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TRACING THE EVOLUTION OF DIGITAL FINANCIAL LITERACY AND ITS IMPACT ON MICROENTERPRISE PERFORMANCE

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Abstract:

Digital financial literacy has gained increasing attention as an essential capability influencing financial decision-making, technological adoption, and microenterprise performance. Despite the growing body of literature, the historical development of research on digital financial literacy and its contribution to microenterprise performance remains insufficiently explored, particularly regarding changes in research priorities and emerging scholarly perspectives. Therefore, this study aims to trace the evolution of digital financial literacy research and its relationship with microenterprise performance through a chronological literature review. A systematic literature search was conducted using the Scopus database, employing advanced search strategies with relevant keywords related to digital financial literacy, microenterprises, and business performance. Following the application of predefined inclusion and exclusion criteria, a total of 272 publications published between 2013 and 5th November 2026 were identified and analyzed. Based on annual publication trends, the literature was categorized into three distinct chronological phases: Emerging Research Phase (2013–2020), Research Development Phase (2021–2023), and Research Expansion Phase (2024–2026). The findings revealed a progressive increase in scholarly attention, with 31 publications (11.40%) during the emerging phase, 52 publications (19.12%) during the development phase, and 189 publications (69.49%) during the expansion phase. The chronological analysis further demonstrated a shift from conventional financial literacy and financial accessibility toward digital financial

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capabilities, financial technology adoption, entrepreneurial resilience, and business sustainability. The findings also indicated that financial literacy alone did not consistently improve enterprise performance, as its effectiveness was influenced by technological competencies, financial inclusion, managerial capabilities, and institutional support. This study contributes to the literature by providing a structured understanding of research evolution and identifying emerging directions for future investigation. The findings highlight the importance of integrating financial and digital competencies to strengthen microenterprise performance and long-term sustainability.

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Keyword:

Business Performance, Digital Financial Literacy, Microenterprise

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Introduction

Digital financial literacy has rapidly evolved alongside the expansion of digital finance, becoming a crucial competency for individuals and microenterprises navigating today's increasingly digitalized economy (Putri et al., 2026; Xie & Chen, 2025). The shift from traditional financial literacy to digital financial literacy reflects the integration of technology into financial activities, requiring new skills, knowledge, and awareness to effectively utilize digital tools and platforms for financial decision-making and business operations (Putri et al., 2026; Ratnawati et al., 2025). This evolution is driven by the proliferation of digital financial services, such as digital lending platforms and online payment systems, which have transformed the landscape for microenterprises by enhancing access to credit, streamlining transactions, and fostering innovation (Anute et al., 2025; Li et al., 2023; Pattnayak & Sahoo, 2024). As digital financial literacy has advanced, its impact on microenterprise performance has become increasingly evident. Many studies show that higher levels of digital financial literacy significantly enhance firm performance, particularly among micro, small, and medium-sized enterprises (MSMEs) (Nizam et al., 2025; Ratnawati et al., 2025). This improvement is attributed to better financial management, increased adoption of digital finance (Nizam et al., 2025; Ratnawati et al., 2025), and more effective use of digital tools for marketing and operations (Angkhasakulkiat et al., 2025). Digital financial literacy not only directly boosts business outcomes but also acts as a mediator, amplifying the benefits of digital finance adoption and supporting sustainable growth and innovation within microenterprises (Khairani et al., 2026; Ratnawati et al., 2025). However, its effectiveness depends on the actual adoption and integration of digital technologies into business activities (Khairani et al., 2026), and structural challenges, such as limited access to technology or insufficient training, can hinder these benefits, especially in rural or marginalized communities (Khairani et al., 2026; Pattnayak & Sahoo, 2024; Xie & Chen, 2025). Despite this growing body of evidence, prior studies have

largely examined the relationship between digital financial literacy and microenterprise performance at specific points in time, and limited attention has been given to how this research field has developed. In particular, the progression from conventional financial literacy toward digital financial capabilities, and the corresponding shifts in research priorities, have not been systematically traced. Accordingly, this study aims to trace the evolution of research on digital financial literacy and its relationship with microenterprise performance through a chronological review of Scopus-indexed publications from 2013 to 2026. Such an analysis can clarify how research priorities have shifted, identify persistent inconsistencies in the evidence, and inform future research and policy on microenterprise development. The following sections review the relevant literature, describe the methodology, discuss the findings across three research phases, and conclude with the contributions, limitations, and directions for future research.

