INVESTIGATING THE EFFECT OF DIGITAL FINANCIAL LITERACY: A SYSTEMATIC REVIEW

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ABSTRACT

This systematic literature review investigates the evolving role of digital financial literacy (DFL) in shaping financial behavior, inclusion, entrepreneurship, and engagement with digital technologies. Based on 52 peer-reviewed articles published between 2010 and July 2025 from the Scopus database, the review highlights the growing significance of DFL in helping individuals effectively use digital financial services such as mobile banking, online payments, and investment platforms. The study is grounded in theoretical frameworks like the Technology Acceptance Model, Unified Theory of Acceptance and Use of Technology, and Financial Literacy Theory, all emphasizing the role of literacy in technology adoption and financial empowerment. A noticeable increase in DFL research after 2022 reflects rising academic interest, with 98 percent of studies employing quantitative

methods like regression and structural equation modeling. Research contributions are notably high from countries like Indonesia and India. The findings are grouped into five key themes: Financial Well-Being and Behavior accounting for 32.08 percent, Financial Inclusion and Access making up 24.53 percent, Entrepreneurship and Medium Small and Micro Enterprises (MSME) Development representing 18.87 percent, Digital Financial Technologies and Tools contributing 15.09 percent, and Women Empowerment and Gender Finance accounting for 9.43 percent. Evidence from countries such as South Korea, Indonesia, China, and India shows that DFL enhances savings habits, reduces financial stress, and improves financial confidence and inclusion, particularly among marginalized and underserved populations. The review concludes that DFL is crucial for building inclusive and sustainable financial systems. Despite its limitations, mainly relying on English-language, Scopus-indexed articles, the study provide valuable insights for policymakers, educators, and financial service providers. Future research should focus on exploring the long-term impacts of DFL and its dynamic interplay with emerging FinTech innovations.

JEL Classification: G41, I22, L26, O16, O33

INTRODUCTION

DFL is the ability to access, understand, and utilize digital financial services and tools safely and effectively. This includes mobile payments, online banking, cybersecurity awareness, and the capacity to make informed financial decisions in a digital environment (Suyanto et al., 2025). Individuals with strong DFL can choose more profitable and efficient financial services based on their need, which supports better personal finance management and business outcomes (Hasan et al., 2024).

In the post-COVID-19 era, digital transformation has reshaped the nature of work, making entrepreneurial adaptability and digital competence crucial for identifying and seizing new opportunities (Kang et al., 2024). DFL, which integrates both financial and digital literacy, supports financial inclusion by enabling individuals to engage with digital financial

services while understanding the associated risks (Widyastuti et al., 2024).

Despite the growing relevance of digital finance, research on digitization's role in enhancing access to finance is limited (Frimpong et al., 2024). As digital financial services expand globally—especially in low- and middle-income countries—it is vital to assess whether populations possess the necessary skills to use these tools effectively (Hasler & Lusardi, 2017; Morgan et al., 2020).

DFL plays a key role in supporting financial inclusion by making financial platforms more accessible for daily transactions, investing, and internet-based money transfers. This expansion contributes to economic growth and digital financial inclusion (Widyastuti et al., 2024). Moreover, DFL significantly enhances household entrepreneurship, particularly in rural and underdeveloped regions, as shown by Xie and Chen (2025), which used an instrumental variable approach to confirm these effects.

This study addresses the need for a comprehensive review of DFL literature. It systematically analyzes Scopus-indexed articles up to July 7, 2025, and proposes a taxonomy model to categorize the core components of DFL. The review highlights DFL's role in fostering financial inclusion, economic empowerment, and digital payment adoption. The findings aim to support policymakers, educators, and financial practitioners in designing effective DFL interventions and guiding future research in digital financial behavior and technology-driven financial decision-making.

