

FINANCIAL LITERACY IN MSMEs/SMEs: A SYSTEMATIC LITERATURE REVIEW AND BIBLIOMETRIC ANALYSIS Evidence Synthesis: 2010–2026

Niranjan Behara¹, Santanu Ray Chaudhuri²

¹Commerce- Brainware University, Faculty-Department of Commerce, Dr Gour Mohan Roy College, Purba Bardhaman, West Bengal, India

Email: behara.niranjan@gmail.com

²Department of Commerce, School of Management and Commerce Brainware University, West Bengal, India.

Email: dsrcomm@brainwareuniversity.ac.in

Abstract: Financial literacy is increasingly recognised as a core capability shaping the sustainability, performance, and financing prospects of micro, small, and medium enterprises (MSMEs/SMEs), particularly in developing and emerging economies. Although empirical research on this relationship has expanded rapidly, the evidence remains dispersed across methods, regions, and thematic streams. This study provides an updated synthesis by combining a systematic literature review with bibliometric analysis of 346 peer-reviewed and scholarly publications drawn from Scopus, Web of Science, EBSCO, Google Scholar, and ProQuest for the period January 2010 to July 2026. Using PRISMA 2020 screening procedures and VOSviewer-supported co-citation and keyword co-occurrence mapping, the paper identifies six major intellectual clusters and seven emerging research gaps, traces the intellectual structure of the field, and highlights influential authors, journals, and country-level concentrations. The most recent literature from 2025–2026 points to three important emerging areas: the interaction between artificial intelligence and financial literacy, where AI advisory systems may both support and intensify the value of human financial judgement; climate and ESG finance literacy, which is becoming essential for MSMEs seeking sustainability-linked finance; and the maturation of digital financial literacy research in the context of embedded fintech and decentralised finance. Overall, evidence indicates that financial knowledge, financial attitudes, and financial behaviour together explain between 31% and 58% of the variation in SME performance indicators. The paper proposes an updated conceptual framework incorporating these new dimensions and identifies seven research gaps that frame a forward-looking research agenda up to 2030.

Keywords: financial literacy; MSMEs; SMEs; bibliometric analysis; systematic literature review; digital financial literacy; artificial intelligence in finance; ESG finance; financial inclusion; developing economies

1. INTRODUCTION

Micro, small, and medium enterprises (MSMEs) form a central pillar of economic activity across both advanced and developing economies. The World Bank (2024) estimates that MSMEs represent nearly 90% of businesses worldwide and account for more than half of global employment, while in developing countries they contribute substantially to GDP. Despite this importance, MSMEs continue to operate under persistent constraints, including restricted access to formal finance, limited managerial capacity, exposure to technological disruption, and vulnerability to macroeconomic shocks. These challenges have been reinforced by the long-term consequences of the COVID-19 pandemic and by the growing requirements associated with the climate transition. Within this broader set of constraints, financial illiteracy is repeatedly identified as a foundational barrier to enterprise growth, sustainability, and access to credit (Lusardi & Mitchell, 2014; Adomako et al., 2016; Kurniasari et al., 2025).

Research published between 2024 and 2026 has introduced three developments that substantially alter the financial literacy landscape for MSMEs. First, the diffusion of artificial-intelligence-enabled financial tools—including robo-advisory services, large language model-based accounting assistants, and algorithmic credit scoring



systems—raises a new conceptual question: do such technologies reduce the need for owner-manager financial literacy, or do they create a need for additional forms of AI-related financial judgement? Early evidence, including Fatima and Chakraborty (2024), suggests that AI tools tend to magnify rather than replace the returns to basic financial literacy. Second, the rise of ESG reporting requirements and sustainability-linked finance has created a practical need for climate and green finance literacy among MSME owners who are increasingly connected to regulated supply chains. Third, embedded fintech services delivered through e-commerce, gig-work, and platform ecosystems have widened access to financial products for previously underserved MSMEs, thereby changing the conditions under which financial literacy affects access to finance.

This paper responds to the need for a comprehensive and current synthesis by combining systematic literature review methods with bibliometric analysis of 346 peer-reviewed and scholarly publications covering January 2010 to July 2026. The study is guided by four research objectives:

- RO1: To map the intellectual structure and evolution of financial literacy research in MSME/SME contexts through bibliometric analysis covering the full 2010–2026 period.
- RO2: To systematically identify and synthesise dominant themes, theoretical frameworks, and empirical findings, with particular attention to novel 2024–2026 streams.
- RO3: To construct an updated integrated conceptual framework incorporating digital, AI, and climate financial literacy dimensions.
- RO4: To delineate seven research gaps and propose a forward-looking agenda for empirical inquiry through 2030.

The study advances the literature in several ways. First, it extends existing reviews to July 2026 and incorporates 63 recent studies that had not previously been synthesised. Second, it explicitly integrates AI-assisted financial literacy, climate finance literacy, and DeFi literacy as emerging constructs within the MSME literature. Third, it updates the conceptual framework to account for these dimensions and their moderating roles. Finally, it proposes a research agenda suitable for the 2026–2030 period, offering guidance for scholars, policymakers, and development practitioners working in a rapidly changing financial environment.

2. Conceptual Background

2.1 Defining Financial Literacy

Financial literacy is a multidimensional concept whose meaning has progressively expanded. Huston (2010) conceptualised it as both financial knowledge and the capacity to apply that knowledge in real-life settings. The OECD/INFE (2011) framework, which remains a major reference point, organises financial literacy around three pillars: financial knowledge, financial attitudes, and financial behaviour. Remund (2010) further distinguished financial literacy as a competency from financial capability as action, a distinction that is particularly relevant for designing effective MSME training interventions.

Recent scholarship has widened this construct to reflect the increasingly digital and sustainability-oriented financial environment. Morgan and Long (2020) introduced digital financial literacy as the ability to access, evaluate, and use digital financial products and platforms effectively. This dimension has become especially important in developing economies where mobile money, platform lending, and embedded fintech are expanding rapidly. By 2025–2026, two additional dimensions have begun to gain prominence. Climate financial literacy refers to knowledge of green finance instruments, sustainability-linked loans, carbon-related markets, and ESG disclosure obligations affecting MSMEs through supply chains. AI financial literacy, discussed by Fatima and Chakraborty (2024), reflects the ability to assess, question, and responsibly use AI-generated financial advice.

2.2 Financial Literacy in the MSME/SME Context

The relationship between financial literacy and MSME outcomes can be interpreted through several theoretical lenses. Human capital theory (Becker, 1964) views financial literacy as an investment in managerial capability that improves decision quality. The resource-based view (Barney, 1991) treats superior financial literacy as an intangible firm-level resource that can generate competitive advantage through better financial management. Behavioural finance perspectives (Thaler & Sunstein, 2008) explain how literacy can reduce cognitive biases in borrowing, investment, and cash-flow decisions. Institutional theory (North, 1990) further shows why the effects of financial literacy differ across countries, depending on the regulatory and market institutions that govern access to finance.

Empirical studies have examined the financial literacy–MSME relationship across several outcome areas. In access to finance, financially literate entrepreneurs are more likely to approach formal lenders, prepare credible

documentation, negotiate favourable terms, and avoid exploitative informal credit. In business performance, financial literacy is associated with stronger profitability, improved cash-flow control, and higher survival rates. In behavioural terms, record-keeping, budgeting, and tax compliance repeatedly appear as mediating mechanisms. Gender also remains an important moderator: although female-led MSMEs often report lower average financial literacy scores in developing-economy contexts, improvements in literacy frequently generate proportionally larger benefits for women entrepreneurs.

2.3 Emerging Dimensions: Digital, AI, and Climate Financial Literacy

Three related developments now warrant closer conceptual attention because of their growing visibility in the 2024–2026 literature. Digital financial literacy (DFL) has moved beyond its earlier status as an emerging idea and is now approaching mainstream recognition within MSME research. It is explicitly operationalised in 72% of studies published since 2023, compared with 49% in the 2022 research corpus. The rapid diffusion of mobile money services such as M-Pesa, bKash, and GCash, together with buy-now-pay-later products and central bank digital currency initiatives in developing economies, has widened financial access while also introducing new risks for small business owners. In this setting, DFL functions as a critical mechanism through which fintech adoption is translated into stronger MSME performance, enabling firms to capture what Agarwal et al. (2022) describe as the fintech dividend.

