

Financial Literacy in the Era of Digital Finance: A Bibliometric Analysis and Future Research Agenda (2008–2026)

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ABSTRACT

This study presents a comprehensive bibliometric analysis of research on financial literacy within the context of digital finance, covering the period from 2008 to 2026. Drawing on a dataset of 970 Scopus-indexed journal articles, the study examines the intellectual structure, publication trends, influential contributors, and thematic evolution of the field using performance analysis and science mapping techniques. The findings reveal a rapidly expanding and increasingly collaborative research domain, characterized by a high annual growth rate and growing international engagement. The analysis identifies financial technology (FinTech) and structural equation modelling as dominant motor themes, reflecting the field's methodological and technological advancement. In contrast, financial literacy, financial inclusion, and digital financial inclusion emerge as foundational yet underdeveloped themes, indicating the need for deeper theoretical integration. The results further highlight a significant paradigm shift from traditional financial knowledge toward digital financial capability, emphasizing the importance of technological competencies in shaping financial behavior. Moreover, the growing prominence of emerging economies in knowledge production underscores the global relevance of digital financial inclusion. This study contributes to the literature by synthesizing fragmented research into a unified framework and offering a comprehensive overview of the field's evolution. It also identifies critical research gaps, particularly in behavioral dimensions, digital inclusion disparities, and regulatory frameworks. The findings provide valuable implications for researchers, policymakers, and educators seeking to promote financial resilience and inclusive participation in an increasingly digitalized financial ecosystem.

Keywords: Financial literacy, Digital finance, FinTech, Financial inclusion, Bibliometric analysis

INTRODUCTION

The rapid digitization of the global economy has fundamentally reshaped the landscape of personal finance, transitioning traditional monetary interactions into complex, technology-driven ecosystems. At the heart of this transformation lies the intersection of financial literacy and digital finance, two critical pillars that determine an individual's ability to navigate modern economic structures effectively. Financial literacy has long been recognized as a key determinant of economic well-being and financial decision-making (Lusardi & Mitchell, 2014), yet its relevance has expanded significantly in the digital era. As financial services increasingly migrate to mobile platforms and fintech-driven systems, individuals are required not only to possess financial knowledge but also digital competencies, giving rise to the concept of digital financial literacy. This evolution is reinforced by global evidence showing that digital financial inclusion and payment systems have accelerated significantly, particularly following the COVID-19 pandemic (Demirgüç-Kunt et al., 2022).

Although the burgeoning interest in how digital tools can foster financial inclusion, the academic landscape remains fragmented, with research spanning diverse disciplines from behavioral economics to computer science. The necessity for a systematic overview is underscored by the current global shift toward "cashless" societies, where a lack of digital financial proficiency can lead to systemic exclusion. This paper addresses this gap by providing a comprehensive bibliometric analysis of the field from 2008 to 2026. By examining 970 documents

and 488 sources, this study maps the intellectual trajectory of the discipline, identifying key motor themes such as financial technology and foundational pillars like digital inclusion.

The primary objective of this research is to delineate the conceptual boundaries of the field and identify emerging trends that will shape future policy and academic inquiry. Through the application of thematic mapping and performance metrics, we explore whether the current discourse is keeping pace with rapid technological disruptions. By synthesizing a vast body of literature comprising over 92,000 references, this study provides a roadmap for scholars and practitioners to bridge the divide between theoretical financial knowledge and practical digital application, ultimately contributing to a more resilient and inclusive global financial architecture.

Despite the growing body of literature, existing studies remain fragmented and lack a comprehensive synthesis integrating financial literacy with digital finance developments. This study addresses this gap by providing a systematic bibliometric analysis that maps the intellectual structure, thematic evolution, and emerging research directions within this rapidly evolving field.

LITERATURE REVIEW

This study builds upon existing literature on financial literacy and digital finance, which highlights the growing importance of technological integration in financial decision-making (Goyal & Kumar, 2021; Ozili, 2022). Financial literacy has been widely recognized as a critical life skill influencing savings, investment, and debt management behaviors (Lusardi, 2019). However, the emergence of digital finance has transformed traditional financial systems, introducing new platforms, risks, and opportunities (Philippon, 2016; Vives, 2019). Bibliometric studies on FinTech (Li & Xu, 2021) and digital inclusion (Moghadam & Karami, 2023) provide valuable insights but remain fragmented. Furthermore, digital financial services such as mobile money have demonstrated significant socio-economic impacts, particularly in enhancing financial inclusion and reducing poverty (Suri & Jack, 2016). This study addresses the gap by integrating financial literacy and digital finance into a unified bibliometric framework, contributing to a more holistic understanding of the field.

