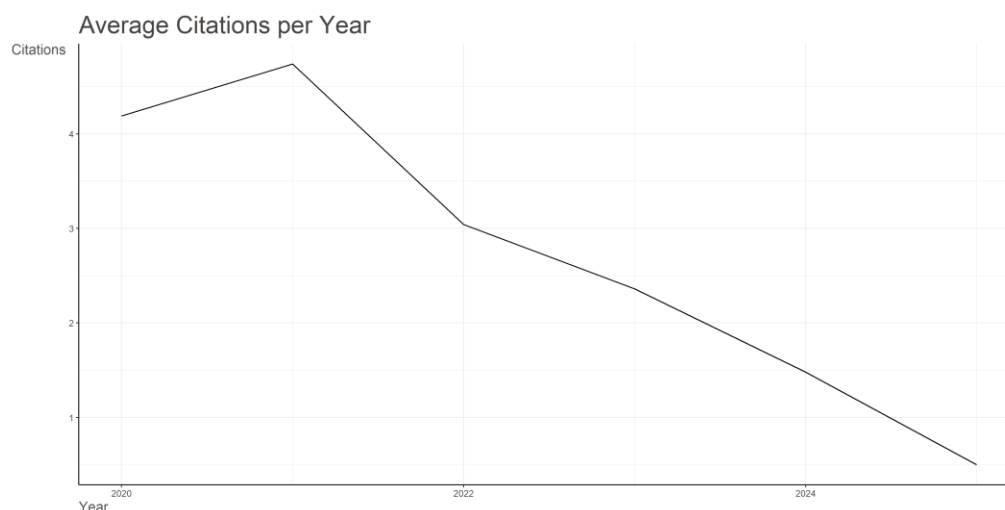**Figure 3. Annual Scientific Production**

Figure 4. Average Citations per Year

There is a notable growth in scholarly interest, especially during the post-pandemic economic recovery period.

Analyze the annual scientific production graph to describe the trend in the number of articles published per year from 2020 to the latest available data point, identifying the peak in 2024 and the subsequent decline. This study also analyzed the average citation per year that described about the trend in the average number of citations received per article per year from 2020 to the least available data point, provide a scientific interpretation of the trends, considering potential factors such as the time lag required for newly published articles citations, the potential impact of a rapid increase in publication volume on the average citation rate, or changes in the quality or impact of published research, the finding also understanding the dynamics of scientific productivity and impact within the represented domain, emphasizing the need for further investigation into the underlying causes of the

observed patterns.

There are the most global cited documents on Figure 5 the identifying the most individual papers like from [5] discussing their likely foundational or highly impactful contributions to the field.
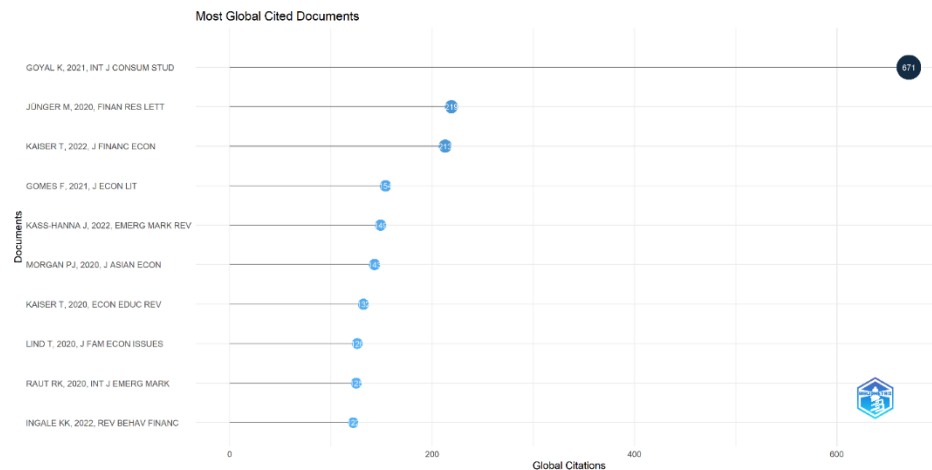