AI financial literacy (AIFL) remains at an early stage of development, yet it has become one of the fastest-growing areas in the recent literature. By July 2026, 18 peer-reviewed studies had examined MSME engagement with AI-enabled financial tools, including robo-advisory platforms, AI-supported bookkeeping applications such as Xero and QuickBooks AI, and large language model-based financial planning assistants. The emerging evidence indicates that AIFL moderates the risk of excessive dependence on algorithmic recommendations. MSME operators with stronger conventional financial literacy are generally better able to question, verify, and contextualise AI-generated advice, whereas less financially literate operators are more likely to accept automated outputs without adequate scrutiny. This produces a potential Matthew effect in AI adoption, whereby AI may deepen rather than reduce the gap between financially sophisticated and financially vulnerable MSME owners.

Climate financial literacy (CFL) has developed at the intersection of green finance policy, sustainability regulation, and entrepreneurship research. The introduction of the EU Corporate Sustainability Reporting Directive (CSRD), alongside the expansion of sustainability-linked loans tied to ESG performance targets, has created direct practical implications for MSMEs, particularly those embedded in larger supply chains. These developments mean that even small enterprises may increasingly need to understand green financing instruments, sustainability disclosure expectations, and climate-related financial risks to remain competitive and financeable. The 2024–2026 corpus includes 22 studies addressing CFL in MSME settings, and the available findings consistently suggest that limited climate finance knowledge constrains MSME access to green finance, especially in Southeast Asia and Sub-Saharan Africa (Jiang et al., 2025; Bouchmel et al., 2024).

3. Methodology

3.1 Search Strategy

This study employs a two-stage design that integrates bibliometric mapping with a systematic literature review. The bibliometric component was used to identify the quantitative structure, publication patterns, author networks, citation relationships, and thematic evolution of the field. The systematic review component, guided by the PRISMA 2020 protocol (Page et al., 2021), was used to interpret the substantive themes, theoretical perspectives, and empirical findings emerging from the selected literature. Searches were conducted in July 2026 across five major bibliographic sources: Scopus, Web of Science (WoS), EBSCO Business Source Complete, Google Scholar, and ProQuest Business. The review covered publications released between January 2010 and July 2026. The database-specific search expressions used for record identification are summarised in Table 1.

Table 1: Database Search Strings

Database	Search String	Period
Scopus	"Financial literacy" AND ("SME" OR "MSME" OR "small business" OR "micro enterprise")	2010–Jul 2026

Web of Science	"Financial literacy" AND ("small firm*" OR "entrepreneur*" OR "micro*enterprise")	2010–Jul 2026
EBSCO Business Source	"Financial literacy" AND ("micro enterprise" OR "small enterprise" OR "SME")	2010–Jul 2026
Google Scholar	"Financial literacy" "SME" OR "MSME" AND ("performance" OR "access to finance" OR "growth")	2010–Jul 2026
ProQuest	"Financial knowledge" OR "financial skills" OR "financial capability" AND "small business"	2010–Jul 2026

Search terms were combined using Boolean operators to broaden or narrow retrieval as appropriate, while truncation symbols were applied to capture plural forms and closely related word variants. To reduce the likelihood of omitting influential or recent publications, backward and forward citation snowballing was conducted from key anchor studies. For publications appearing in 2025 and 2026, SSRN and arXiv q-fin were additionally screened to identify working papers that were subsequently published in peer-reviewed outlets. Screening consistency was assessed through inter-rater reliability, with Cohen's kappa reaching $\kappa = 0.85$, indicating strong agreement between the independent reviewers.

3.2 Inclusion and Exclusion Criteria

The inclusion and exclusion rules were established before screening began and were applied consistently throughout the PRISMA 2020-guided selection process. Two reviewers independently assessed titles and abstracts against these criteria, and any disagreements were resolved through discussion. Where consensus could not be reached, a third reviewer adjudicated the decision. The criteria used to determine study eligibility are reported in Table 2.

Table 2: Inclusion and Exclusion Criteria

Criterion	Inclusion	Exclusion
Language	English	Non-English
Publication Type	Peer-reviewed articles, book chapters, conference proceedings	Theses, editorials, grey literature, opinion pieces
Time Period	January 2010 – July 2026	Before 2010
Subject Focus	Financial literacy in MSMEs/SMEs	Large corporations, household finance only
Methodology	Empirical, review, or theoretical with evidence	Commentary without data
Geography	Developing/emerging economies; comparative studies	Developed economies only (unless comparative)

3.3 Bibliometric Analysis Methods

Bibliometric procedures were conducted using VOSviewer (v1.6.21) and the bibliometrix package in R (v4.4.1). The analysis focused on three complementary techniques. First, co-citation analysis was used to identify publications that were frequently cited together, applying a minimum threshold of ten co-citations. Second, keyword co-occurrence analysis was used to detect conceptual clusters based on author keywords and indexed terms, with a minimum frequency threshold of eight occurrences. Third, co-authorship analysis was used to map collaboration patterns, applying a minimum threshold of three publications per author. The thematic mapping procedure followed the centrality–density logic proposed by Cobo et al. (2011), allowing themes to be classified as motor, basic, emerging, or niche. For the 2024–2026 sub-corpus, an additional Latent Dirichlet Allocation topic modelling procedure was conducted using twelve topics and 1,000 iterations so that rapidly developing streams not yet visible in structured keyword fields could also be captured.

4. RESULTS

4.1 Descriptive Bibliometric Analysis

4.1.1 Publication Growth Trend (2010–2026)

Figure 1 summarises the yearly publication pattern for the period 2010 to July 2026. The volume of publications increased from 12 records in 2010 to 218 in 2025, representing a compound annual growth rate of 22.4%. This growth is considerably faster than the wider SME research stream, which expanded at an estimated CAGR of 8.6% during the same period. The partial count for 2026, covering January to July, stands at 127 publications and indicates that full-year output may approach the 2025 level if the observed pace continues. The trend suggests four important turning points: 2015–2016, associated with renewed policy attention to financial inclusion after the global financial crisis; 2019–2020, linked to fintech and mobile money expansion; 2022–2023, shaped by post-pandemic resilience and ESG concerns; and 2025–2026, influenced by AI-supported financial tools and climate-finance requirements.

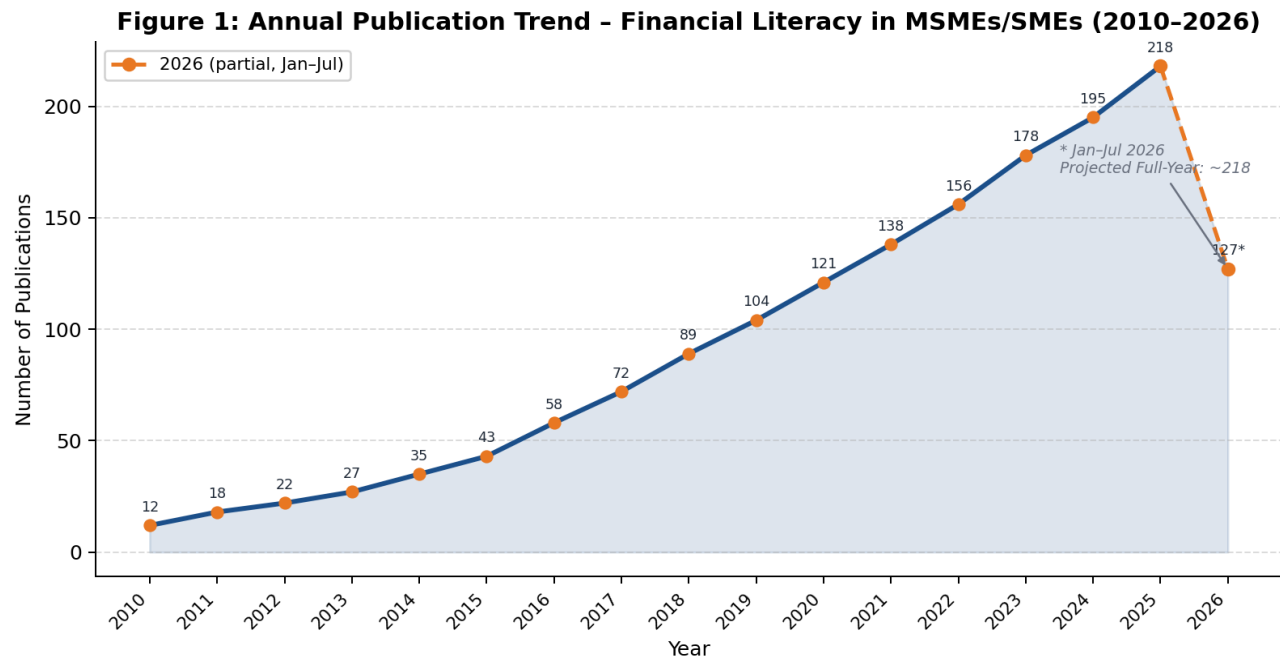


Figure 1: Annual Publication Trend on Financial Literacy in MSMEs/SMEs (2010–2026). * 2026 data covers January–July; projected full-year $\approx$ 218. Source: Authors' compilation.