The academic discourse surrounding financial literacy has undergone a significant paradigm shift, transitioning from a focus on basic arithmetic and savings knowledge to a sophisticated understanding of digital finance ecosystems. Central to this evolution is the emergence of financial technology (FinTech) as a primary motor theme, where researchers increasingly employ structural equation modeling (SEM) to validate the relationship between technology adoption and consumer welfare (Li & Xu, 2021; Sahabuddin et al., 2023). While traditional financial knowledge remains a foundational prerequisite, it is no longer sufficient in isolation; the integration of digital financial inclusion as a basic theme suggests that accessibility and literacy are now inextricably linked in the pursuit of sustainable development (Goyal & Kumar, 2021; Ozili, 2022).

Furthermore, the rise of household finance as a specialized niche reflects a growing granularity in the literature, focusing on how digital tools impact real-world portfolio management and debt behavior (Aassouli & Ahmed, 2023). However, the classification of "financial capability" as an emerging or declining theme indicates a critical pivot: scholars are moving beyond static "knowledge" toward active, technology-mediated "capability," reflecting the rapid 29.08% annual growth in the field (Moghadam & Karami, 2023). This synthesis highlights a maturing field where the core challenge lies in bridging the gap between theoretical inclusion and the practical navigation of complex digital financial architectures (Dissanayake et al., 2023).

METHODOLOGY

This study employs a quantitative bibliometric approach to systematically examine the intellectual structure and evolution of research on financial literacy and digital finance. Bibliometric analysis is widely recognized as a rigorous and reproducible method for synthesizing large volumes of scientific literature, enabling the identification of research trends, thematic development, and influential contributions. The dataset was retrieved from the Scopus database, selected for its comprehensive coverage of high-quality peer-reviewed publications. A structured Boolean search query was applied to the TITLE-ABS-KEY fields using keywords related to "financial literacy," "digital finance," and "financial technology (FinTech)," including their synonyms and variations, covering the period from 2008 to 2026.

Table 1. Data Collection and Screening Process

Step	Description	Records (n)
1	Initial Scopus search (TITLE-ABS-KEY)	1,684
2	Limited to journal articles	1,432
3	English language filter	1,398
4	Removal of duplicates	1,365
5	Final dataset	970

To ensure data quality, the search was restricted to English-language journal articles, and duplicates were removed, resulting in a final dataset of 970 documents. The data were exported in BibTeX format and analyzed using the Bibliometrix R-package via the Biblioshiny interface, with preprocessing steps including standardization of author names and keyword harmonization. The analysis integrates performance metrics and science mapping techniques, including publication trends, source and author impact, co-word analysis, thematic mapping, historiographic analysis, and collaboration networks. Key bibliometric indicators such as annual growth rate, average citations per document, document age, and co-authorship patterns were employed to ensure analytical robustness. This methodological framework enables a comprehensive, objective, and multidimensional understanding of the field, providing a reliable foundation for identifying research gaps and future directions. This approach aligns with established bibliometric methodologies widely applied in finance and management research, ensuring analytical rigor and reproducibility (Donthu et al., 2021).