Figure 5. Most Cited Documents

The other graph interpret sources local impact by H index, identifying the most impactful publication venues such as like the sustainability, International Journal of Bank Marketing based on their H Index, and explaining what this signifies about their quality and influence in disseminating research.
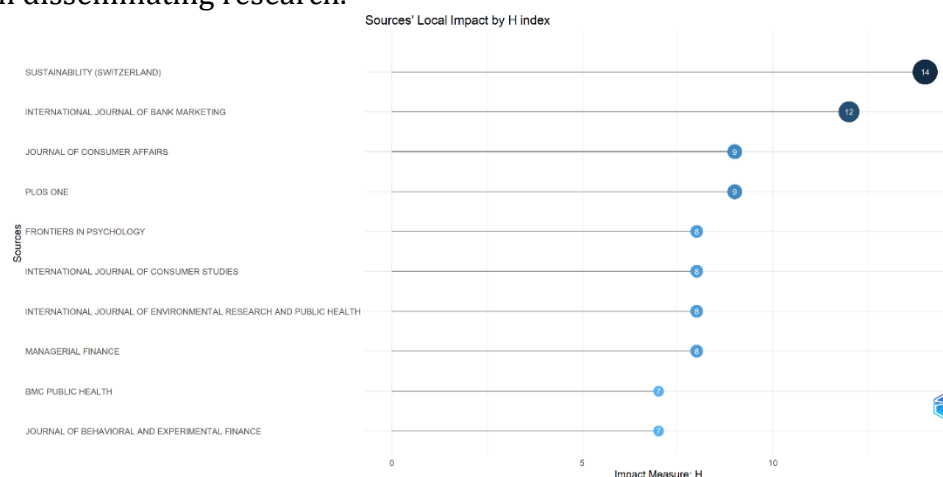

Figure 6. Local Impact

Provide a comprehensive synthesis of all findings, integrating insight from the network analysis, productions or citations trends, and document or source impact. Discuss how these elements collectively characterize the research domains evolution, key contributors and influential dissemination channels.
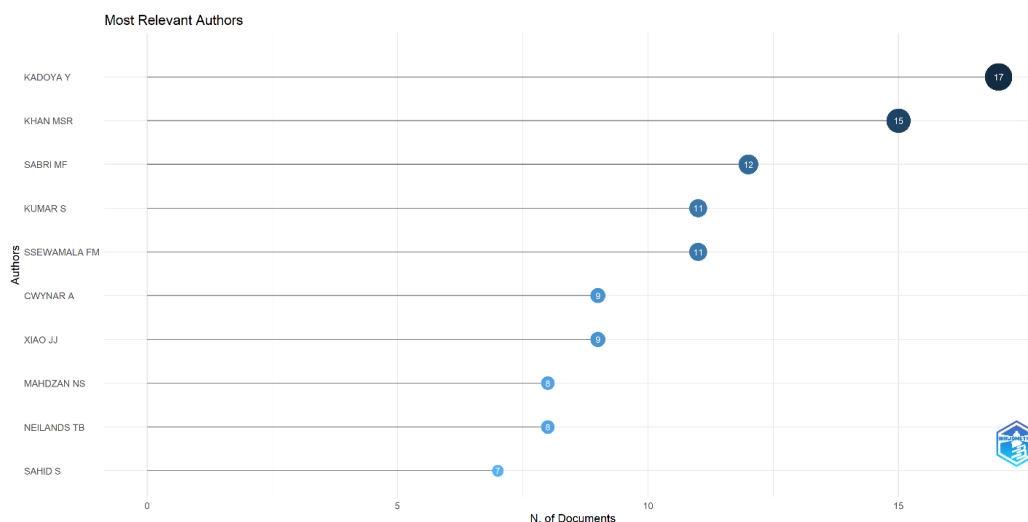
Figure 7. Most Relevant Authors

The figure was interpret the most relevant authors that identify the most prolific authors by their number of published documents like from [10] that indicating key contributors to the fields literature. Synthesize the findings from the most relevant authors discussing how prolific authors may also be associated with highly cited works, thereby identifying leading researchers and their significant contributors.