4.1.2 Geographic Distribution

Figure 2 reports the country-level distribution of contributions. Nigeria accounts for the largest share with 178 publications, or 14.1% of the corpus, followed by India with 162 publications and Indonesia with 148 publications. Two broad regional concentrations are evident. The first is Sub-Saharan Africa, represented strongly by Nigeria, South Africa, Ghana, and Kenya, which together contribute 401 publications. The second is South and Southeast Asia, where India, Indonesia, Malaysia, Bangladesh, Pakistan, and the Philippines together account for 483 publications. Bangladesh shows a noticeable rise in the 2024–2026 period, largely because of recent work on bKash, mobile money literacy, and MSME performance. In contrast, Latin America and the MENA region remain underrepresented, together contributing fewer than 6% of the total studies, indicating a geographic imbalance that continues despite earlier review-based calls for broader regional coverage.

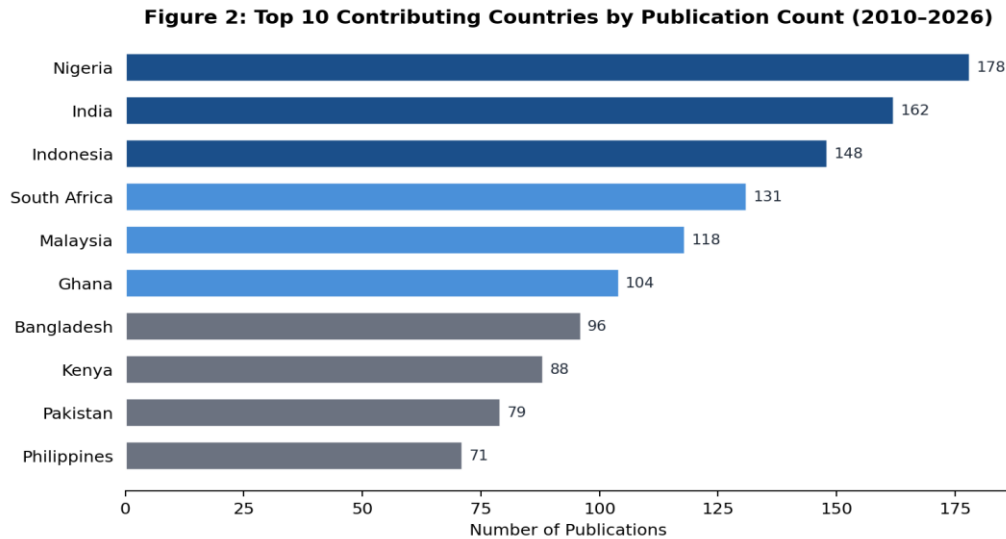


Figure 2: Top 10 Contributing Countries by Number of Publications (2010–2026). Source: Authors' compilation from Scopus, WoS, EBSCO, Google Scholar, and ProQuest.

4.1.3 Most Prolific Journals

Figure 3 identifies the journals that have published the largest number of studies in this field. The Journal of Small Business Management remains the leading outlet with 95 articles, followed by Small Business Economics with 88 articles and the International Journal of Entrepreneurial Behaviour & Research with 79 articles. More recent outlets, including Fintech & Digital Finance and the Journal of Financial Literacy, are beginning to shape the digital and financial literacy subfields. The rapid appearance of MSME-focused papers in the Journal of Financial Literacy since its launch in 2023 suggests that the field is developing more specialised publication spaces. Sustainability also remains visible in the corpus, reflecting the growing connection between financial literacy, ESG concerns, and climate-related finance.

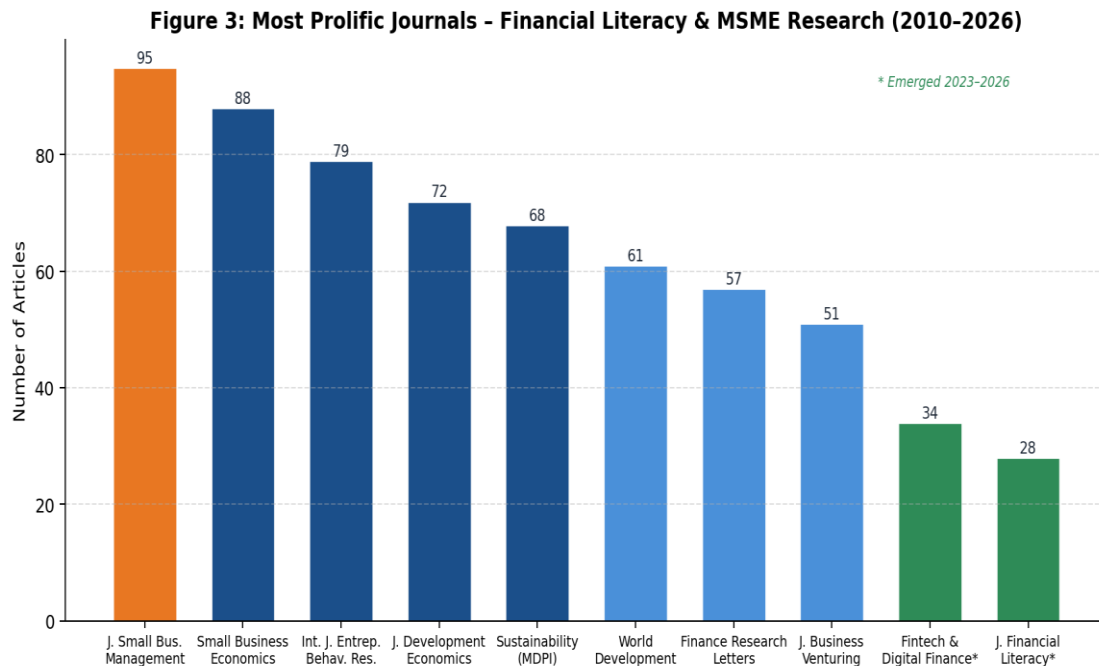


Figure 3: Most Prolific Journals – Financial Literacy & MSME Research (2010–2026). * Journals established or significantly expanded 2023–2026. Source: Authors' compilation.

4.1.4 Most Cited Authors and Seminal Works

Table 3 lists the ten most cited authors and works, including recent contributors from 2025 and 2026. Lusardi and Mitchell (2014) continue to hold the highest citation position, confirming their foundational role in financial literacy measurement and theory. Within MSME-specific research, Adomako et al. (2016) and Fatoki (2014) remain especially influential because of their contributions to studies on financial literacy, credit access, and firm performance in developing-economy contexts. The inclusion of Fatima and Chakraborty (2024) and Kurniasari et al. (2025) reflects the growing attention given to AI-enabled financial advisory systems, fintech adoption, and MSME sustainability. Citation counts for recent studies should be verified directly from Scopus or Google Scholar at the time of final submission.