RESULTS PART I: PERFORMANCE ANALYSIS

Main Information and Publication Trends



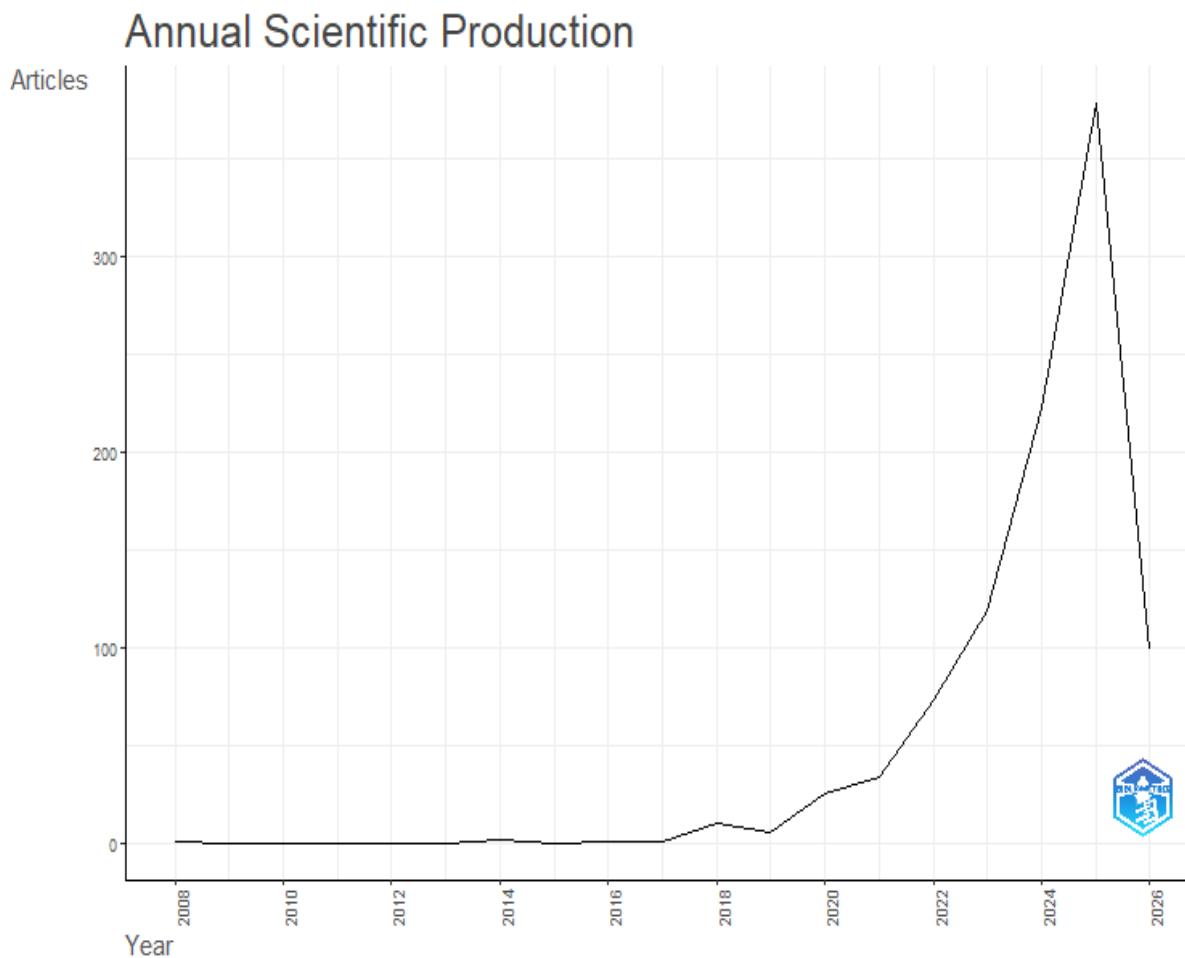
The dataset comprises 970 journal articles published across 488 sources between 2008 and 2026, involving 2,647 authors and supported by 92,867 references. These indicators reflect a substantial and diverse body of literature, providing a strong foundation for examining the evolution of financial literacy and digital finance research. The average of 3.2 authors per document and an international co-authorship rate of 26.19% indicate a moderately collaborative and increasingly global research environment, while the presence of 97 single-authored studies suggests that individual scholarly contributions remain relevant within the field.

The temporal distribution of publications reveals a clear and pronounced growth trajectory. Research output remained relatively limited during the early period (2008–2018), indicating that the field was in a nascent stage with fragmented scholarly attention. However, a significant inflection point emerged around 2019, followed by

a rapid and sustained increase in publication volume, peaking in recent years. This sharp rise corresponds closely with the global acceleration of digital financial services and the widespread adoption of financial technologies, particularly during the COVID-19 pandemic, which intensified reliance on digital payment systems and online financial platforms.

In terms of impact, the average of 13.91 citations per document, combined with a low average document age of 2.03 years, suggests that the field is both highly contemporary and gaining scholarly traction. Collectively, these findings indicate that financial literacy and digital finance constitute a rapidly expanding and evolving research domain, characterized by strong growth momentum, increasing collaboration, and significant relevance to ongoing global economic transformations.

Figure 1. Annual Scientific Production (2008–2026)



The annual scientific production trend derived from the Scopus dataset provides a temporal overview of research growth in financial literacy and digital finance, based on 970 documents published across 488 sources by 2,647 authors and supported by 92,867 references between 2008 and 2026. These indicators are essential for understanding the expansion, maturity, and dynamism of the field. The results show a relatively low and stable publication output between 2008 and 2018, followed by a sharp and sustained increase from 2019 onwards, peaking around 2024–2025, which reflects a significant acceleration in scholarly activity. Productivity metrics, including a high annual growth rate of 29.08%, an average of 3.2 co-authors per document, and 26.19% international collaboration, indicate a rapidly expanding and moderately globalized research landscape, with some presence of single-authored works. Citation indicators (13.91 citations per document and an average document age of 2.03 years) suggest a young yet increasingly influential field. The observed growth pattern indicates bursts of activity rather than gradual expansion, likely driven by digital transformation and the COVID-19 pandemic. These findings imply that the field remains in an emerging stage, offering substantial opportunities for future research to deepen theoretical development, enhance cross-country collaboration, and address evolving challenges in digital financial inclusion and literacy.