The most global cited documents in the next figure also interpret how the production of some authors are reflect in the other studies:
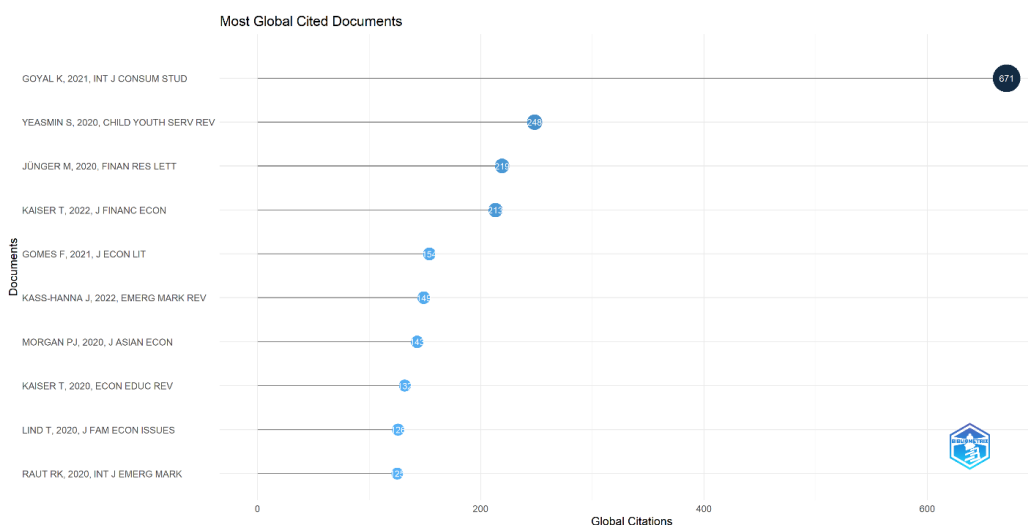

Figure 8. Most Global Cited Documents

3.2 Scientific Mapping

Word Cloud Visualization also as the results of the Common keywords include: "financial education," "savings behaviour," "investment decisions," "youth financial literacy," and "digital finance." There is also the world coluad that identifying the most prominent research themes, with financial literac as the centra; and most frequent keyword, indicating

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the core focus of the analyzed literature.

Figure 9. Word Cloud Visualization

Trend Topic

The comprehensive bibliometrics analysis that presented into the Figure 12 collectively map the intellectual structure, growth dynamics, and key influential elements within the studied research domain. Detailing the evolution of the various research term over time, the identify topic like 'digital payment" has sustained interest "financial well-being" topic, and declining or stable themes, providing insight into the dynamic nature of the field.

Figure 10. Trend Topic

Interpretation of the Co-occurrence Network Visualization

The co-occurrence network visualization that presented above illustrates the interconnections among keywords derived from bibliometric analysis of scholarly literature. The network is divided into two prominent clusters, each representing a thematic concentration based on the frequency and strength of keyword co-occurrance. This visual map was likely generated using bibliometric tools such as Biblioshiny, which enable the identification of major research themes and their relationships.
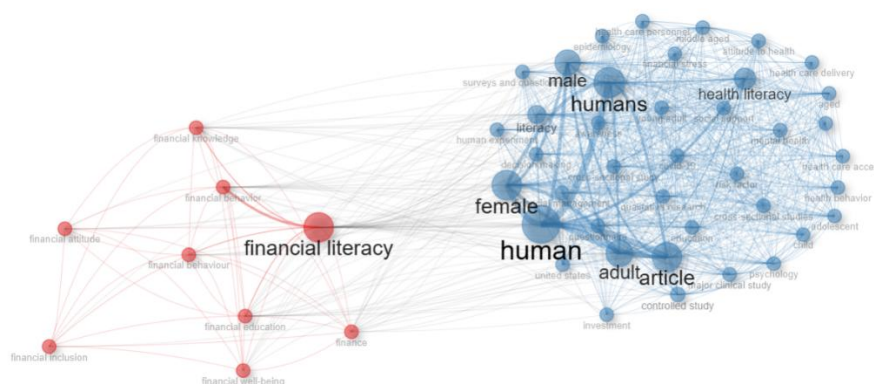

Figure 11. Co-occurrence Network Visualization

1. Red Cluster: Financial Literacy and Related Constructs

The red-colored cluster on the left side of the network is clearly centered around the keyword "financial literacy" which is depicted with the largest node size, indicating its high frequency and centrality within the literature. This cluster includes strongly associated keywords such as: Financial knowledge, Financial Behavior, Financial Education, Financial Inclusion, Financial attitude, Financial well being, Finance.