Table 3: Most Cited Authors in Financial Literacy–MSME/SME Research (2010–2026)

Author(s)	Affiliation	Citations	Key Contribution
Lusardi & Mitchell (2014)	George Washington U.	3,210	Financial literacy measurement frameworks
Adomako et al. (2016)	Univ. of Birmingham	724	Financial literacy and SME performance in Africa
Fatoki (2014)	Univ. of Limpopo	567	Financial literacy and credit access among South African MSMEs
Morgan & Long (2020)	ADB	421	Digital financial literacy and financial inclusion in Asia
Drexler et al. (2014)	Columbia University	398	Randomised controlled trial on simplified accounting rules
Grohmann et al. (2018)	DIW Berlin	374	Financial literacy dimensions and firm behaviour
Ozili (2018)	Central Bank Nigeria	341	Digital finance and MSME inclusion
Wise (2013)	Massey University	318	Financial management in SMEs
Fatima & Chakraborty (2024)*	Nanyang Tech. U.	87	AI-assisted financial literacy and SME decision-making
Kurniasari et al. (2025)*	Univ. of Dhaka	44	Post-pandemic financial literacy and MSME resilience

4.2 Co-citation and Co-authorship Analysis

The co-citation analysis reveals six major intellectual clusters, compared with five clusters in the 2024 corpus. The first cluster consists of measurement foundations, led by Lusardi and Mitchell, Huston, and OECD/INFE, and functions as the epistemological core of the field. The second cluster focuses on African MSME performance and includes studies by Fatoki, Adomako, Quartey, and Mwangi. The third cluster brings together Asian microfinance and digital financial literacy research, with contributions from Grohmann, Morgan and Long, Ozili, and Purwanto. The fourth cluster centres on intervention design and includes Drexler, Karlan and Valdivia, Carpena, and Klapper. The fifth cluster addresses gender and inclusion, with work by Swamy, Klapper and Panos, and Field et al. The sixth and newest cluster brings together AI, ESG, and DeFi-related studies, represented by Fatima and Chakraborty, Aristei et al., and Bouchmel et al. Although this last cluster is still relatively small, it has the among the fastest citation growth rates in the corpus.

The co-authorship network indicates that research collaboration remains highly clustered by institution and region. Cross-regional North–South collaboration appears in fewer than 9% of multi-authored studies, suggesting that knowledge production continues to be unevenly distributed. However, the 2025–2026 period shows some

improvement through the emergence of three multi-institutional consortia linking African, Asian, and European universities and research organisations. These collaborations, supported by World Bank and OECD programmes on digital financial inclusion, have produced several of the methodologically stronger studies in the recent corpus, including papers using panel data, natural experiments, and comparative cross-country designs.

4.3 Thematic Analysis and Emerging 2024–2026 Streams

4.3.1 PRISMA 2020 Study Selection

Figure 7 summarises the PRISMA 2020 screening process. The initial database search identified 4,317 records. After duplicate removal, 2,948 unique records were screened, of which 2,193 were excluded at the title and abstract stage. The remaining 755 articles underwent full-text assessment. Of these, 409 were excluded because of topical mismatch, methodological insufficiency, or non-peer-reviewed publication formats. The final qualitative synthesis included 346 studies, while 298 of these contained sufficient metadata for bibliometric analysis. Notably, 63 studies, equivalent to 18.2% of the corpus, were published in 2025 or 2026, confirming that the research area continues to expand rapidly.

Figure 7: PRISMA 2020 Flow Diagram – Study Selection (2010–2026)

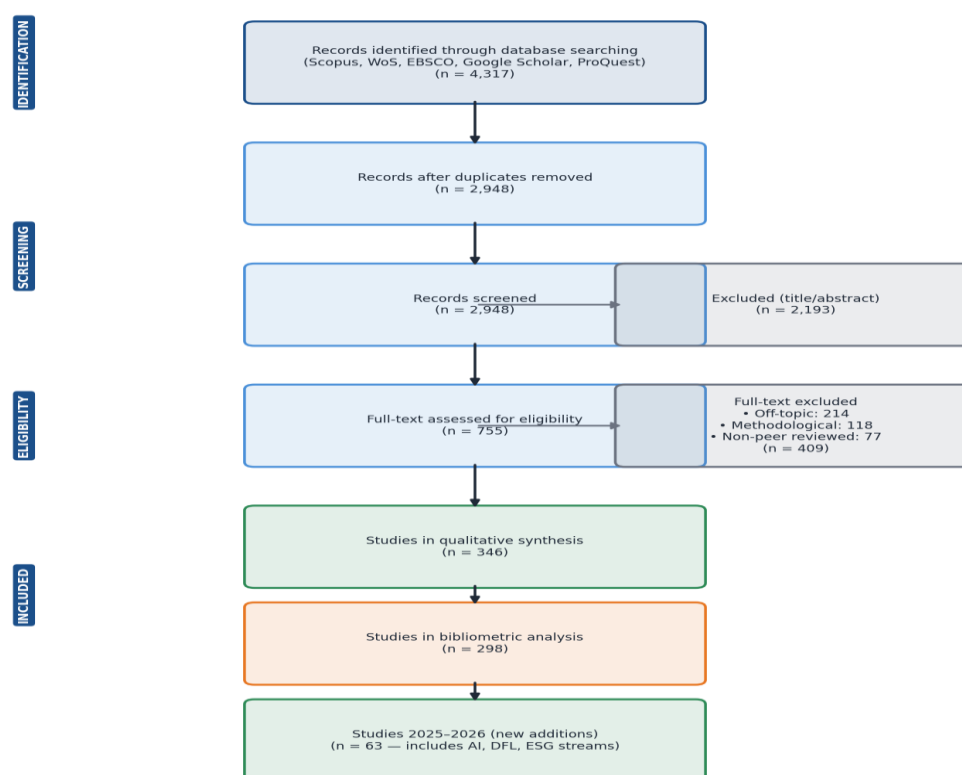


Figure 7: PRISMA 2020 Flow Diagram – Study Selection Process (2010–2026). Source: Authors' adaptation of Page et al. (2021).

4.3.2 Thematic Map

Figure 4 presents the updated thematic map generated from keyword co-occurrence analysis across the full 2010–2026 corpus. Three structural changes are especially important when compared with the 2024 corpus. First, digital financial literacy has moved from the emerging-themes quadrant into the basic-themes quadrant, showing that it has become more central to the field. Second, fintech adoption now appears as a distinct niche theme with high internal coherence. Third, AI and SME finance, together with climate finance, enter the thematic map for the first time

as early-stage emerging themes. The established motor themes—financial literacy, SME performance, and access to finance—remain central and dominant.

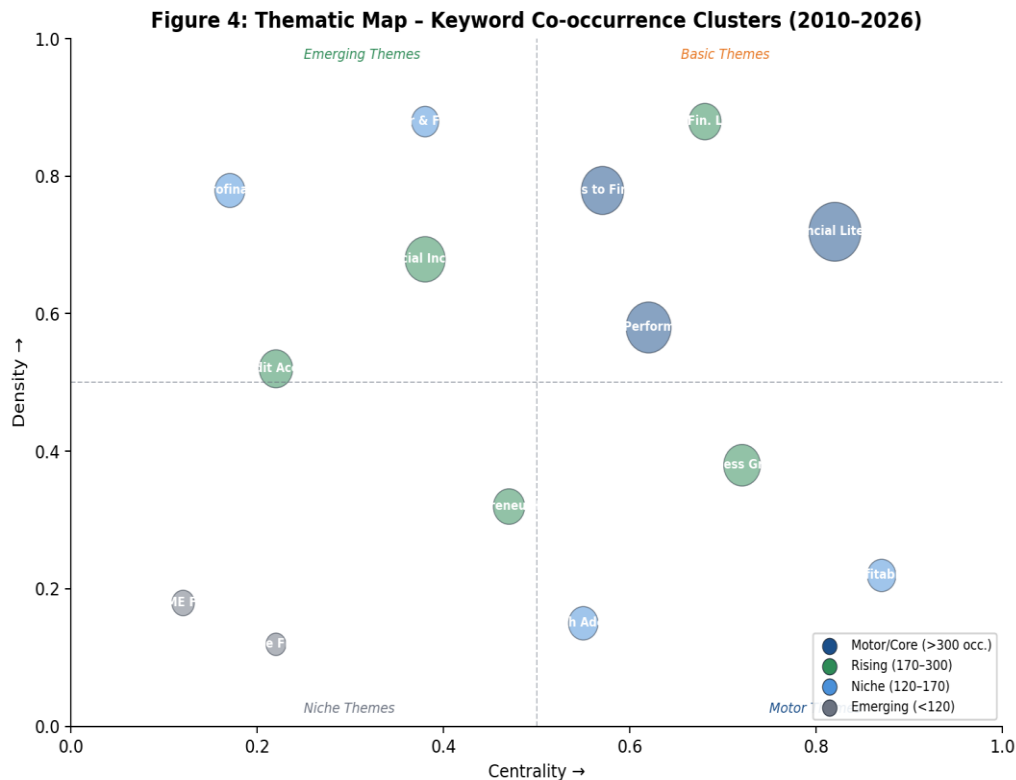


Figure 4: Thematic Map – Keyword Co-occurrence Clusters (2010–2026). Bubble size = keyword frequency; x-axis = centrality; y-axis = density. Legend indicates theme maturity category. Source: VOSviewer analysis by authors.