Literature Review

The evolution of digital financial literacy (DFL) has become increasingly significant in the context of microenterprise performance, especially as financial activities shift toward digital platforms (Putri et al., 2026; Yu et al., 2025). Studies have traditionally emphasized financial literacy (Appiah & Agblewornu, 2024; Dura, 2022), but recent studies highlight the necessity of integrating digital competence to navigate online financial tools and services effectively (Putri et al., 2026; Ratnawati et al., 2025; Yu et al., 2025). Systematic reviews and expert interviews reveal that DFL is now recognized as a multidimensional construct, encompassing not only basic financial knowledge but also the ability to use digital platforms for financial decision-making, risk management, and innovation (Nizam et al., 2025; Putri et al., 2026). This evolution reflects the growing complexity of the digital economy and the need for microenterprises to adapt to rapidly changing technological landscapes (Angkhasakulkiat et al., 2025; Putri et al., 2026). Much empirical evidence indicates a positive relationship between DFL and microenterprise performance (Nizam et al., 2025; Ratnawati et al., 2025). Studies across various regions, including Indonesia (Dura, 2022; Ratnawati et al., 2025), Malaysia (Nizam et al., 2025), and China (Xie & Chen, 2025), show that higher levels of digital financial literacy among entrepreneurs and small business owners lead to improved financial management, marketing efficiency, and overall business outcomes (Angkhasakulkiat et al., 2025; Rohayati et al., 2026). These effects are particularly pronounced when DFL is combined with digital finance adoption, which serves as a mediating factor that further enhances firm performance (Ratnawati et al., 2025). The adoption of digital tools enables microenterprises to access new markets, streamline operations, and optimize resource allocation (Angkhasakulkiat et al., 2025; Anute et al., 2025).

The impact of DFL extends beyond individual business outcomes to broader economic development (Al-Majali et al., 2024; Yu et al., 2025). Enhanced digital financial literacy contributes to increased financial inclusion, especially among marginalized and rural populations (Ariana et al., 2024; Khairani et al., 2026; Xie & Chen, 2025), by enabling access to digital lending platforms (Anute et al., 2025) and other financial services. This, in turn, supports sustainable economic growth and innovation, aligning with global development goals such as decent work and industry advancement (Anute et al., 2025; Xie & Chen, 2025). At the enterprise level, critical success factors for microenterprise performance in the digital era include not only DFL but also entrepreneurial ability, market orientation, and innovation (Kumar et al., 2025; Rohayati et al., 2026). Hierarchical models of success elements indicate that DFL interacts with these factors, directly and indirectly influencing business outcomes

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(Kumar et al., 2025). Financial management practices (Rohayati et al., 2026) and financial inclusion (Nizam et al., 2025) act as important moderators, shaping the extent to which these factors translate into tangible performance improvements. The interplay between these elements underscores the complexity of fostering microenterprise growth in a digitalized economy. Despite the clear benefits, challenges remain in ensuring equitable access to DFL and digital finance (Halder & Deshmukh, 2026; Putri et al., 2026). Regional and cultural disparities persist, with marginalized groups often facing barriers to digital education and technology adoption (Gurung et al., 2025; Halder & Deshmukh, 2026). Tailored digital financial education programs (Gurung et al., 2025) and ICT-driven initiatives (Halder & Deshmukh, 2026) have shown promise in bridging these gaps, but ongoing efforts are needed to address structural challenges and promote inclusive growth (Khairani et al., 2026; Xie & Chen, 2025). The literature underscores the transformative potential of digital financial literacy for microenterprise performance. However, these studies offer limited insight into how the field has evolved over time, a gap that this study addresses through a chronological review.

Methodology

Data Collection

Data collection represents a fundamental stage in chronological review research, as it establishes a systematic and transparent foundation for identifying, selecting, and analyzing relevant scholarly publications. A well-structured data collection process is essential to ensure the reliability, relevance, and comprehensiveness of the literature used to examine the historical development of a research field. In this study, titled *"Tracing the Evolution of Digital Financial Literacy and Its Impact on Microenterprise Performance,"* systematic data collection was undertaken to examine the progression of scholarly research concerning digital financial literacy and its relationship with microenterprise performance. The Scopus database was selected as the primary source of data due to its extensive coverage of academic publications across various disciplines. The systematic identification of relevant publications enables the examination of changes in research productivity, emerging research themes, and shifts in scholarly attention over time. Furthermore, the collection of publication data across different years provides an empirical foundation for identifying significant developments and classifying the literature into meaningful chronological phases. This approach enhances the transparency and reproducibility of the review while providing a structured basis for understanding the evolution of research on digital financial literacy and microenterprise performance.

The data collection process was conducted through a structured search and selection procedure, as presented in Table 1. Initially, relevant publications were identified from the Scopus database using the advanced TITLE-ABS-KEY search function, which retrieves publications based on their titles, abstracts, and keywords. The search strategy incorporated three main dimensions: digital financial literacy, microenterprises, and business performance. The first dimension included keywords such as "digital financial literacy," "financial literacy," "financial capability," "financial knowledge," and "financial skills." The second dimension focused on microenterprises and related business categories, including "microenterprise," "small business," "small enterprises," and "SME." The third dimension addressed business performance through terms such as "business performance," "productivity," "growth," "survival," "profitability," and "financial performance." Boolean operators (AND and OR), proximity operators (W/3), and wildcard symbols (*) were employed to capture variations in terminology while maintaining the relevance of the search results. Subsequently, inclusion

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criteria were applied to retain English-language publications, including journal articles, conference papers, book chapters, and review articles, within the specified research scope. Publications relating exclusively to social sciences and humanities, as well as non-English publications, were excluded. Additional restrictions using the LIMIT-TO (EXACTKEYWORD) function were applied to refine the search results to publications associated with financial literacy or digital literacy. Following the application of these search criteria, and based on the search conducted on 5th November 2026, a total of 272 publications were identified as the final dataset for chronological analysis. These publications provide the basis for examining the development of research on digital financial literacy and microenterprise performance, including the evolution of research priorities, dominant themes, and emerging directions across different periods.