This grouping reflects a well-defined thematic focus on financial capability and education, encompassing the cognitive, behavioral, and emotional aspects of individuals interactions with financial systems. The dense interlinkages among theses terms suggest that research in this cluster often examines how financial knowledge and attitudes translate into behaviors and influence financial outcomes such as well being and inclusion. The presence of both "behavior" and "education" suggest an emphasis not only what individuals know, but also on how they act and how they are educated or trained financially.

2. Blue Cluster: Human Populations and Health Literacy Context

The blue colored cluster on the right side of the network is much denser and more expansive, centering around demographic and health-related terms such as: Humans, Female, Male, Adult, Health literacy, middle aged, health care access, health care delivery, Psychology, epidemiology, controlled study, survey and questionnaires

Additionally, keywords such as "article", "survey", and "controlled study" indicate a methodological underpinning, suggesting that this cluster encapsulates empirical and clinical research conducted on human populations. The dense connections among demographic indicators highlight how age, gender, and other personal factors are crucial variables in studies related to financial literacy and behavior.

3. Interconnection Between Clusters, a Multidisciplinary Bridge

The particular interest is the bridging role of the keyword "financial literacy", which forms the primary link between the two clusters. This indicate that although financial literacy is deeply embedded in the financial behavior literature, it is also increasingly studied in the context of human and social scineces, especially when examining how certain demographic groups like adults, females, or middle age individuals interact with financial systems.

The terms of human, female and adult appear as conceptual connectors, suggesting that financial literacy research often targets specific population segments and incorporates demographic variables into its analysis. Moreover, the emerging association with "health literacy" suggest potential for interdisciplinary exploration, such as investigating the impact of combined financial and health literacy on overall well being or decision making

The co-occurrence network reveals a bifocal research landscape: one cluster addressing the educational and behavioral dimensions of financial literacy, and another addressing population-based research in health and psychology. The central positioning of financial literacy as a bridging term highlights its interdisciplinary significance, affirming its relevance not only in economic and educational contexts but also in the broader human and social sciences. The visualization thus provides valuable insights into the structure of the academic discourse, suggesting that future research may benefit from integrative approaches that consider both behavioral finance and public health perspectives.

Thematic quadrants were identified about Motor themes such as like the financial technology, financial resilience. The topics act as central driving forces in the field due to their strong development and high relevance. Financial technology has been widely studied in relation to digital payments, mobile banking, and online investment platforms, such innovations are often linked to improved access to financial services and inclusivity.
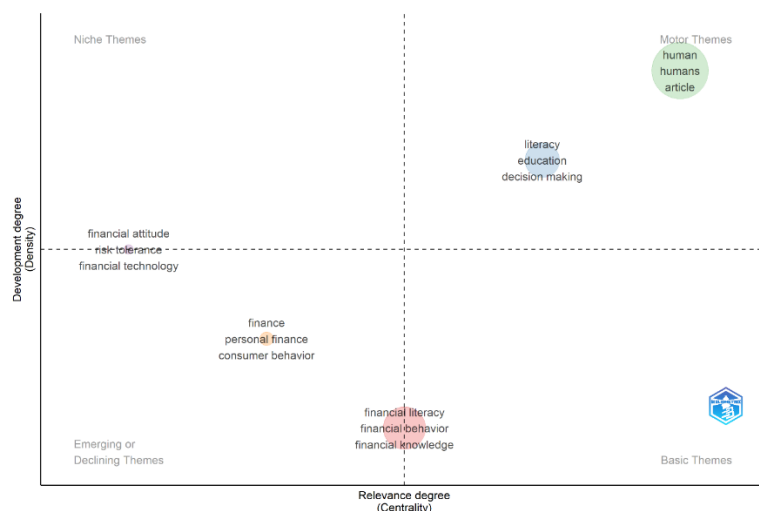