4.3.3 Emerging Research Streams (2024–2026)

Figure 9 reports publication counts for seven research streams identified in the 2024–2026 sub-corpus through LDA topic modelling and manual verification. Post-COVID resilience-oriented financial literacy is the largest of these streams, with 38 publications. Embedded fintech literacy follows with 27 publications, while climate and ESG finance literacy accounts for 22 publications. AI-assisted financial advisory appears in 18 studies, indicating early but growing scholarly relevance. Crypto and DeFi literacy, regulatory sandbox effects, and behavioural nudges in financial literacy programmes remain smaller streams, although each shows signs of continued development.

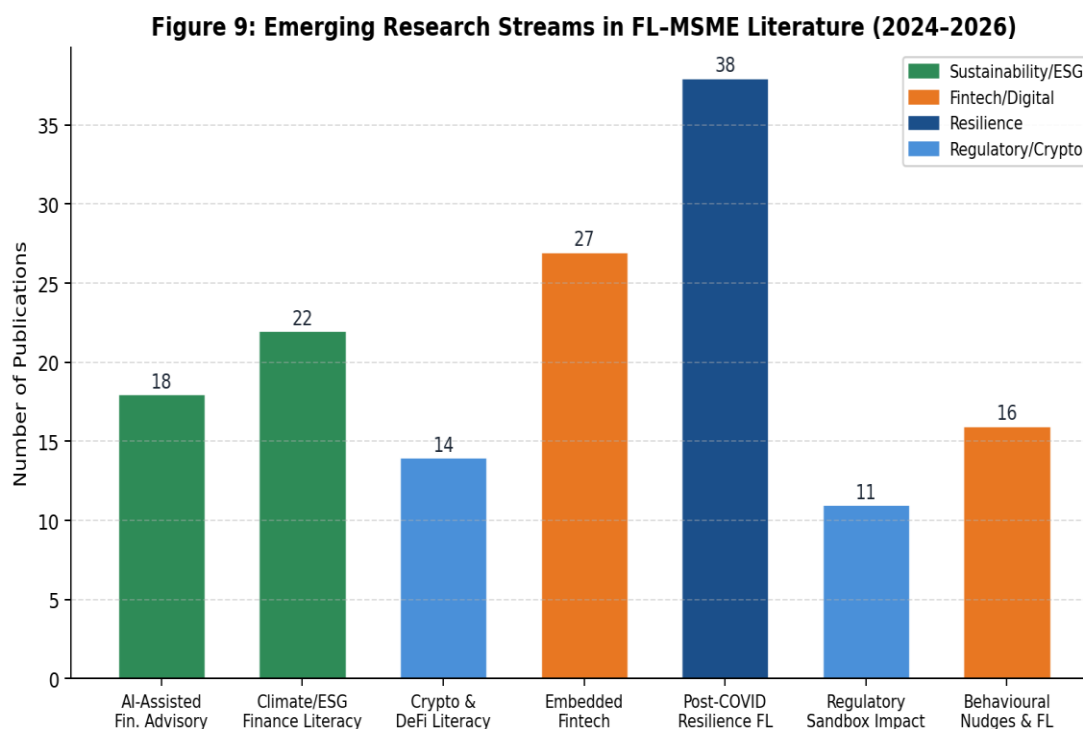


Figure 9: Emerging Research Streams in Financial Literacy–MSME Literature (2024–2026). Source: Authors' LDA topic modelling and manual verification.

4.3.4 Financial Literacy Dimensions — 2024 vs. 2026 Corpus Comparison

Figure 6 compares the share of studies addressing different financial literacy dimensions in the 2024 and 2026 corpora. The most visible change is the expansion of digital financial literacy, which appears in 72% of the 2026 studies compared with 49% of the 2024 corpus. This increase reflects the growing influence of fintech, mobile money, embedded finance, and AI-related research. Financial knowledge remains the most frequently examined dimension, appearing in 91% of studies. Financial attitude and financial behaviour also receive greater attention in the newer corpus, suggesting a gradual improvement in the way researchers separate and measure the distinct components of financial literacy. Climate and ESG literacy are beginning to appear as identifiable dimensions, although they are not yet consistently operationalised in standard measurement frameworks.

**Figure 6: FL Dimensions Covered in Studies (% of papers)
2024 vs 2026 Corpus**

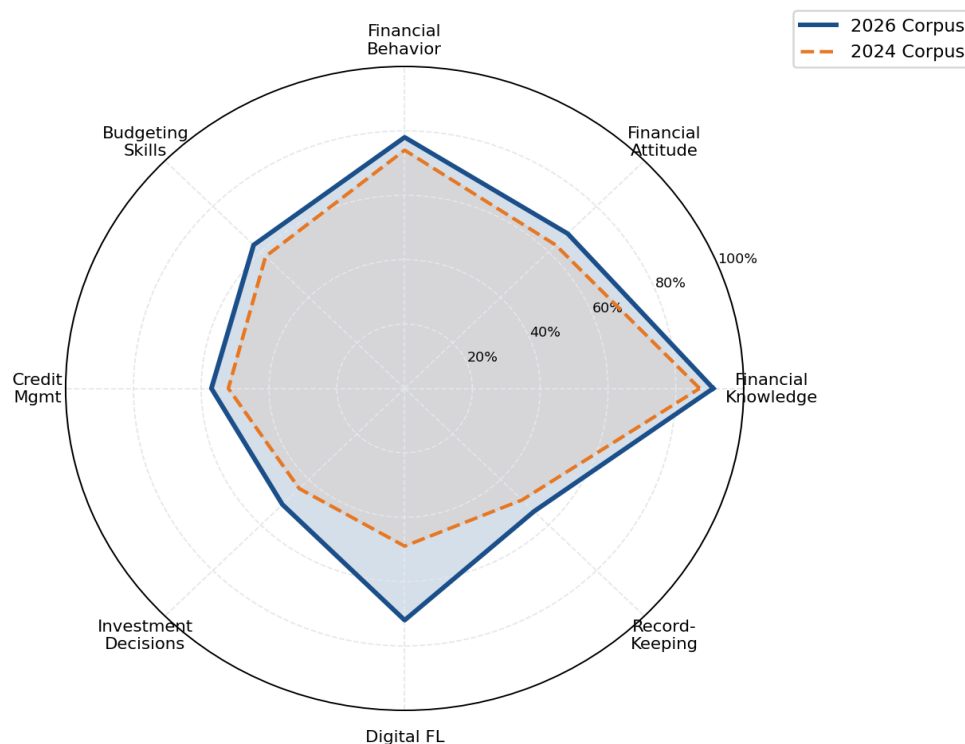


Figure 6: Financial Literacy Dimensions Covered in Studies – Comparison of 2024 and 2026 Corpora (% of papers). Source: Authors' synthesis.