REVIEW OF LITERATURE

Theoretical Review

Research on DFL has grown significantly, guided by theoretical frameworks that explain how individuals adopt and benefit from digital financial tools. The Technology Acceptance Model (TAM) by Davis (1989) emphasizes that perceived usefulness and ease of use influence technology adoption. In Nepal, studies like Adhikari et al. (2024) confirm that

higher DFL levels improve these perceptions, encouraging the use of digital payments and FinTech services.

The Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. (2003) adds dimensions such as social influence and facilitating conditions. Thapa (2025) applies UTAUT in Nepal to show how digital literacy reduces anxiety and enhances user confidence in mobile banking.

Ozili's (2020) Financial Literacy Theory of Financial Inclusion asserts that education in financial literacy increases participation in the formal financial sector. Altogether, these theories present a multi-theoretical lens, showing that DFL fosters trust, capability, and responsible financial behavior in the digital age, especially in developing economies like Nepal.

Empirical Review

DFL is an emerging concept that encompasses the ability to manage personal finances using digital tools and platforms. It includes financial knowledge, digital skills, and awareness of digital financial services, practical usage ability, and self-protection against fraud. Choung et al. (2025) examined DFL's relationship with life satisfaction among 1,615 Korean users of digital financial services. They found a strong positive link, particularly emphasizing the importance of self-protection against fraud, whereas basic financial knowledge alone had no significant effect when other factors were controlled.

Kim et al. (2025) explored DFL among Vietnamese youth, finding that higher DFL levels were associated with increased use of online financial tools for saving. These findings underscore the growing importance of digital competence in applying financial knowledge effectively in today's financial ecosystem.

In terms of financial inclusion, Tulcanaza-Prieto et al. (2025) highlighted that digital literacy enhances the effectiveness of financial education. Their study indicated that individuals

with stronger digital skills benefited more from such programs, especially in rural and low-income settings. Thus, developing digital competencies is essential for improving the success of financial inclusion initiatives.

Structural and demographic factors also influence DFL. Mothey et al. (2024), in their study of Indian households, found that income, education, urban versus rural location, and gender strongly affected digital banking use and DFL levels. Women and rural residents generally had lower DFL, indicating the need for inclusive policies, localized content, and mobile-accessible training to close digital gaps.

In Indonesia, Rahayu et al. (2023) found that higher DFL promotes responsible saving and increased use of digital banking among youth. Suparno et al. (2023) reported that for Generation Z, digital literacy and brand image strongly influence Islamic banking choices, suggesting that financial institutions should enhance digital outreach and branding to engage the younger, tech-savvy population.

Respati et al. (2022) found that digital financial literacy (DFL) significantly influences Indonesian university students' financial behavior, improving their financial well-being, with financial confidence also being important. Using structural equation modeling, the study emphasizes integrating digital financial education into curricula, while noting sample limitations and recommending more diverse future research to better prepare students for managing finances in a digital environment.

Digital financial literacy enhances well-being, empowerment, and behavior. Beyond knowledge, it needs inclusive education, digital skills, consumer protection, and Fin-Tech literacy to reduce disparities and promote broad economic participation.

In conclusion DFL is essential for resilience, inclusion, and empowerment in the digital age. As technology evolves, DFL strengthens informed decision-making. Policymakers, educators, and financial institutions must promote inclusive, adaptive, and accessible DFL programs for diverse populations and changing financial environments.

MATERIALS AND METHODS

Sources of Data and Search Strategy

This research study has implemented a systematic literature review for the analysis of relevant research articles in the context of digital financial literacy. The time framing ranged from 2010 to July 7, 2025 AD. The year 2010 was taken as the base period due to the increasing use of digital financial services after 2010, and governments began to realize that people needed new skills to safely manage money online (Klapper et al., 2015). The data for this study were obtained from Scopus on July 7, 2025. The search retrieved English-language conference papers and articles categorized within economics, business, and social sciences, focusing on the period up to July 7, 2025. This study used several interchangeable terms for "digital". It employed a comprehensive search string; TITLE ((digital or online or electronic) and "financial literacy") AND PUBYEAR >2009 AND PUBYEAR < 2026 AND (LIMIT-TO (SRCTYPE, "j")) AND (LIMIT-TO (PUBSTAGE, "final")) AND (LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "cp")) AND (LIMIT-TO (SUBAREA, "ECON") OR LIMIT-TO (SUBJAREA, "SOCI") OR LIMIT-TO (SUBJAREA, "BUSI")) AND (LIMIT-TO (LANGUAGE, "English")) in title yielding 98 initial results.