Most Relevant Sources (Bradford’s Law)

Table 2. Most Relevant Journals in Financial Literacy and Digital Finance Research

Rank	Journal	Articles (NP)	Total Citations (TC)	h-index
1	International Journal of Bank Marketing	30	625	12
2	Finance Research Letters	20	859	8
3	Sustainability	20	549	12
4	Journal of Risk and Financial Management	16	242	6
5	Investment Management and Financial Innovations	15	93	6
6	Cogent Economics and Finance	10	219	6
7	Journal of Behavioral and Experimental Finance	10	153	5
8	Journal of Financial Services Marketing	10	135	3
9	Cogent Business and Management	9	128	6
10	SAGE Open	9	84	5

The Bradford’s Law distribution of most relevant sources, based on the Scopus dataset , reflects a concentrated yet expanding knowledge base in financial literacy and digital finance, such indicators are essential for assessing the structural maturity and dissemination patterns of the field. The core journals are led by International Journal of Bank Marketing (30 articles; h-index 12) and Finance Research Letters (20 articles; 859 citations), highlighting a distinction between productivity and citation impact. Supporting outlets such as Sustainability and Journal of Risk and Financial Management further reinforce the interdisciplinary nature of the field. Productivity metrics, including a 29.08% annual growth rate, 3.2 co-authors per document, and 26.19% international collaboration, indicate a moderately global and collaborative research environment, albeit with some single-authored contributions. Citation indicators (13.91 citations per document; average age 2.03 years) suggest a relatively young yet influential field. Temporally, publication activity intensifies post-2020, aligning with digital finance expansion during COVID-19. Overall, the field exhibits characteristics of an emerging but rapidly consolidating domain, where core journals shape intellectual direction, and future research should emphasize high-impact, theory-driven contributions and broader international collaboration to enhance scholarly influence.

Leading Countries and Affiliations

Table 3. Top Contributing Countries in Financial Literacy and Digital Finance Research

Rank	Country	Publications	Total Citations	Avg. Citations per Article
1	China	326	3,253	23.6
2	Indonesia	295	595	6.8
3	India	289	1,171	10.9

4	USA	176	1,291	23.1
5	Malaysia	128	500	11.9
6	Australia	44	786	49.1
7	Italy	43	357	17.9
8	Jordan	42	297	33.0
9	Spain	40	159	12.2
10	South Africa	36	153	10.9

The country and affiliation analysis derived from the Scopus dataset provides critical insight into the geographical and institutional structure of research on financial literacy and digital finance. These indicators are essential for understanding global knowledge production, collaboration patterns, and research impact. The findings reveal that China (326 publications), Indonesia (295), and India (289) dominate in productivity, significantly surpassing developed economies such as the USA (176), highlighting the prominence of emerging markets. However, citation impact varies considerably, with Australia (49.1 average citations) and Jordan (33.0) outperforming more productive countries, indicating higher-quality or more influential contributions. Productivity indicators, including a 29.08% annual growth rate, an average of 3.2 co-authors per document, and 26.19% international collaboration, suggest a moderately globalized but still regionally clustered research network, with some single-authored studies present. Citation metrics (13.91 citations per document; average age 2.03 years) confirm the field’s contemporary and evolving nature. The temporal surge post-2020 reflects increased scholarly attention driven by digital transformation during COVID-19. Overall, the field is emerging and dynamic, with strong contributions from developing economies, yet future research should prioritize cross-country collaboration and theoretical advancement to enhance global impact and address disparities in research quality.