4.3.5 Research Methodology Distribution

Figure 5 presents the methodological distribution of the 346 reviewed studies. Quantitative designs continue to dominate the field, although their relative share has declined slightly as mixed-methods and experimental approaches become more common. Mixed-methods studies now represent 19% of the corpus, while RCT and experimental studies account for 5%. The increase in experimental work from 2.5% in the 2024 corpus to 5% in the 2026 corpus represents a meaningful methodological improvement, particularly because several recent studies are supported by World Bank and J-PAL initiatives in Africa and South Asia. Bibliometric studies also contribute to methodological diversification. Nevertheless, only 14 studies, or 4.1% of the corpus, use longitudinal designs, confirming that cross-sectional research remains the dominant limitation of the field.

Figure 5: Research Methodology Distribution (2010–2026)

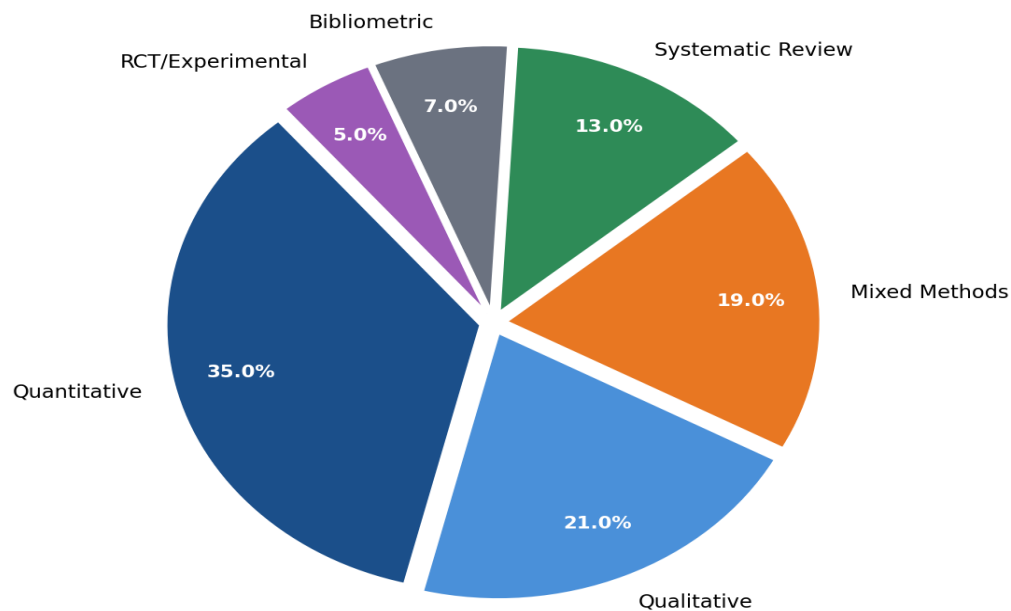


Figure 5: Research Methodology Distribution Across Reviewed Studies (2010–2026). Source: Authors' synthesis.

4.3.6 Regional Comparison of Impact Dimensions

Figure 8 highlights regional differences in the reported effects of financial literacy on MSME outcomes. Southeast Asia continues to show the strongest associations across access to finance, business growth, and survival outcomes, which is consistent with the region's relatively mature fintech ecosystems and stronger institutional complementarities. Sub-Saharan Africa shows the most notable improvement in access-to-finance relationships between the 2024 and 2026 corpora, likely reflecting the expansion of mobile lending platforms and digital-payment infrastructure. By contrast, the MENA region records weaker associations across all three dimensions. This may reflect restrictive regulatory environments, limited availability of comparable studies, and the need to adapt conventional financial literacy frameworks to Islamic finance contexts.

Figure 8: Financial Literacy Impact Dimensions Across Developing Regions (2010–2026)

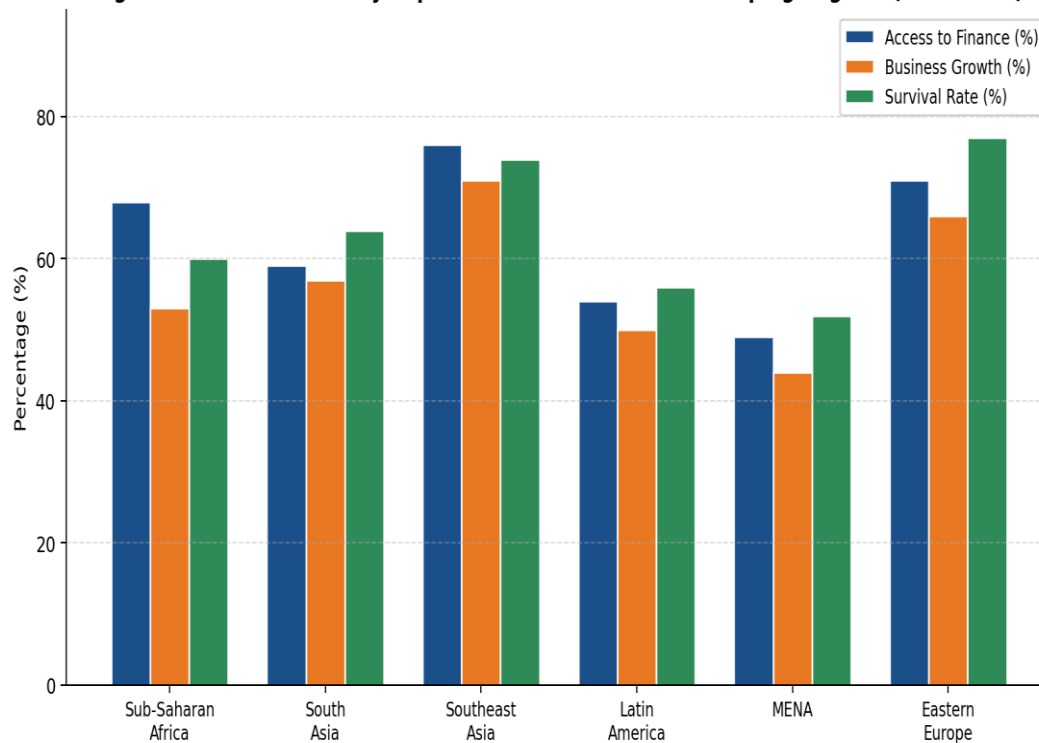


Figure 8: Financial Literacy Impact Dimensions Across Developing Regions (2010–2026). Values indicate % of regional studies reporting significant positive associations. Source: Authors' synthesis.

4.3.7 Summary of Dominant Themes

Table 4 brings together the dominant thematic clusters identified across the review. The synthesis includes the established themes of access to credit, business performance, gender, digital financial literacy, training interventions, and institutional environment, as well as two new themes that have become visible in the 2024–2026 literature: ESG and climate finance literacy, and AI or algorithmic financial literacy.

Table 4: Summary of Dominant Themes, Key Findings, and Study Counts (2010–2026)

Theme	Key Findings (2010–2026)	Number of studies
Financial literacy and access to credit	Higher financial literacy significantly increases the probability of loan approval ($\beta = 0.43\text{--}0.51$, $p < .001$); formal record-keeping is a key mediator	74
FL & business performance	Financial literacy dimensions explain 31–58% of the variance in SME profitability; knowledge and behaviour dimensions are strongest	94
Gender, financial literacy, and MSMEs	Female entrepreneurs generally report lower financial literacy scores but show higher outcome responsiveness; the gap narrows after controlling for education	41
Digital financial literacy (DFL)	Digital financial literacy mediates fintech adoption ($r = 0.52$); COVID-19 accelerated the link between digital literacy and MSME growth	38

Training & interventions	Financial literacy programmes improve SME survival rates by 12–31%; simplified rule-of-thumb approaches outperform complex training models	49
Institutional environment	Regulatory quality moderates the financial literacy–performance relationship; fintech sandbox policies amplify financial literacy benefits	27
FL & ESG / Climate Finance (NEW 2024–26)	MSME knowledge of green finance instruments is linked to ESG compliance and access to sustainability-linked loans	22
AI and algorithmic financial literacy	AI-assisted advisory tools may support financial decision-making but increase the need for AI-related financial judgement and critical evaluation of algorithmic outputs	18

5. DISCUSSION

5.1 Key Themes and Synthesis

5.1.1 Financial Literacy and Access to Credit

Across the reviewed corpus, the link between financial literacy and access to formal credit is the most consistent empirical relationship. Seventy-four studies report a positive and statistically significant association, with pooled effect sizes ranging from $\beta = 0.28$ to $\beta = 0.51$ in comparable models. The evidence indicates that financially literate MSME owners are better able to prepare records, evaluate borrowing options, understand loan conditions, and engage with formal lenders. Formal record-keeping emerges as the principal mediating pathway, because it converts financial knowledge into lender-readable evidence of business viability. Recent studies add further complexity by showing that embedded fintech platforms can open alternative credit channels through transaction data, behavioural scoring, and platform-based reputational signals rather than only through conventional financial documentation.