Table 1: The Specification for Primary Data Searching

Keyword	Digital Financial Literacy, Microenterprise and Business Performance
Inclusion	Article, Journal, Conference Paper, Book Chapter, Review Article, English, Business Management and Accounting, Financial Literacy and Digital Literacy
Exclusion	Pure social science and humanities and other languages
Final Search String (Scopus)	TITLE-ABS-KEY (("digital financial literacy" OR "financial digital literacy" OR "digital finance literacy" OR "digital money literacy" OR "financial literacy" OR "financial capability" OR "money management" OR "financial knowledge" OR "financial skills" OR ("financial literacy" W/3 digital*) OR ((digital* OR fintech* OR "digital financial") W/3 (literacy OR capability OR knowledge OR skills))) AND (microenterprise OR microenterprise* OR "small business" OR "small enterprises" OR "micro businesses" OR SME OR "small and medium enterprise*" OR "micro firm*" OR "informal enterprise* " OR "informal microenterprise*") AND (performance OR "business performance" OR productivity OR growth OR survival OR profitability OR "financial performance" OR revenue OR sales OR employment OR outcomes OR impact* OR effect*)) AND (LIMIT-TO (EXACTKEYWORD , "Financial Literacy") OR LIMIT-TO (EXACTKEYWORD , "Digital Literacy"))
Number of Publications	272

Source: Scopus Database (2026)

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Data Clustering

Chronological clustering provides a systematic approach to examining the historical development of scholarly research by categorizing publications into distinct temporal phases based on publication year and research productivity. This approach is particularly relevant to the study titled *"Tracing the Evolution of Digital Financial Literacy and Its Impact on Microenterprise Performance,"* as it facilitates a comprehensive understanding of how scholarly interest in digital financial literacy and microenterprise performance has developed over time. Drawing on 272 publications retrieved from the Scopus database through predefined keywords and advanced search strategies, chronological clustering enables the identification of meaningful patterns in publication activity, including periods of limited research output, gradual development, and accelerated growth. By organizing publications according to observable changes in annual research productivity, this approach provides a clearer interpretation of the progression of academic contributions and highlights significant turning points in the development of the research field. Furthermore, classifying publications into distinct phases provides a structured foundation for examining potential shifts in research priorities, emerging themes, and the growing academic attention directed toward digital financial literacy and microenterprise performance. Accordingly, the chronological grouping of publications enhances the interpretation of research trends and provides a systematic basis for understanding the evolution and expansion of scholarly knowledge within the field.

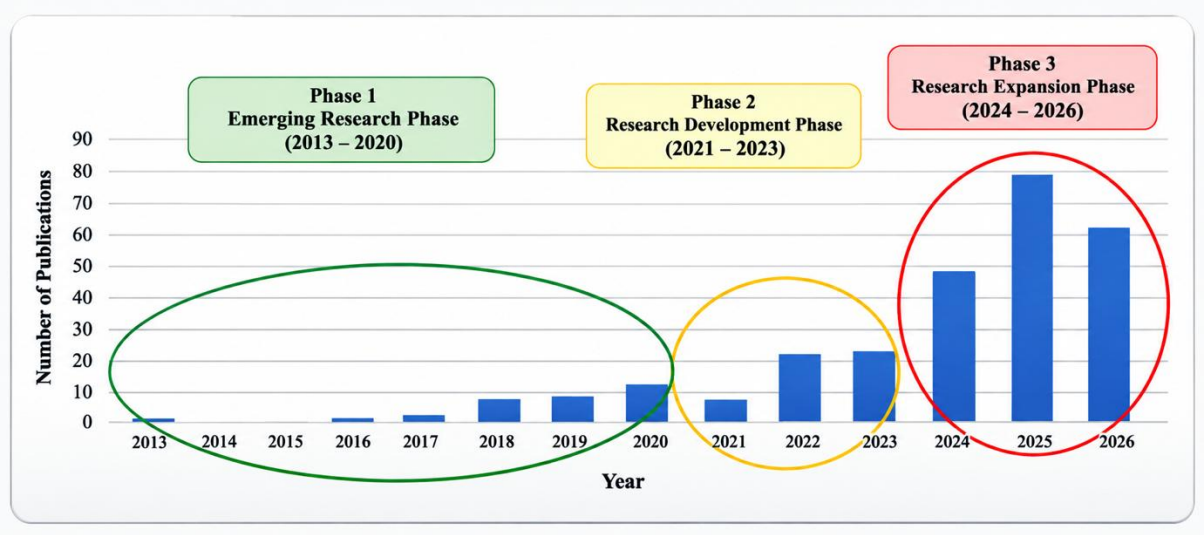

Figure 1: Clustering Documents by Year

Source: Scopus Database (2026)

Phase 1: Emerging Research Phase (2013–2020)

The Emerging Research Phase (2013–2020) represents the initial period of scholarly development concerning financial literacy and its relationship with microenterprise performance. During this phase, research productivity remained relatively limited, with 31 publications accounting for 11.40% of the total dataset. The earliest publication was recorded in 2013, followed by a period of minimal research activity with only one further publication in 2016, before output gradually increased from two articles in 2017 to seven in 2018, eight in 2019, and twelve in 2020. This gradual upward trend suggests that the research area was

beginning to attract scholarly attention, although publication activity remained comparatively low. The limited number of publications during this period indicates that the field was still emerging within the broader academic literature. Nevertheless, the increasing publication output toward the end of this phase reflects growing research interest and establishes an initial foundation for subsequent developments in the field.