Prominent Authors

Table 4. Most Productive and Most Influential Authors

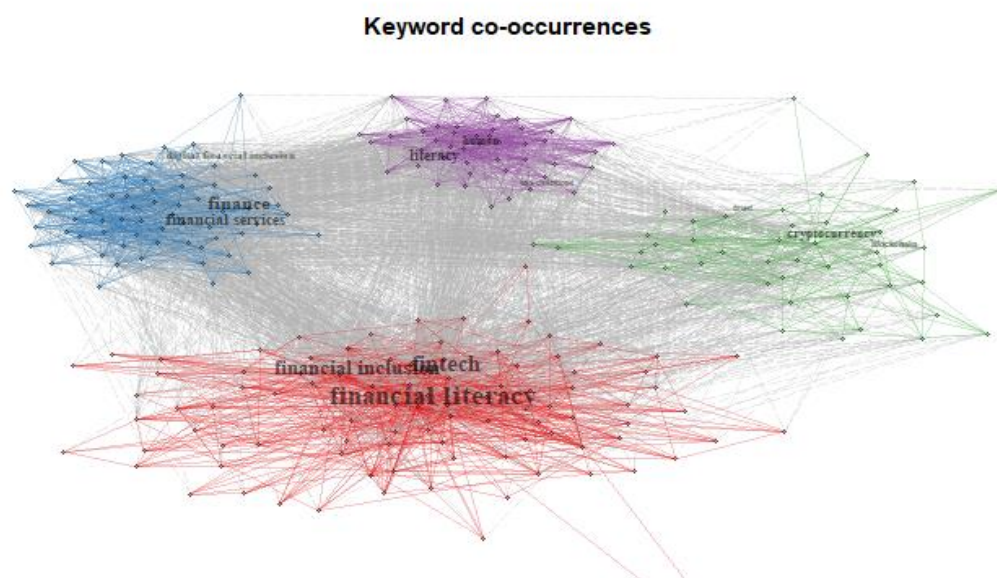
Rank	Most Productive Author	Articles	Most Influential Author	Local Citations
1	Bai Z.	10	Kass-Hanna J.	126
2	Zhang Y.	8	Lyons A.C.	126
3	Setiawan B.	7	Setiawan B.	94
4	Zhou Y.	7	Nathan R.J.	82
5	Chatterjee S.	6	Dewi V.I.	80
6	Gupta A.	6	Chatterjee S.	79
7	Hasan M.	6	Wu Y.	75
8	Liu Y.	6	Effendi N.	67
9	Zhang X.	6	Hasan M.	67
10	Fan L.	5	Sapulete M.S.	67

The prominent author analysis based on the Scopus dataset provides insight into the intellectual structure and contributor dynamics of financial literacy and digital finance research. These indicators are essential for identifying leading contributors, knowledge diffusion, and scholarly influence. The results reveal a clear distinction between productivity and impact: Bai Z. emerges as the most productive author (10 publications), followed by Zhang Y. and Setiawan B., while Kass-Hanna J. and Lyons A.C. are the most locally cited (126 citations each), indicating their foundational role in shaping the field. Productivity indicators, including a 29.08% annual growth rate, an average of 3.2 co-authors per document, and 26.19% international collaboration, suggest a collaborative and increasingly global research environment, although the presence of single-authored works indicates continued individual contributions. Citation metrics (13.91 citations per document; average age 2.03 years) reflect a young but impactful field. The temporal growth surge post-2020 highlights accelerated scholarly engagement. Overall, the field is evolving rapidly, with a mix of emerging prolific authors and established intellectual leaders, suggesting opportunities for new researchers to contribute novel, high-impact work while building on existing foundational studies.

Results Part II: Science Mapping

Conceptual Structure (Keyword Co-occurrence)

Figure 2. Conceptual Structure (Keyword Co-occurrence)



To further explore the intellectual and conceptual structure of the field, science mapping techniques are employed. The keyword co-occurrence network provides a visual representation of the conceptual structure of the field by identifying relationships among frequently used author keywords. This approach reveals how core themes are interconnected and highlights the dominant research streams shaping the discourse on financial literacy and digital finance.

The analysis shows that “financial literacy” occupies a central position within the network, indicating its role as the primary anchor of the research domain. It is strongly connected to key terms such as “financial inclusion” and “financial technology (fintech),” forming a core triadic structure that reflects the main trajectory of the literature. This interconnectedness suggests that financial literacy is increasingly examined not in isolation, but as part of a broader ecosystem where digital innovation facilitates access to financial services and promotes inclusive economic participation.