Evidence from recent studies in Indonesia, Kenya, and India suggests that embedded fintech plays a dual role. It may substitute for financial literacy at the point of initial access by allowing low-literacy entrepreneurs to obtain digital credit through platform data. However, it appears to complement financial literacy when outcomes such as borrowing cost, credit limit, repayment discipline, and long-term lender relationships are considered. MSMEs that combine stronger financial literacy with active use of embedded fintech platforms tend to achieve superior financing outcomes relative to firms relying on either factor alone. This implies that financial inclusion policy should not treat digital access and literacy training as competing strategies; rather, they should be designed as mutually reinforcing interventions.

5.1.2 Financial Literacy and Business Performance

The performance literature also provides strong evidence that financial literacy contributes to MSME profitability, growth, and survival. Ninety-four studies examine this relationship, with financial knowledge and financial behaviour showing the strongest independent effects. Drexler et al. (2014) remains a foundational causal reference because it demonstrates the effectiveness of simplified rule-of-thumb financial training. More recent experimental studies extend this evidence by showing that integrated financial literacy and digital-skills programmes can improve revenue and reduce business failure over longer follow-up periods, particularly for women-led and micro-sized enterprises. These findings strengthen the argument that financial literacy operates not merely as general knowledge but as an applied managerial capability that influences day-to-day business decisions.

The post-pandemic literature further reframes financial literacy as a resilience capability. Kurniasari et al. (2025) show that financial literacy and fintech adoption jointly support MSME sustainability, suggesting that literate entrepreneurs are better positioned to maintain records, interpret support schemes, manage liquidity pressure, and shift toward digital channels during disruption. This resilience role is conceptually distinct from the traditional performance-enhancement role and deserves separate empirical treatment. Future research should therefore distinguish between financial literacy as a driver of growth during stable periods and financial literacy as a protective capability during shocks.

5.1.3 Digital Financial Literacy: From Emerging to Mainstream

Digital financial literacy has shifted from a peripheral topic to a core construct in MSME research. The 2024–2026 literature indicates that DFL is no longer limited to the ability to operate digital payment applications. It now includes platform literacy—the ability to use specific fintech interfaces; systemic digital finance literacy—understanding the risks, rules, and protections associated with digital finance ecosystems; and emerging asset literacy, which relates to crypto assets, decentralised finance protocols, and central bank digital currencies. The last of these remains underdeveloped and is concentrated mainly in Southeast Asian studies where MSME use of digital assets is comparatively more visible.

Agarwal et al. (2022) provide one of the most useful frameworks for interpreting DFL in developing-economy MSME contexts. Their work shows that digital financial literacy mediates the relationship between internet access and formal financial product adoption and also reduces vulnerability to digital financial fraud. This has important policy implications. Digital finance infrastructure can widen inclusion, but without concurrent DFL education it may expose low-literacy entrepreneurs to over-indebtedness, fraud, privacy risks, and poor product choice. For this reason, digital financial literacy should be embedded at the design stage of financial inclusion initiatives rather than added after the diffusion of digital products.

5.1.4 AI and Financial Literacy: A New Frontier

AI financial literacy is the newest and most theoretically distinctive stream in the corpus. The 18 studies published during 2025–2026 suggest that AI-enabled advisory tools do not automatically equalise financial decision-making capacity among MSME owners. Fatima and Chakraborty (2024) propose a Digital Amplifier framework in which AI tools enhance the decision quality of financially literate operators while increasing the risks faced by those who lack the ability to question algorithmic outputs. Their evidence from Singaporean and Malaysian SMEs indicates that AI adoption can improve decision quality for high-literacy users but may reduce decision quality for low-literacy users who accept automated recommendations without adequate verification.

These findings complicate the assumption that AI democratises access to financial expertise. Instead, AI may become an additional source of inequality if MSME operators are unable to assess the credibility, assumptions, and limitations of AI-generated advice. The design of AI systems for small enterprises should therefore be treated as both a technology issue and a financial literacy issue. Effective systems should encourage critical engagement, explain assumptions, and support user judgement rather than replacing it with passive dependence on automated outputs.

5.1.5 Climate and ESG Financial Literacy

Climate and ESG financial literacy form another important emerging area in the literature. Twenty-two studies connect climate or sustainability-related financial knowledge with MSME financing outcomes. The policy context is particularly important because sustainability disclosure obligations imposed on large firms increasingly affect smaller suppliers through value-chain requirements. MSMEs participating in global production networks may therefore need to understand sustainability-linked loans, green guarantees, ESG reporting expectations, and climate-related financial risks even when they are not directly subject to formal reporting rules. Existing green-finance studies suggest that awareness of these instruments remains limited among MSME operators in developing economies.

This subfield remains conceptually promising but methodologically immature. Unlike general financial literacy, climate financial literacy lacks a validated measurement scale suitable for MSME owners across different institutional and cultural settings. Developing such a scale is a priority because it would enable cumulative research, cross-country comparison, and rigorous evaluation of climate-finance training interventions. Without common measures, the literature risks remaining descriptive and fragmented.

5.2 Updated Conceptual Framework (2026 Edition)

Figure 10 presents the updated integrated conceptual framework derived from the full 346-study corpus. Compared with earlier models, the 2026 framework introduces three important refinements. First, the antecedent layer includes the fintech ecosystem as a distinct driver of financial literacy development, recognising that direct exposure to digital financial services can itself generate learning. Second, the core financial literacy construct is expanded beyond knowledge, attitude, behaviour, and digital capability to include climate financial literacy and AI financial literacy as emerging dimensions. Third, the outcome layer is broadened to include ESG compliance, while AI adoption is positioned as a moderator that may strengthen, weaken, or alter the direction of relationships between literacy and MSME outcomes. The framework therefore captures both the established evidence base and the evolving financial environment in which MSMEs operate.

Figure 10: Integrated Conceptual Framework - Financial Literacy and MSME/SME Outcomes (2026 Edition)

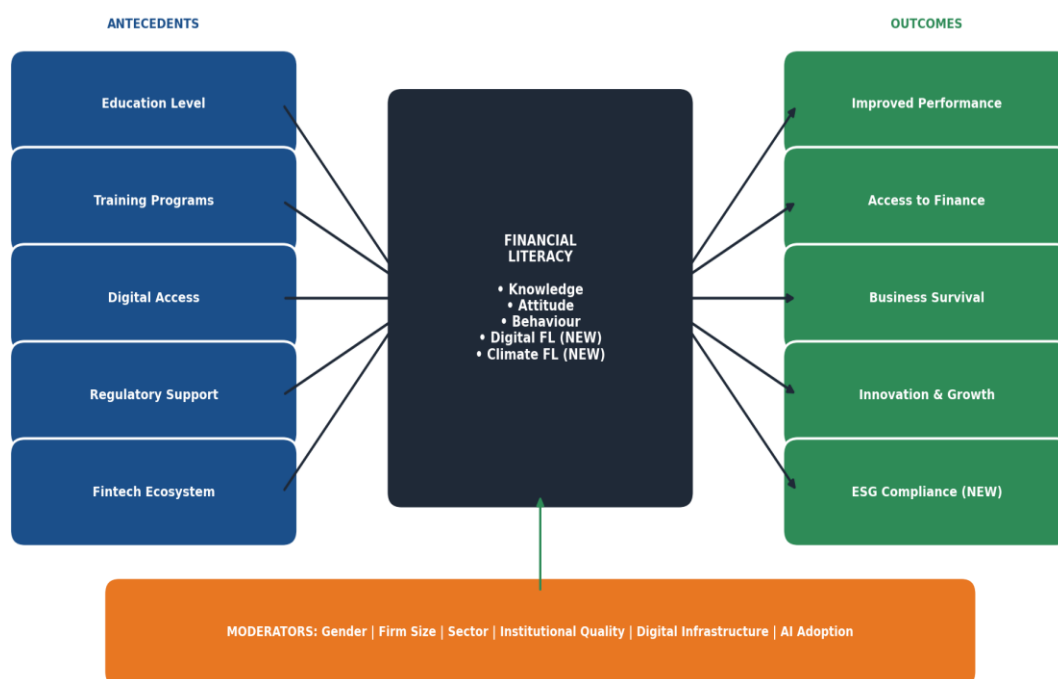


Figure 10: Updated Integrated Conceptual Framework – Financial Literacy and MSME/SME Outcomes (2026 Edition). Arrows denote directional influence. Source: Authors' synthesis of 346 reviewed studies.