Phase 2: Research Development Phase (2021–2023)

The Research Development Phase (2021–2023) reflects a period of increasing scholarly engagement and a notable transition in research productivity. A total of 52 publications were recorded during this phase, representing 19.12% of the overall dataset. Although publication output declined from twelve articles in 2020 to seven in 2021, a substantial increase was observed in 2022, with 22 publications, followed by a further increase to 23 in 2023. This pattern indicates a shift from relatively limited research activity toward more sustained academic engagement with digital financial literacy and microenterprise performance. The sharp increase in publication output between 2021 and 2022 suggests that the research field was gaining greater prominence within scholarly discourse. Overall, this phase represents an important transitional period characterized by increasing research productivity and the strengthening of academic interest, providing a foundation for the subsequent expansion of research activity.

Phase 3: Research Expansion Phase (2024–2026)

The Research Expansion Phase (2024–2026) represents the most productive period in the chronological development of research on digital financial literacy and microenterprise performance. During this phase, 189 publications were recorded, accounting for 69.49% of the total dataset. Publication output increased substantially from 23 articles in 2023 to 48 in 2024, before reaching its highest recorded level of 79 publications in 2025. This sharp increase reflects a significant expansion in scholarly attention and research productivity within the field. Although only 62 articles had been recorded for 2026 at the time of data collection, research activity remained considerably higher than in the earlier phases. The concentration of publications within this relatively short period indicates that digital financial literacy and its relationship with microenterprise performance have attracted increasing academic interest. This expansion provides opportunities for further investigation into the theoretical, empirical, and practical dimensions of the research area. However, the publication count for 2026 should be interpreted cautiously, as the year is not yet complete and additional publications may subsequently be indexed in Scopus.

Discussion

Digital financial literacy emerged as an extension of conventional financial literacy. Accordingly, the reviewed studies trace a progression from financial literacy toward digital financial capabilities across the three phases discussed below.

Phase 1: Emerging Research Phase (2013–2020)

The Emerging Research Phase (2013–2020) represents the initial development of scholarly interest in financial literacy and its relationship with microenterprise performance. During this period, research primarily focused on understanding how financial knowledge, financial

resources, and managerial capabilities contributed to business growth. Eresia-Eke and Raath (2013) found no significant relationship between financial literacy and business growth, suggesting that financial knowledge alone was insufficient to improve enterprise performance. However, Ngek (2016) reported a positive relationship between financial literacy and business performance, with financial capital availability strengthening this association. These contrasting findings indicated that the contribution of financial literacy to business growth might depend on the availability of financial resources and the ability of entrepreneurs to apply financial knowledge effectively. Subsequently, Eniola and Entebang (2017) highlighted the importance of financial knowledge, awareness, and attitudes in explaining enterprise performance, while Okello Candiya Bongomin et al. (2017) demonstrated that financial literacy strengthened the relationship between access to finance and SME growth. These findings suggested that financial literacy was gradually recognized as an important managerial capability, although its effectiveness remained influenced by financial accessibility and business conditions.

Research conducted in 2018 expanded the discussion by examining the influence of financial literacy on financial accessibility, business operations, and managerial decision-making. Agyei (2018) found that cultural beliefs influenced the acquisition and application of financial knowledge, suggesting that the relationship between financial literacy and enterprise performance varied across social contexts. Hakim et al. (2018) identified education as an important factor associated with financial literacy and reported a positive relationship between financial literacy and access to credit. Pathak and Pant (2018) revealed that women entrepreneurs possessed awareness of financial assistance programs but continued to experience difficulties in understanding banking procedures and managing financial obligations independently. Focusing on financial services, Mabula and Ping (2018a) found that financial service utilization contributed significantly to enterprise performance and mediated the relationship between financial accessibility and business outcomes. Further findings by Mabula and Ping (2018b) indicated that technological adoption and financial literacy were associated with business practices, particularly risk management, although financial literacy did not demonstrate a significant relationship with bookkeeping practices. Belle Isle et al. (2018) highlighted the relevance of financial, taxation, and computerized accounting knowledge in managing business cash flows, while Jasiewicz et al. (2018) identified differences in digital competencies and technological requirements among SMEs. These findings reflected a gradual shift from examining financial knowledge independently toward understanding its application in financial management, technological adoption, and business operations.