Figure 12. Four Thematic Quadrants

Meanwhile, financial resilience emphasizes how individuals and households can withsand economic shocks such as inflation, unemployment, or crises by leveraging financial literacy and digital solutions and the second topic is **Basic themes:** these themes represent the foundational dimensions of financial literacy. Personal budgeting highlights the

importance of financial planning at the individual level to balance income, savings and expenditures. Credit literacy focuses on the ability to understand credit scores. Studies have shown that early exposure to financial education significantly improves these skills in younger populations. The third topic is **Niche themes:** retirement planning, behavioral nudging, these themes are specialized but crucial in shaping financial well being. Retirement planning is particularly relevantin aging societies, stressing the need for long term savings and pension management. Behavioral nudging explores the use of psychological and behavioral interventions, such as reminders, defaults, or framing to influence better financial decisions. Research increasingly shows the effectiveness of nudges in encouraging savings and reducing impulsive financial behaviors. And the last topic is about the **Emerging themes:** crypto-literacy, digital wallets, these topics are relatively new and fast growing areas. Crypto literacy refers to individuals knowledge and awareness of cryptocurrencies, blockchain and their risk also apportinities. Digital wallets (E-wallets) such as Gopay, Paypal or Apple Pay represent **Collaboration and Social Structure**

The collaboration network reveals strong ties among institutions in Asia-Pacific, Europe, and North America. Cross-country collaborations were particularly evident in studies addressing youth and financial education, where comparative approaches allow for cross-cultural insights into the effectiveness of school-based programs and national strategies [15].

Discussion

The bibliometrics evidence suggests several important trends. First, research on financial literacy is expanding rapidly, particularly in developing economies where financial inclusion is a key policy objective. While earlier studies focused on awareness and knowledge, recent literature emphasizes behaviour modification and the application of digital tools.

Furthermore, the rise of digital finance, mobile banking, and cryptocurrency has shifted research agendas towards the intersection of technology and financial literacy. Researchers also increasingly recognize the influence of socio demographic variables, including age, gender, and educational background, on financial behavior.

The emergence of thematic clusters also underscores the need for interdisciplinary approaches, combining insights from psychology, education, and economics to foster holistic financial education initiatives.

Tabel.1. Descriptive Statistics

2020-2021	2022-2023	2024-2025
In the early phase, the number of publications was relatively low (180 in 2020, increasing to 219 in 2021). During this period, there was a lot of emphasis on understanding the basics of financial literacy: how individuals understand the concepts of saving, managing debt, and planning personal finances. This period	In 2022, the number of publications increased to 236, then 249 in 2023. This trend reflects a shift in research focus from simply "financial knowledge" to "financial behavior" and "decision making" many studies have begun to discuss the relationship between financial literacy and investment	2024 and 2025 saw significant publications with the total number of 395 and 294 publications in each year. 3 main aspects in 2024: 1. Sustainability: supporting the green investment. 2. Economic Crisis and Resilliaence 3. Is financial inclusion: there is a strong push to make financial literacy a way to expand

alsomarked the beginning of the emergence of digital financial literacy, along with the growth of fintech and digital payment platforms	beheavior. The context of the younger generation is an important focus, particularly students and millennials also Z Generation eho are bevoming more active in the digital economy	access to formal financial products for low income communities. In 2025 the 3 main major is about digital financial behavior, artificial intelligence and post pandemic adaption

Source: Summarize by Author

CONCLUSSION

This study presents a comprehensive bibliometric analysis of the academic literature on financial literacy and financial behavior from 2020 to 2025. The bibliometric analysis demonstrates not only a sharp increase in publication output but also diversification of thematic directions, reflecting the complex challenges of managing personal finance in the digital era.

Bibliometric mapping reveals the emergence of new thematic areas connected to digital finance and behavioral dynamics. Research on digital financial literacy [16] invitation in financial literacy programs [17] signals a paradigm shift from traditional budgeting skills to competencies required in a technology driven economy. Furthermore, the increasing focus in behavioral interventions, such as nudging and app-based financial management [18] underscores the integration of behavioral economics into financial education.

By Mapping the intellectual structure and highlighting these thematic evolutions, this study provides a robust platform for future research policy makers and educators can leverage these insights to design evidence based programs tailored to contemporary financial realities programs that not only teach budgeting and credit literacy but also prepare individuals for digital transactions, sustainable financial practices, and resilience against future economic shocks. In doing so, the field of financial literacy can continue to evolve as a vital tool for enhancing financial well being and social equity

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