In addition to the central cluster, several secondary clusters emerge, reflecting thematic diversification within the field. One cluster emphasizes “financial services” and “finance,” representing institutional and market-oriented perspectives, while another focuses on “literacy” and education-related dimensions, highlighting the role of knowledge acquisition and behavioral development. More recent clusters include technologically oriented

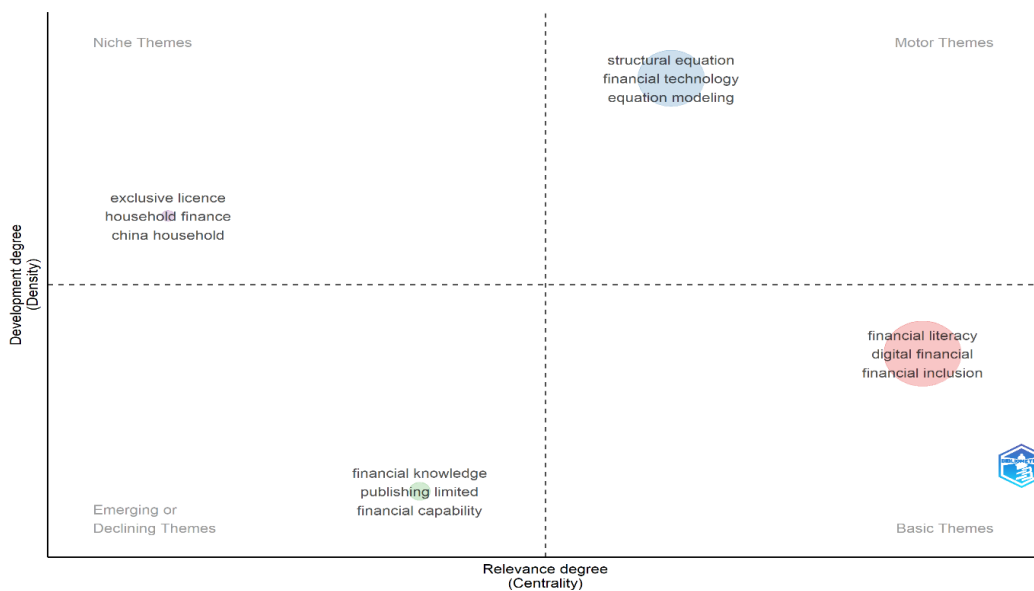
themes such as “cryptocurrency” and “blockchain,” indicating a growing research interest in advanced digital financial instruments and their implications for financial decision-making.

The structure of the network suggests a clear transition from traditional financial literacy research toward a more integrated, technology-driven paradigm. Rather than focusing solely on basic financial knowledge, the field is increasingly incorporating digital competencies, risk awareness, and behavioral dimensions associated with emerging financial technologies. This evolution reflects the expanding complexity of financial systems in the digital era.

Overall, the conceptual structure demonstrates that the field is both cohesive and expanding, with a strong core foundation supported by emerging specialized topics. This pattern indicates significant opportunities for future research to further integrate technological innovation with financial literacy frameworks, particularly in addressing issues related to digital inclusion, consumer protection, and financial resilience.

Thematic Map

Figure 3. Thematic Map



The thematic map provides a structured representation of the conceptual landscape of financial literacy and digital finance research by categorizing themes according to their centrality (relevance) and density (development). This classification enables a deeper understanding of how different research topics contribute to and evolve within the broader field.

The results indicate that motor themes, characterized by high centrality and density, are dominated by “financial technology” and “structural equation modeling.” These themes are both well-developed and highly influential, suggesting that the field has progressed beyond descriptive exploration toward more sophisticated, model-driven empirical analysis. The prominence of financial technology reflects the central role of digital innovation in shaping contemporary financial behavior, while the widespread use of structural equation modeling highlights the growing emphasis on testing complex relationships between financial literacy, technology adoption, and consumer outcomes.

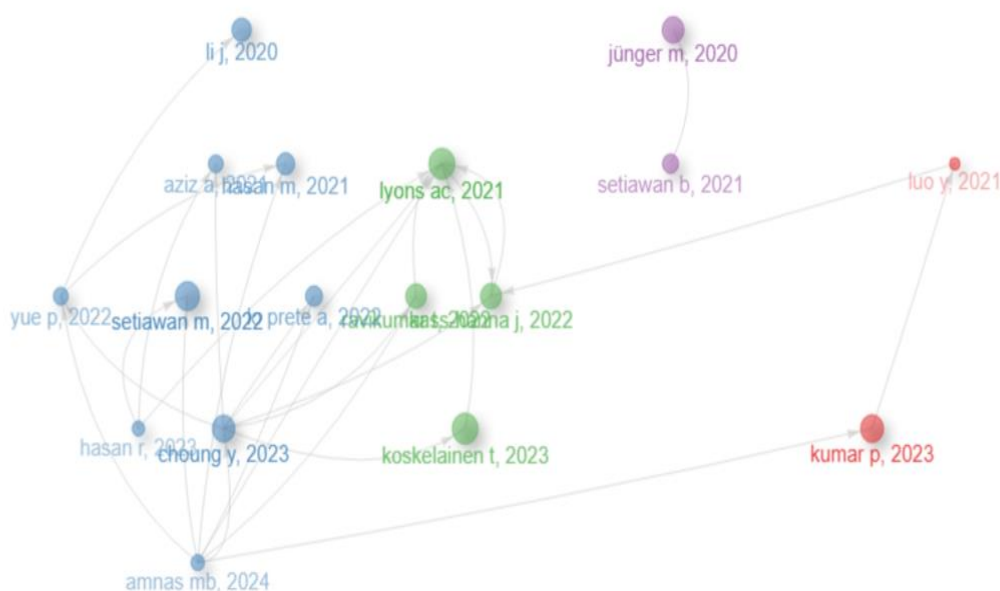
In contrast, “financial literacy,” “financial inclusion,” and “digital financial inclusion” are positioned as basic themes, exhibiting high relevance but lower internal development. This indicates that while these concepts form the foundational pillars of the field, they remain broadly defined and insufficiently integrated at a deeper theoretical level. Their central position underscores their importance as transversal topics that connect multiple research streams, yet their lower density suggests the need for further conceptual refinement and theoretical advancement.