During 2019, scholarly attention increasingly focused on the mechanisms connecting financial literacy with enterprise growth and sustainability. Ye and Kulathunga (2019) found that financial literacy positively influenced SME sustainability, while financial accessibility and financial risk attitudes partially mediated this relationship. Similarly, Owusu et al. (2019) reported that financial literacy strengthened the association between financial resource availability and SME growth, indicating that financial knowledge could improve the effectiveness of available financial resources. Junoha et al. (2019) further highlighted the relevance of financial literacy in supporting financing decisions and identifying appropriate funding arrangements. In contrast, Ying et al. (2019) found that financial literacy contributed to resource acquisition but did not significantly moderate the relationship between intellectual capital and sustainable competitive performance. Additional findings demonstrated the importance of behavioral and demographic characteristics. Guliman and Uy (2019) reported

that financial decision-making styles influenced economic, environmental, and social sustainability, whereas financial knowledge was positively associated mainly with economic outcomes. Thabet et al. (2019) identified relationships between financial literacy, financial attitudes, financial behavior, and demographic characteristics among Malaysian SMEs. Mashizha et al. (2019) reported relatively low financial literacy among Zimbabwean SMEs, highlighting the relevance of financial conditions such as inflation and interest rates. Chumarina et al. (2019) also discussed crisis management challenges among small enterprises, although the reported evidence did not establish a direct relationship between financial literacy and business performance. Overall, research during this period demonstrated increasing recognition of financial literacy as a multidimensional capability associated with financial accessibility, managerial behavior, resource acquisition, and business sustainability.

Research published in 2020 demonstrated a broader examination of financial literacy through financial inclusion, entrepreneurial capabilities, institutional support, and business performance. Anwar et al. (2020) found that financial literacy and business experience positively influenced opportunity recognition and SME performance, with opportunity recognition partially mediating these relationships. Consistent with this, Buchdadi et al. (2020) identified positive relationships between financial literacy and enterprise performance, with financial accessibility and financial risk attitudes functioning as mediating factors. Susan (2020) also reported positive associations between financial literacy, access to finance, and MSME growth. However, Sohilauw et al. (2020) found that rational financing decisions did not significantly influence financial performance, although financial literacy was associated with financial capital and financing decisions. Rasyid et al. (2020) further demonstrated that financial inclusion fully mediated the relationship between financial literacy and capital structure decisions, suggesting that financial knowledge required access to appropriate financial services to influence financing outcomes. Hossain (2020) reported that financial resources and owner-manager financial literacy contributed positively to small firm growth, with private organizational support strengthening these relationships. Guliman (2020) identified financial sophistication as an important factor strengthening the relationship between business strategies and sustainability outcomes. Later studies in 2020 increasingly incorporated technological and accounting-related capabilities. Sariwulan et al. (2020) found that digital literacy contributed substantially to entrepreneurial performance through digital business relationships and online business activities. Kulathunga et al. (2020) demonstrated that technological and financial literacy positively influenced SME performance, with enterprise risk management practices partially mediating the relationship between financial literacy and performance. Pahlevi et al. (2020) identified weaknesses in financial literacy and financial decision-making among small enterprises, while Herawati et al. (2020) reported that financial literacy influenced accounting implementation among small and micro businesses. These findings indicated growing recognition of the relationship between financial competencies, technological capabilities, accounting practices, and enterprise performance.

In summary, the Emerging Research Phase (2013–2020) reflected a gradual development in understanding the relationship between financial literacy and microenterprise performance. Early studies focused on financial knowledge and business growth, while subsequent research expanded to financial accessibility, financial behavior, managerial capabilities, and business sustainability. Toward the end of this phase, greater attention was given to digital literacy, accounting practices, and enterprise risk management. However, findings remained mixed, suggesting that financial literacy alone was insufficient to consistently improve enterprise performance. Although digital competencies gained increasing attention, research integrating

financial and digital literacy remained limited, providing a foundation for further investigation into microenterprise performance and sustainability.

Phase 2: Research Development Phase (2021–2023)

The Research Development Phase (2021–2023) marked a period of increasing scholarly attention toward financial literacy, financial accessibility, and enterprise performance, with greater emphasis on the conditions influencing the effectiveness of financial knowledge. Fatoki (2021) found that financial literacy significantly moderated the relationship between access to finance and the performance of small enterprises in South Africa, indicating that financial knowledge strengthened the ability of entrepreneurs to benefit from available financial resources. In the Indonesian context, Wahyono and Hutahayan (2021) demonstrated that financial literacy contributed to innovation and business performance among SMEs, suggesting that financial competencies supported both financial decision-making and organizational development. Turning to the components of financial literacy, Raharja and Kostini (2021) identified knowledge of financial products and services, together with basic financial concepts, as important components of financial literacy. Anshika et al. (2021) examined the determinants of financial literacy among micro and small enterprises in India, extending attention toward differences in entrepreneurs' financial capabilities. From a broader perspective, Saksonova and Papiashvili (2021) observed a positive association between financial literacy and financial inclusion in Latvia, Estonia and Georgia, while identifying insufficient specialized business knowledge among microenterprise owners despite relatively high general education levels. The growing relevance of digital financial services was also reflected in Effendi et al. (2021) who identified financial literacy as an important factor associated with exposure to illegal financial technology services among Indonesian MSMEs. These findings indicated that financial literacy was increasingly recognized not only as a factor supporting enterprise growth but also as a capability relevant to financial accessibility, innovation, and financial risk awareness.