Inclusion and Exclusion Criteria

The inclusion criteria for article selection were defined to ensure relevance and methodological diversity. The following inclusion criterion for articles has been followed;

- Time framed from 2010 to July 7, 2025 AD, research articles.
- Subject areas include Business, Management, and Accounting; Economics, Econometrics, and Finance; and Social Science
- Document type includes Article and conference paper
- Publication includes the Final publication
- Source type includes Journal
- Language includes English

- Full-text articles.
- Research articles based on qualitative, quantitative, and mixed-method research designs.
- Relevant research articles
- The following exclusion criterion for articles has been followed;
- Exclusion books.
- Exclusion conference paper.
- Exclusion of theses/dissertations.
- Studies without a clear methodology

Data Collection Process and Articles Screening

FIGURE 1

PRISMA Framework
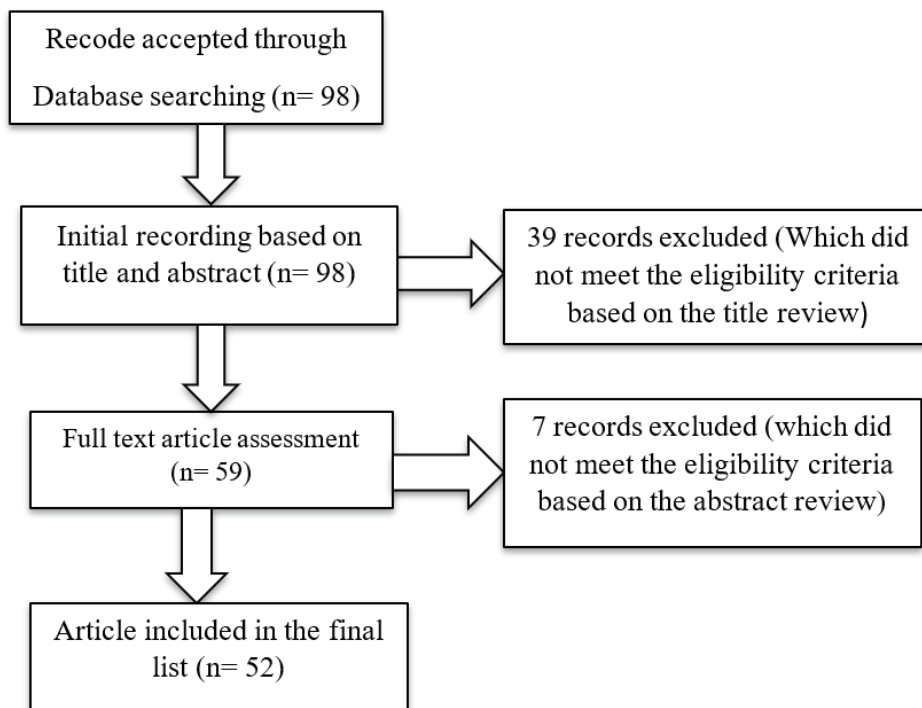
This study followed to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses framework, the study applied a two-stage screening process involving title, abstract, and full-text reviews. Initially, 39 unrelated articles were excluded, leaving 59. After further review, 7 more were removed based on the abstract, resulting in 52 final articles directly relevant to digital financial literacy.

Data Analysis Techniques

Data analysis included various dimensions to achieve the study objectives:

- The general features of the articles have been examined through yearly distribution, data sources, and the statistical tools used in the studies.
- Citation analysis and a keyword co-occurrence map have been developed using VOSviewer software.
- A thematic analysis was conducted to synthesize key insights from the studies based on the extracted dependent and independent variables.