Additionally, themes such as “financial knowledge” and “financial capability” appear within the emerging or declining quadrant, reflecting a transitional shift in the literature. This suggests that the field is moving away from traditional, knowledge-based perspectives toward more dynamic and technology-oriented constructs that emphasize behavioral and digital competencies.

Overall, the thematic structure reveals a field undergoing rapid transformation, where established foundational concepts coexist with increasingly advanced and specialized research areas. This imbalance highlights a critical research opportunity: future studies should focus on strengthening the theoretical integration of foundational themes while incorporating digital dimensions, thereby bridging the gap between traditional financial literacy and the evolving demands of a digital financial ecosystem.

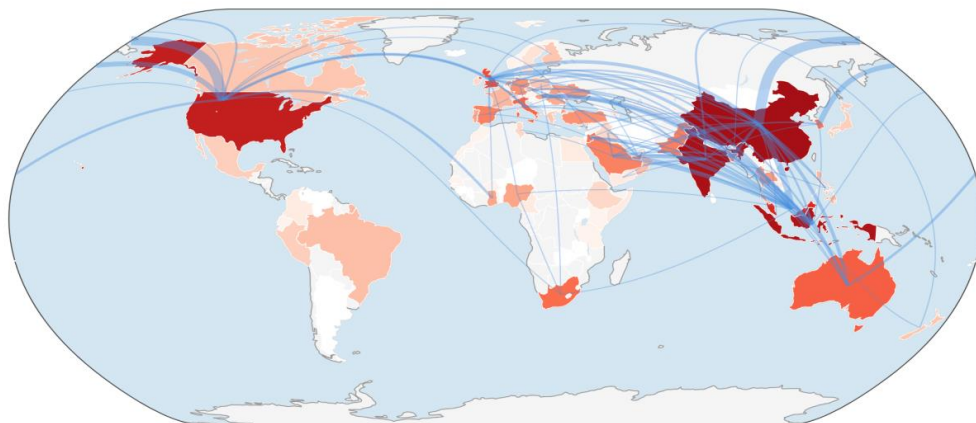
Intellectual and Social Structure

Figure 3. Historiographic Network



The historiographic network derived from the Scopus dataset illustrates the chronological development and citation relationships shaping research in financial literacy and digital finance. These indicators are essential for tracing intellectual progression and identifying influential contributions within the field. The network highlights a concentration of influential studies emerging primarily after 2020, with key nodes such as Lyons (2021), Setiawan (2021), and Kumar (2023) acting as central connectors, reflecting a recent consolidation of knowledge. Productivity indicators, including a 29.08% annual growth rate, an average of 3.2 co-authors per document, and 26.19% international collaboration, indicate a rapidly expanding and moderately globalized research environment, although some single-authored works remain. Citation metrics (13.91 citations per document; average document age of 2.03 years) suggest a relatively young yet increasingly impactful field. Temporally, the historiograph demonstrates a clear shift from scattered early contributions to dense, interconnected research clusters in recent years, indicating bursts of scholarly activity rather than gradual growth. This pattern aligns with global digital transformation trends, particularly during the COVID-19 period. Overall, the field is in an emerging and consolidation phase, with strong opportunities for future research to enhance theoretical integration, expand international collaboration, and develop more cohesive and impactful research frameworks.