In 2022, research broadened the investigation of financial literacy by incorporating digital financial services, technological competencies, financial behavior, and business sustainability. Frimpong et al. (2022) found that financial literacy positively influenced access to digital finance, while digital financial accessibility improved SME performance and mediated the relationship between financial literacy and performance. This finding provided more direct evidence of the connection between financial knowledge, digital financial services, and enterprise outcomes. Hamdana et al. (2022) also examined financial and technological literacy in relation to SME sustainability, extending the discussion toward the combined relevance of financial and digital capabilities. Dura (2022) reported significant relationships between financial literacy, digital literacy, and financial performance, although digital literacy did not significantly moderate the relationship between financial literacy and financial performance. These findings suggested that financial and digital competencies could contribute to enterprise performance through different mechanisms, without necessarily producing a significant interaction effect. Suryani et al. (2022) extended the discussion toward digital literacy, e-commerce adoption, and online-to-offline business practices, while Rachapaettayakom and Jutimongkonkul (2022) examined the digital literacy requirements of small business entrepreneurs. Silva and Mamede (2022) highlighted the potential relevance of learning analytics for improving digital competencies, whereas Reuter et al. (2022) proposed digital game-based approaches to developing financial knowledge, attitudes, and behavior among enterprise managers. However, the latter contributions primarily presented exploratory or

conceptual approaches rather than direct empirical evidence of improved business performance. These studies reflected a gradual transition from conventional financial literacy toward the integration of financial knowledge, digital capabilities, and technology-enabled business practices.

Further studies conducted in 2022 strengthened the understanding of financial literacy through managerial behavior, enterprise characteristics, and financial decision-making. Diéguez-Soto et al. (2022) identified a positive relationship between chief executive officers' financial literacy and family firm growth, although the strength of this relationship differed according to the generational stage of the enterprise. Tuffour et al. (2022) reported that financial awareness, financial attitudes, and financial knowledge positively influenced both financial and non-financial performance among small enterprises. Sharma (2022) likewise identified positive relationships between financial literacy, financial accessibility, and enterprise growth. Irman (2022) also reported that financial literacy and social capital positively influenced SME performance in Indonesia, although financial inclusion did not significantly mediate the relationship between social capital and performance. Ciguino and Paul (2022) found that women entrepreneurs receiving microfinance services demonstrated higher financial literacy, which was positively associated with the financial performance of women-led microenterprises. Conversely, Agustina and Nurulistanti (2022) identified weaknesses in financial management behavior among Indonesian women entrepreneurs, particularly in understanding financial products and applying financial knowledge to business decisions. Ratnawati et al. (2022) drew attention to the relevance of financial behavior and financial competence in investment decisions. From an organizational perspective, Tian et al. (2022) and Zhang (2022) examined executive financial literacy and enterprise outcomes, with Zhang (2022) reporting that financial literacy strengthened the contribution of banking competition to export activities among small and microenterprises. Beyond financial factors, Alshebami and Murad (2022), Seraj et al. (2022), and Khan et al. (2022) focused on entrepreneurial resilience, competencies, and psychological characteristics. These studies reflected growing interest in indirect and conditional relationships, with regression analysis and structural equation modeling increasingly used to examine how financial literacy operated alongside managerial and organizational capabilities.

In 2023, research diversified further toward financial resilience, digital transformation, sustainability, and behavioral mechanisms influencing enterprise performance. Changwesha and Mutezo (2023) identified a positive relationship between financial literacy and financial accessibility, although obtaining external finance remained challenging for many SMEs. Bojuwon et al. (2023) found that financial inclusion positively influenced financial capability both directly and indirectly through financial literacy and financial self-efficacy. At the individual level, Mpaata et al. (2023) reported that financial literacy and self-control significantly influenced savings behavior among micro and small enterprise owners, with self-control moderating the relationship between financial literacy and savings. Babajide et al. (2023) demonstrated that financial literacy and financial capabilities positively influenced enterprise sustainability, although the use of savings products showed an adverse association with sustainability. Contrary to this, Budiarto et al. (2023) found that financial literacy and market orientation contributed to enterprise performance, while the direct relationship between financial literacy and sustainability was not statistically significant. Idris et al. (2023) identified positive relationships between financial literacy, intellectual capital, and business sustainability, whereas Dwiputri et al. (2023), Meldona et al. (2023) and Sulistianingsih and Santi (2023) addressed risk attitudes, innovation, and financing preferences. The growing

importance of digital capabilities was reflected in Suyanto et al. (2023), who identified opportunities and challenges associated with digital platforms and sharing-economy participation among micro and small enterprises. Pertiwi et al. (2023) and Civelek et al. (2023) further examined digital literacy, organizational capabilities, and digital transformation, while Sanusi et al. (2023) addressed business resilience and financial capabilities. Research on broader sustainability and institutional conditions was also evident in Hou and Fang (2023) and Aassouli and Ahmed (2023).

Overall, the Research Development Phase demonstrated a shift from predominantly direct relationships between financial literacy and enterprise performance toward more complex explanations involving financial inclusion, digital finance, behavioral capabilities, innovation, resilience, and sustainability. The increasing use of mediation and moderation analysis reflected greater methodological attention to the mechanisms connecting financial and technological competencies with enterprise outcomes. Nevertheless, the findings remained mixed across different enterprise contexts, suggesting that digital financial literacy had not yet been consistently established as a unified capability with a direct and uniform influence on microenterprise performance.