RESULTS AND DISCUSSION

Descriptive Analysis

To identify the overall features of the selected studies, the researcher conducted analyses such as yearly publication of articles, source-based data distribution, and statistical tools used in the selected studies.

Yearly Publication of Articles

Yearly publication of articles; search was conducted on July 7, 2025. The search was limited to articles published between the years 2010 and July 7, 2025. Though within this range, the articles that were actually found were published only from 2019 to April 14,

2025. This means that although the search included earlier years (from 2010 onward), no relevant articles were found before 2019.

FIGURE 2
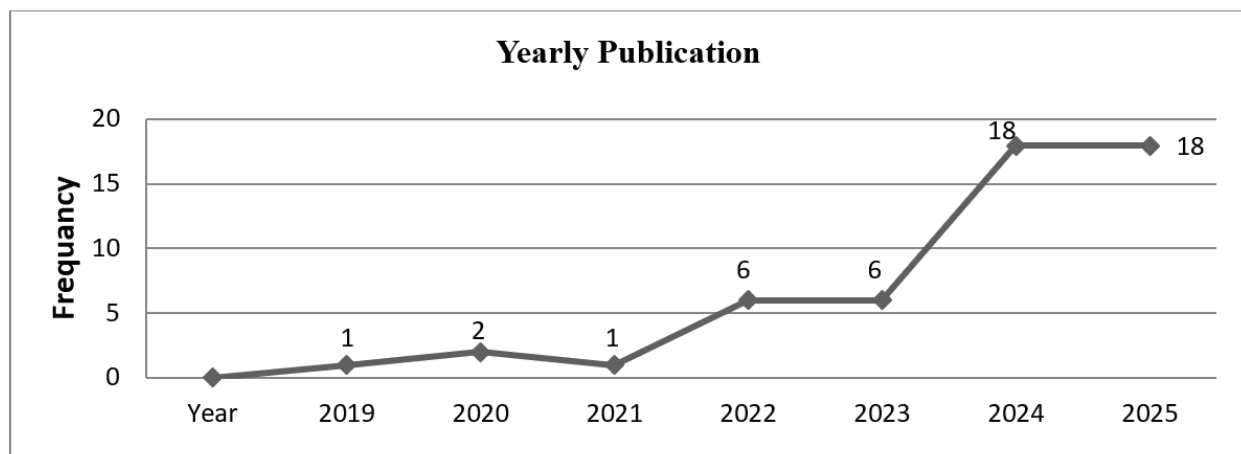
Yearly Publication of Articles

Figure 2 shows that article publication began to appear infrequently, with 1 article in 2019, 2 articles in 2020, and 1 article in 2021, highlighting a limited presence of related research in the early years. A noticeable increase occurred in 2022 and 2023, with 6 articles published in each year, reflecting growing academic interest in the topic. The highest number of articles was recorded in 2024 and 2025, with 18 articles each year. Although the data for 2025 only covers publications up to July 7, the frequency already matches that of the full year 2024. These two years alone account for 36 out of the total 52 articles, representing nearly 70 percent of the overall count. This significant increase in recent years indicates a rapid expansion of research and scholarly attention on the subject, especially after 2023, likely driven by emerging trends, technological advancements, or increasing global relevance of the topic.

Source-Based Data Distribution

The study analyzed 52 articles based on their information sources: primary and secondary. This classification highlights the methodological approaches.