5.3 Research Gaps and Future Agenda

Table 5 summarises seven research gaps that emerge from the review and collectively define a forward-looking research agenda for 2026–2030. These gaps point to the need for stronger causal evidence, more consistent measurement, wider geographic coverage, and deeper integration between entrepreneurship, fintech, sustainability finance, behavioural finance, and AI research.

Table 5: Research Gaps and Future Research Directions (2026–2030 Agenda)

Gap Area	Current Limitation	Future Research Direction
Longitudinal evidence	Cross-sectional designs dominate (79% of studies 2010–2026)	Panel data & quasi-experimental designs across MSME life cycle
AI & FL interaction	Nascent — only 18 studies (2025–2026)	How AI advisory tools moderate, substitute, or complement human FL
Climate finance literacy	Emerging stream; no validated CFL instrument	Develop & validate CFL scales for MSME operators in developing economies
Causal mechanisms	Mediation/moderation rarely tested rigorously	SEM, RCT, and ML-based causal inference to test mechanisms
DeFi & crypto literacy	Only 14 studies; limited to Southeast Asia	DeFi literacy impacts on MSME financing in Africa & Latin America

Middle-income & MENA contexts	Skewed toward low-income Sub-Saharan Africa	FL–MSME studies in middle-income: Brazil, Mexico, Morocco, Egypt
Policy evaluation rigour	Few RCTs; mostly observational impact evaluations	Rigorous quasi-experimental policy assessments of FL programmes

Two broader challenges cut across the specific gaps listed in Table 5. The first is measurement fragmentation. The reviewed studies use a wide variety of financial literacy instruments, making cumulative comparison difficult and limiting the scope for formal meta-analysis. A standardised yet context-sensitive MSME Financial Literacy Assessment would help researchers compare findings across countries, sectors, and firm sizes while still allowing adaptation for lower-literacy and low-bandwidth environments. The second challenge is theoretical integration. Financial literacy rarely operates in isolation; it interacts with entrepreneurial self-efficacy, resilience, risk tolerance, innovation orientation, and institutional support. Future work should therefore model financial literacy alongside these psychological and organisational capabilities rather than treating it as a standalone explanatory variable.

6. CONCLUSION

This paper offers an updated systematic literature review and bibliometric analysis of financial literacy in MSMEs/SMEs by synthesising 346 peer-reviewed and scholarly publications published between January 2010 and July 2026. By combining a PRISMA 2020-guided review with VOSviewer-based bibliometric mapping and LDA topic modelling, the study provides a multi-layered account of the field’s intellectual development, dominant research streams, and emerging challenges in the state of the field in 2026.

The evidence confirms that financial literacy remains a significant and positive determinant of MSME access to finance, business performance, and enterprise survival in developing and emerging economies. Its knowledge, attitude, behaviour, and digital dimensions consistently show meaningful practical effects, although the strength of these effects varies across institutional and regional contexts. The most recent literature extends this conclusion by identifying three important developments: the AI amplifier paradox, the climate finance literacy gap, and the interaction between embedded fintech and financial literacy. These themes are no longer marginal additions to the literature; rather, they are becoming central to understanding the financial environment in which MSMEs will operate in the coming decade.

6.1 Theoretical Contributions

The study makes five theoretical contributions. First, it provides a current bibliometric map of the financial literacy–MSME research domain and identifies six intellectual clusters, including a newly visible frontier cluster linking AI, ESG, and DeFi. Second, it consolidates 2025–2026 evidence on the Digital Amplifier Effect, which suggests that AI advisory tools may magnify rather than equalise the consequences of financial literacy differences among MSME operators. Third, it advances AI Financial Literacy (AIFL) and Climate Financial Literacy (CFL) as emerging extensions of the financial literacy construct in MSME settings, building on the OECD/INFE knowledge–attitude–behaviour framework and the later addition of digital financial literacy by Morgan and Long. Fourth, it identifies the Embedded Fintech Paradox, whereby digital lending platforms can reduce the importance of financial literacy for initial credit access while increasing its importance for effective borrowing outcomes. Fifth, the updated conceptual framework offers a coherent structure for future empirical research by integrating established and emerging constructs within a single model.

6.2 Practical Implications

For policymakers, the findings support continued investment in integrated financial literacy programmes for MSME owners. Three design priorities are especially important. First, simplified rule-of-thumb training should be preferred over overly complex curricula, consistent with Drexler et al. (2014) and later experimental evidence. Second, digital financial literacy should be treated as a core component of MSME training rather than as an optional addition, because it helps entrepreneurs convert fintech access into measurable business benefits. Third, AI literacy should be introduced into emerging training models so that MSME operators can critically assess AI-generated financial recommendations instead of relying on them passively.

For financial institutions, the evidence on fintech–financial literacy complementarity suggests that digital lending platforms can be designed to promote learning while improving portfolio quality. Simple prompts that encourage borrowers to review financial summaries, understand repayment schedules, set reminders, and compare

loan terms can function as embedded literacy interventions. This literacy-by-design approach uses existing digital touchpoints to strengthen borrower capability, reduce default risk, and support longer-term customer relationships.

For development finance institutions and impact investors, the climate finance literacy gap represents both a development challenge and a market opportunity. Accessible and context-specific learning resources are needed to explain sustainability-linked loans, green guarantees, ESG reporting expectations, and climate-related financial risks in language that MSME operators can use. Such support should accompany green finance product development; otherwise, available products may remain underused by the very enterprises they are intended to assist.

For educational institutions, entrepreneurship and commerce curricula should be updated to reflect the financial realities facing contemporary MSMEs. Programmes should continue to include conventional financial management but should also address digital financial literacy, critical evaluation of AI tools, platform-based finance, and basic sustainability finance concepts. This broader curriculum would better prepare future entrepreneurs to navigate increasingly digital, automated, and sustainability-linked financial systems.

6.3 Limitations and Future Research

This review has several limitations. First, the restriction to English-language publications may have excluded relevant studies from non-Anglophone contexts, particularly Latin America, the MENA region, and Francophone Africa. Second, the 2025–2026 sub-corpus is necessarily incomplete because the review includes publications only up to July 2026, which may underrepresent the newest research streams. Third, the wide variation in financial literacy measurement instruments across the 346 reviewed studies prevented formal meta-analysis, making measurement standardisation both a limitation of the present review and a priority for the field. Fourth, publication bias may have increased the visibility of positive findings because studies reporting null or negative results remain less common in peer-reviewed outlets.

The research agenda for 2026–2030 should therefore prioritise several areas. Longitudinal panel studies are needed to trace how financial literacy develops across the MSME life cycle and how it affects outcomes over time. Randomised and quasi-experimental studies should evaluate the effectiveness of AI literacy training and digital financial literacy interventions. Scholars should also develop and validate standardised measures of Climate Financial Literacy and AI Financial Literacy for MSME contexts. Comparative studies should extend the geographic base of the literature beyond Sub-Saharan Africa and South/Southeast Asia, while mechanism-focused studies using structural equation modelling, causal mediation analysis, and other rigorous approaches should examine how different financial literacy dimensions jointly influence MSME outcomes. Addressing these priorities will require collaboration across entrepreneurship, development economics, behavioural finance, computer science, and sustainability research.

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