Phase 3: Research Expansion Phase (2024–2026)

The Research Expansion Phase (2024–2026) represents a period of substantial growth in scholarly research examining digital financial literacy and its relationship with microenterprise performance. In 2024, research increasingly shifted from conventional financial knowledge toward the integration of digital financial capabilities, financial technology, and business sustainability. Aristei et al. (2024) found that financial literacy and digital financial capabilities positively influenced sustainable financing and investment decisions among microenterprises, although the direct contribution of financial literacy was stronger than its indirect effect through digital financial capabilities. In line with this, Kurniasari and Lestari (2024) demonstrated that financial literacy positively influenced business performance, with financial technology adoption mediating this relationship. Al-shami et al. (2024) reported that financial and digital financial literacy contributed positively to financial inclusion, while social media utilization strengthened these relationships among Indonesian batik enterprises. Charfeddine et al. (2024) identified financial literacy and perceived financial accessibility as significant factors associated with credit constraints, although the effects of information and communication technology varied according to financing arrangements. Whajah and Adenutsi (2024) also reported a positive relationship between financial literacy and SME financial performance, while Mohamed et al. (2024) identified significant associations between financial literacy dimensions and financial capability. Goyal et al. (2024) found that education, business experience, gender, and business location were associated with differences in financial literacy among microentrepreneurs. However, Ekayani et al. (2024) reported that financial literacy and financial inclusion did not directly influence SME sustainability, although both contributed positively to access to capital, which subsequently influenced sustainability. Unlike Ekayani et al. (2024), Asandimitra et al. (2024) identified a direct positive relationship between financial literacy and SME performance, while Bharathithasan and Srinivasan (2024) found that technology utilization strengthened the relationship between financial literacy and microbusiness success. Akhtar et al. (2024) reported that access to digital finance mediated the relationship between financial literacy and sustainable competitive performance among agricultural SMEs. Ratnawati et al. (2024) further found that financial literacy positively influenced access to finance and financial technology adoption, with both factors mediating the

relationship between financial literacy and sustainable business performance. These findings indicated that financial literacy remained an important managerial capability, but its contribution to enterprise performance increasingly depended on technological adoption, financial accessibility, and individual business characteristics.

Further findings in 2024 demonstrated growing interest in the operational and technological mechanisms connecting financial and digital capabilities with enterprise performance. Raharjo, Afrianty, and Prakasa (2024) found that digital literacy significantly influenced digital business transformation, while social capital and entrepreneurial characteristics contributed positively to digital literacy development. However, information technology infrastructure did not significantly moderate the relationship between digital literacy and business transformation. Raharjo, Worokinasih, and Imamah (2024) found that both government policies and financial literacy positively influenced the sustainability of SMEs in East Java, Indonesia, highlighting the importance of institutional support alongside financial knowledge. Turning to innovation, Jasin et al. (2024) reported that digital literacy positively influenced knowledge management and process innovation, with knowledge management mediating the relationship between digital literacy and innovation. Toni and Theng (2024) identified positive relationships between financial literacy, financial inclusion, operational performance, and sustainable supply chain practices among Indonesian SMEs. Zunairoh and Wijaya (2024) demonstrated that financial technology, financial inclusion, and financial knowledge contributed significantly to enterprise performance, with social capital serving as a mediating factor. Kusumawati et al. (2024) found that financial knowledge, financial attitudes, and financial skills significantly influenced financial literacy, whereas peer influence was not statistically significant. Regarding digital payments, Rafiani et al. (2024) identified perceived usefulness, ease of use, revenue, and perceived risk as significant determinants of their adoption among MSMEs. Mahlatji and Mahlatji (2024) highlighted the relevance of digital literacy for business development in South African townships, although the findings were context-specific. These studies reflected a growing emphasis on digital transformation, financial technology adoption, and innovation as mechanisms through which enterprise capabilities could contribute to business performance. The increasing use of regression-based analysis and structural equation modeling also enabled more detailed examination of direct, mediating, and moderating relationships, although differences in enterprise characteristics and technological readiness continued to shape the reported findings.

Research published in 2025 demonstrated further expansion toward digital financial literacy, financial technology utilization, entrepreneurial resilience, and sustainable business performance. Mohapatra et al. (2025) identified financial knowledge as a particularly influential component of financial literacy in determining financial technology adoption among micro and small enterprises. Agrawal et al. (2025) reported increasing attention to digital financial literacy following the COVID-19 pandemic, reflecting changes in the use of digital financial services among MSMEs. Ulupui et al. (2025) found that financial technology literacy and financial literacy positively influenced enterprise performance, while competitive pressure also contributed to business outcomes. Kurniasari et al. (2025) extended the analysis by examining financial literacy, financial technology adoption, and access to finance through a serial mediation framework, highlighting the interconnected mechanisms associated with enterprise performance and sustainability. In a gender-focused study, Lestari et al. (2025) reported that financial inclusion and financial literacy contributed positively to the performance and sustainability of women-led micro and small enterprises. Munongo and Pooe (2025) identified limited financial literacy as a barrier to financial technology adoption, particularly