FIGURE 3
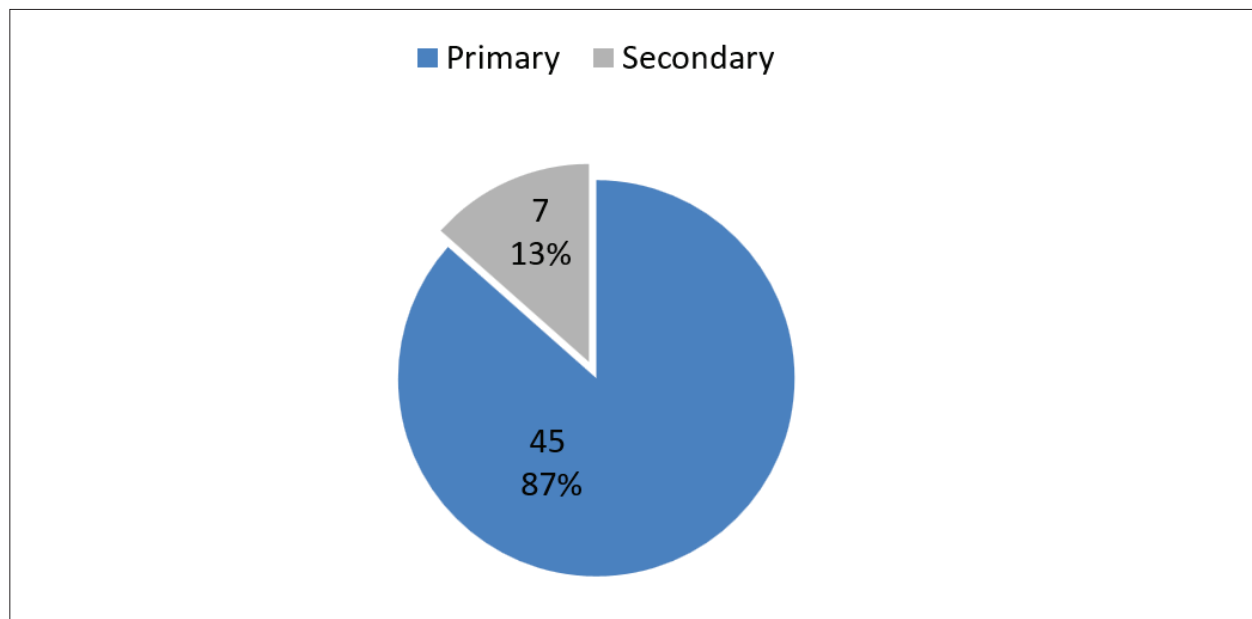
Source-Based data distribution

Figure 3 shows that out of 52 studies, 45 studies, accounting for 87 percent used primary data sources like surveys, interviews, or focus groups, while remaining 7 studies, contributing 13 percent relied on secondary data such as reports or existing datasets. This indicates a strong preference for firsthand data collection, reflecting researchers' emphasis on directly engaging with respondents to meet research objectives.

Statistical Tools Used

The authors of the 52 articles used various statistical tools in their studies. These tools were categorized and analyzed based on frequency and percentage, providing insight into the most commonly used methods across the reviewed research articles.

Table 1: Statistical tools used

Statistical Tool	Frequency	Percentage
Regression (includes multiple linear)	16	19.28
SEM (Structural Equation Modeling)	14	16.87
PLS-SEM / Smart PLS	12	14.46
Correlation (includes Pearson, etc.)	9	10.84
Descriptive Statistics	9	10.84
CFA (Confirmatory Factor Analysis)	4	4.82
EFA (Exploratory Factor Analysis)	2	2.41
Hayes PROCESS Macro / PROCESS Macro Ver.	2	2.41
Factor Analysis (general/iterative)	2	2.41
AMOS (Analysis of Moment Structures)	1	1.20
Probit Model with Endogenous Regression	1	1.20
2SLS Regression	1	1.20
Panel Granger Causality Tests	1	1.20
Two-Way Fixed Effect Panel Model	1	1.20
Binary Logistic Regression	1	1.20

Cronbach's Alpha	1	1.20
Kaiser-Meyer-Olkin (KMO)	1	1.20
Focus Group Discussion / Interview	1	1.20
Interpretive Structural Modeling	1	1.20
Hierarchical Model	1	1.20
R Studio	1	1.20
Total	**83**	**100**