Figure 4. Global Collaboration Map



The global collaboration map derived from the Scopus dataset provides a spatial visualization of international research linkages in financial literacy and digital finance. These indicators are essential for understanding the geographical distribution of knowledge production and the extent of cross-border collaboration. The map highlights strong research activity concentrated in emerging economies, particularly China, India, and Southeast Asia, alongside significant contributions from the United States and Australia, with visible collaboration flows connecting Asia with Europe and North America. Productivity metrics, including a high annual growth rate of 29.08%, an average of 3.2 co-authors per document, and 26.19% international collaboration, indicate a moderately globalized research network, although collaboration remains unevenly distributed across regions, with some localized clusters and single-authored outputs. Citation indicators (13.91 citations per document and an average document age of 2.03 years) suggest a relatively young but increasingly influential field. The temporal expansion of collaboration links, particularly after 2020, reflects intensified global research engagement aligned with digital transformation during the COVID-19 period. Overall, the field is in an emerging yet rapidly globalizing phase, with significant opportunities to strengthen international partnerships, particularly between developed and emerging economies, to enhance research quality, theoretical integration, and policy impact.

DISCUSSION AND FUTURE RESEARCH DIRECTIONS

Building on the empirical findings, this section provides a critical interpretation of the results and outlines future research directions. The findings of this bibliometric analysis reveal a decisive transformation in the financial literacy domain, shifting from traditional knowledge-based frameworks toward digitally embedded financial ecosystems. This transition reflects not merely a technological evolution, but a structural redefinition of financial capability, aligning with broader theoretical perspectives emphasizing the role of financial literacy in improving economic outcomes (Lusardi & Mitchell, 2014).

First, the dominance of emerging economies—particularly China, Indonesia, India, and Malaysia—signals a significant geographical reorientation of scholarly activity. This aligns with global financial inclusion trends, where digital financial services have enabled rapid access to financial systems in previously underserved populations (Demirgüç-Kunt et al., 2022). Moreover, the success of mobile money platforms demonstrates how digital finance can enhance financial resilience and reduce inequality (Suri & Jack, 2016).

Second, the strong co-occurrence between fintech, financial literacy, and financial inclusion underscores a critical paradigm shift from access to capability. While earlier literature emphasized financial access (Allen et al., 2016), this study confirms that access alone is insufficient without the necessary digital competencies. The increasing complexity of digital financial products, including cryptocurrencies and algorithm-driven platforms,

requires a broader conceptualization of financial literacy that incorporates technological awareness and behavioral insights.

Third, the emergence of advanced methodological approaches, particularly structural equation modeling, reflects the maturation of the field. This aligns with broader fintech research trends emphasizing empirical validation and causal inference (Gomber et al., 2017). However, the dominance of specific methodologies also highlights the need for diversification, including experimental and longitudinal approaches, to capture the dynamic nature of digital financial behavior.

Furthermore, the thematic map highlights an important conceptual transition. While financial literacy and financial inclusion remain central but underdeveloped (basic themes), more advanced topics such as fintech and digital financial literacy are well-developed and highly relevant (motor themes). This imbalance suggests that foundational constructs have not evolved at the same pace as technological advancements. Consequently, there is a pressing need to reconceptualize financial literacy within a digital context, integrating elements such as data privacy awareness, platform risk assessment, and digital behavioral biases.

From a policy perspective, these findings carry significant implications. Governments and regulators must move beyond promoting financial access toward fostering digital financial capability. This includes embedding digital financial education into national curricula, developing standardized measurement indices, and strengthening consumer protection frameworks against emerging risks such as digital fraud and over-indebtedness.

Limitations

This study is subject to several limitations. First, the analysis is restricted to the Scopus database, which may exclude relevant studies indexed in other databases such as Web of Science. Second, bibliometric techniques primarily capture quantitative patterns and may not fully reflect deeper theoretical contributions. Third, the rapidly evolving nature of digital finance implies that recent developments may not yet be fully captured in citation-based analyses. Future research could address these limitations by incorporating multi-database approaches and mixed-method designs.

CONCLUSION

This study provides a comprehensive bibliometric assessment of financial literacy in the context of digital finance, highlighting the rapid expansion and increasing complexity of the field. The findings demonstrate that research has accelerated significantly since 2020, driven by global digital transformation and the widespread adoption of financial technologies. Consistent with global evidence on financial inclusion and digital payments (Demirgüç-Kunt et al., 2022), the field reflects a growing recognition of digital financial literacy as a critical component of economic participation. While the field is supported by a strong theoretical foundation, it remains in an emerging stage, characterized by high growth and evolving thematic structures. This study contributes by providing a structured roadmap for future research and emphasizes the need for interdisciplinary approaches to address the challenges of digital financial inclusion.

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