among enterprises operating in developing economies. Iranto et al. (2025) further demonstrated that digital literacy significantly influenced credit facility utilization and business development. Diverging from these findings, Asa et al. (2025) found that financial attitudes and awareness positively influenced SME growth, whereas financial knowledge demonstrated a small negative association. These contrasting findings suggested that the possession of financial knowledge did not consistently translate into stronger business performance without appropriate financial behavior and practical application. Additional studies broadened the discussion toward organizational and entrepreneurial capabilities. Fahdiansyah and Aisyah (2025) found that digital transformation contributed to organizational learning, while financial literacy demonstrated a stronger relationship with strategic agility. Wulandari et al. (2025) identified market orientation as a significant determinant of digital literacy and business performance, whereas Mkhize and Mugova (2025) highlighted the importance of financial education and financial capability among township enterprises. Overall, research during 2025 increasingly examined financial literacy and digital competencies as complementary business resources, with greater attention directed toward financial inclusion, technology adoption, organizational learning, and long-term enterprise sustainability.

By 2026, the literature had expanded further to examine the interaction between digital financial literacy, managerial capabilities, institutional support, financial decision-making, and enterprise resilience. Osman et al. (2026) found that financial education and bookkeeping practices positively influenced SME performance, indicating the continued relevance of practical financial management capabilities. Mkhize et al. (2026) identified financial literacy as a significant factor influencing financial management, financing, and investment decisions among informal enterprises. Mustafa and Husain (2026) further highlighted the contribution of financial literacy to investment and working capital decisions, particularly in supporting business viability. However, Pranitasari et al. (2026) found that digitalization and financial support did not directly improve the financial performance of women-owned enterprises, suggesting that access to technological and financial resources alone might be insufficient to generate favorable business outcomes. Further evidence from Mukhlis et al. (2026), Wulandari et al. (2026), and Nurlatifah et al. (2026) highlighted the relevance of digital capabilities, government support, innovation, and entrepreneurial competencies in explaining enterprise competitiveness and sustainable growth. Meanwhile, Shang et al. (2026) examined the relationship between digital literacy, innovation, and resilience among rural tourism microenterprises, while Mang'ana and Nade (2026) examined financial management practices and digital literacy among agricultural SMEs. These findings demonstrated an increasing focus on the mechanisms through which financial knowledge and digital capabilities were translated into enterprise outcomes, particularly through managerial decision-making, technology utilization, and institutional support.

The Research Expansion Phase (2024–2026) reflected substantial growth in research on digital financial literacy and microenterprise performance. Studies increasingly examined how financial knowledge, digital competencies, financial technology adoption, and financial inclusion improve enterprise outcomes. Although findings generally indicated positive relationships, some studies reported insignificant effects, suggesting that enterprise performance also depended on managerial capabilities, financial accessibility, and institutional support. Research further expanded toward business sustainability, resilience, and competitiveness, with greater emphasis on mediation and moderation relationships. Nevertheless, differences in the conceptualization and measurement of digital financial literacy

remained evident, highlighting the need for further investigation into its contribution to sustainable microenterprise performance.

Conclusion

This study examined the evolution of research on digital financial literacy and its relationship with microenterprise performance through a chronological analysis of 272 Scopus-indexed publications from 2013 to 2026. Drawing on observable patterns in annual research productivity, the literature was categorized into three distinct phases, namely the Emerging Research Phase (2013–2020), the Research Development Phase (2021–2023), and the Research Expansion Phase (2024–2026). This classification provides a systematic account of the progression of scholarly interest within the field. The analysis demonstrates a substantial growth in research output across the three phases, accompanied by a discernible shift in research emphasis. Whereas earlier studies were predominantly concerned with conventional financial literacy, financial accessibility, and business growth, subsequent scholarship increasingly examined financial inclusion, digital financial services, financial technology adoption, and business resilience. Concurrently, the literature progressed beyond the examination of direct relationships toward more complex explanatory mechanisms encompassing technological competencies, managerial capabilities, and institutional support. Nevertheless, much empirical evidence indicates a positive relationship across diverse business contexts, implying that financial knowledge and digital capabilities do not invariably translate into enhanced enterprise performance.

From a theoretical perspective, this study contributes a chronological understanding of how digital financial literacy research has evolved within the microenterprise context, highlighting the growing integration of financial knowledge and digital competencies. The findings further suggest that digital financial literacy should not be conceptualized solely as an individual capability, as its influence on enterprise performance may be contingent upon access to digital financial services, financial management practices, and organizational resources. From a practical perspective, these insights may inform policymakers, financial institutions, and enterprise development agencies in designing financial education initiatives that integrate digital skills, financial decision-making, and practical business management. Notwithstanding these contributions, several limitations should be acknowledged. The analysis relied exclusively on the Scopus database and was restricted to selected keywords, publication types, and English-language publications, which may have limited the coverage of the literature. In addition, the research phases were determined on the basis of publication years rather than formal statistical clustering techniques, and the review did not assess causal relationships. The 2026 publication count should also be interpreted with caution, as the year was incomplete at the time of data collection. Future research may therefore incorporate additional databases, employ bibliometric and thematic analysis techniques, undertake comparative analyses across regions and enterprise sectors, and empirically examine how financial management capabilities, technology adoption, government support, and institutional conditions shape the relationship between digital financial literacy and microenterprise sustainability.

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