Table 1 summarizes the use of statistical tools in 52 reviewed articles, revealing a total of 83 instances of tool application. Regression analysis, including multiple linear regressions, was the most frequently used method, accounting for 16 cases, accounting for 19.28 percent of the total. SEM followed with 14 instances, making up 16.87 percent, while PLS-SEM or Smart PLS was used in 12 cases, representing 14.46 percent. Correlation analysis and descriptive statistics were each used in 9 cases, each accounting for 10.84 percent, reflecting their importance as foundational research tools. Confirmatory Factor Analysis (CFA) appeared in 4 studies, making up 4.82 percent, while Exploratory Factor Analysis (EFA), the Hayes PROCESS Macro, and general factor analysis were each applied twice, and accounting for 2.41 percent each. Advanced and less common tools, such as AMOS, Probit regression, 2SLS regression, panel models, and focus group discussions, were each reported once, making up 1.20 percent individually.

Citation Analysis

This section involves citations by journal, and citations by country.

Citation by Journal

A minimum of one document per source and at least 17 citations per source are set as the threshold criteria. Based on these conditions, 15 sources meet the required thresholds.

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Table 2: Citation by Journal

S.N.	Source	Citations
1	Borsa Istanbul review	114
2	Financial planning review	105
3	Economics letters	83
4	Economics of innovation and new technology	80
5	Small business economics	78
6	Cogent economics and finance	45
7	Finance research letters	44
8	International journal of social economics	43
9	Journal of risk and financial management	42
10	International journal of data and network science	33
11	International journal of scientific and technology research	25
12	Nurture	25
13	Social indicators research	23
14	Competitiveness review	20
15	Asian economic and financial review	17

Table 2 presents the citation distribution of articles across various academic journals, reflecting the academic influence and multidisciplinary interest in digital financial literacy (DFL) and financial behavior. Leading the list, Borsa Istanbul Review received 114 citations, indicating a highly influential publication in this area. It is followed by Financial Planning Review with 105 citations, emphasizing its relevance in financial literacy and planning. Economics Letters and Economics of Innovation and New Technology received 83 and 80 citations, respectively, highlighting strong interest in the intersection of innovation and financial behavior. Small Business Economics also shows notable influence with 78 citations, reflecting a focus on entrepreneurship and DFL.

Other impactful journals include Cogent Economics and Finance 45, Finance Research

Letters 44, and the International Journal of Social Economics 43 citations, demonstrating contributions from various economic and social perspectives. Journal of Risk and Financial Management and International Journal of Data and Network Science received 42 and 33 citations, respectively, showing the growing role of data-driven research.

Journals such as Social Indicators Research, International Journal of Scientific and Technology Research, and Nurture also contributed, with 23–25 citations. Overall, the citation data reveals a broad, cross-disciplinary interest in DFL and its practical implications.

Citation by Country

A minimum of one document per country and at least 10 citations per source are set as the threshold criteria. Out of 24 countries, 15 meet these requirements.

Table 3: Citations by Country

S.N.	Country	Citations
1	United states	273
2	India	235
3	Indonesia	201
4	Italy	167
5	United Arab Emirates	147
6	Lebanon	105
7	Malaysia	69
8	United kingdom	52
9	South Korea	46
10	Jordan	43
11	Netherlands	43
12	Kuwait	20
13	Germany	11
14	Philippines	11
15	Saudi Arabia	10

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Table 3 presents the global distribution of citations, highlighting international contributions to academic research. The United States leads with 273 citations, reflecting its dominant scholarly role, followed by India with 235 and Indonesia with 201 citations, showing growing influence. Italy 167 and the UAE 147 citation also contribute significantly, while Lebanon leads Middle Eastern participation with 105 citations. Malaysia 69, the UK 52, South Korea 46, Jordan 43, and the Netherlands 43 citations demonstrate moderate engagement. Other contributors include Kuwait 20, Germany and the Philippines 11 each, and Saudi Arabia 10 citations. This distribution illustrates diverse global participation from both developed and emerging nations.

Keyword Co-occurrence Analysis

Keyword Co-occurrence displays the number of Major keywords related to digital financial literacy that have been analyzed using keyword-wise co-occurrence, which is given in Figure 4.

FIGURE 4
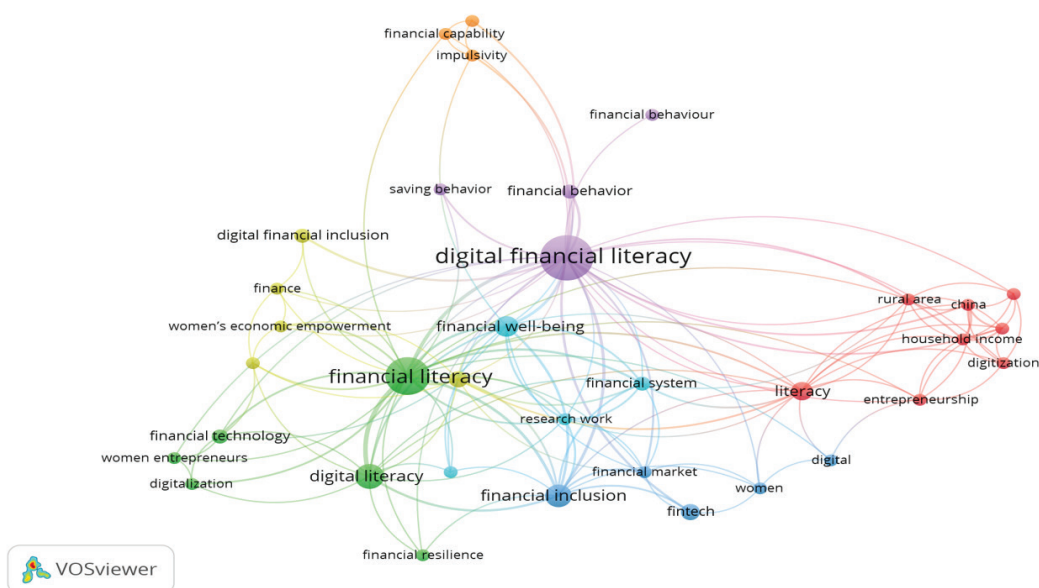
Keyword Co-occurrence Analysis

Figure 4, created using VOSviewer, presents a keyword co-occurrence map based on 227 keywords, with a threshold of two occurrences, yielding 35 frequent terms. "Digital financial literacy" 29 times leads, followed by "financial literacy" 20 times, and "digital literacy" 9 times, indicating strong research focus on digital and financial skills. Key thematic clusters emerge: digital-financial literacy integration; links between financial inclusion and well-being; regional focus on India and China; and the role of digital finance in women's empowerment and sustainable development. Overall, the map highlights a multidimensional, globally relevant research landscape.

Thematic Analysis

Thematic analysis of 52 studies on DFL revealed five major themes. The most prominent is Financial Well-Being and Behavior, accounting for 32.08 percent, which explores how DFL improves individuals' financial decision-making, savings, spending habits, and life satisfaction across different demographics. Studies by Choung et al. (2025) and Respati et al. (2023) confirm that DFL significantly enhances financial behavior and well-being through increased financial confidence.

The second theme, Financial Inclusion and Access, making up 24.53 percent, highlights DFL's role in promoting access to formal financial services—especially in rural or underserved areas, by reducing financial exclusion. Tulcanaza-Prieto et al. (2025) emphasized DFL's moderating role in financial education programs, while Mothey et al. (2024) pointed out demographic disparities in DFL usage.

Entrepreneurship and MSME Development contributing 18.87 percent is the third theme, focusing on how DFL supports the performance, sustainability, and resilience of micro, small, and medium-sized enterprises. Xie & Chen (2025) and Hasan et al. (2024) found DFL to be a key factor influencing entrepreneurial readiness and success, particularly in developing regions.

The fourth theme, Digital Financial Technologies and Tools representing 15.09 percent, addresses the adoption of innovations like blockchain, mobile wallets, and P2P lending. Ferilli et al. (2024) argue that digital literacy is essential for building trust and usability in these evolving tools.

Lastly, Women Empowerment and Gender Finance accounting for 9.43 percent shows how DFL enhances women's financial autonomy and the growth of female-led enterprises. Suparno et al. (2023) found digital engagement and branding to significantly influence women's financial empowerment.

Overall, these themes illustrate that DFL has a multidimensional impact on personal finance, business development, technological adoption, financial access, and social empowerment.

Discussion

This study reviews 52 Scopus-indexed articles on DFL, showing rapid growth since 2022 and global significance. Most research used primary data with methods like Regression, SEM, PLS-SEM, and Pearson correlation, highlighting DFL's multidimensional nature and its expanding role in shaping financial behavior and promoting financial inclusion worldwide.

The findings indicate that DFL has a significant impact on financial well-being and behavior account for 32.08 percent, promoting responsible saving, disciplined spending, and informed decision-making. These results align with Choung et al. (2025) and Respati et al. (2023), who found a strong positive relationship between DFL, financial confidence, and life satisfaction in South Korea and Indonesia. Additionally, financial inclusion and access make up 24.53 percent are directly enhanced by DFL, confirming its role in bridging financial gaps. Tulcanaza-Prieto et al. (2025) and Mothey et al. (2024) highlighted demographic disparities, urban versus rural and male versus female, emphasizing the need for inclusive DFL programs tailored to different populations.

Another major dimension identified is entrepreneurship and MSME development represented 18.87 percent, where studies such as Xie & Chen (2025) and Hasan et al. (2024) demonstrate that DFL enhances entrepreneurial readiness and performance, particularly in underdeveloped regions. The review also reveals that digital financial technologies compose 15.09 percent; including mobile wallets and P2P lending, demand continual adaptation, as noted by Ferilli et al. (2024). Although women's empowerment and gender finance accounted for 9.43% percent had the least coverage, research by Suparno et al. (2023) suggests that DFL contributes significantly to women's financial autonomy. Overall, the review concludes that digital financial literacy is vital for promoting financial well-being, inclusion, entrepreneurship, and empowerment in an evolving digital economy.

CONCLUSION AND SUGGESTIONS

This systematic literature review highlights the transformative role of DFL in the evolving financial landscape. DFL encompasses not only financial knowledge but also access to digital tools, confidence in technology use, and awareness of online financial risks. These competencies enable individuals to participate effectively and securely in digital finance. The review indicates that DFL enhances key financial behaviors, such as budgeting, saving, investing, and responsible decision-making, thereby improving overall financial well-being.

Furthermore, DFL significantly contributes to financial inclusion by enabling underserved populations to access and utilize digital financial services such as mobile banking, e-wallets, and online payments. Studies by Xie and Chen (2025) and Rahayu et al. (2023) reveal its positive effects on rural entrepreneurship and youth financial planning, emphasizing DFL's potential to bridge socio-economic disparities. The growing academic focus on DFL demonstrates global recognition of its role in inclusive and sustainable development.

The review recommends integrating DFL into national financial education policies tailored to diverse groups, youth, women, and rural communities. Investment in digital infrastructure, user-friendly platforms, and consumer protection is vital to ensure safe participation in digital finance. Strengthened collaboration among policymakers, educators, and fin-tech industries can foster inclusive digital ecosystems.

Future research needs to explore DFL's long-term effects across life stages and its impact on vulnerable groups. Experimental and qualitative studies are needed to understand behavioral aspects and interactions with technologies like AI and block-chain. Strengthening DFL equitable growth, fosters empowerment, and financial inclusion, within the digital economy.

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