

Bibliometric Analysis of MSME Financing

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Article Info

Article history:

Received Feb, 2026

Revised Feb, 2026

Accepted Feb, 2026

Keywords:

MSME Financing
Financial Inclusion
Digital Transformation
Bibliometric Analysis
Vosviewer

ABSTRACT

This study aims to map the intellectual structure and research trends in MSME financing through a bibliometric analysis of scientific publications indexed in the Scopus database. Using VOSviewer as the primary analytical tool, this research examines keyword co-occurrence, overlay visualization, density mapping, co-authorship networks, institutional collaboration, and country collaboration patterns to identify dominant themes and emerging research directions. The findings indicate that MSMEs remain the central focus within the financing literature, closely associated with financial inclusion, financial literacy, digital transformation, and entrepreneurial finance. The evolution of research shows a transition from traditional microfinance and banking perspectives toward digitally enabled and innovation-driven financing ecosystems. Density analysis highlights financial inclusion as a highly concentrated research area, while themes such as decentralized finance and risk management appear as emerging opportunities for future studies. Collaboration patterns reveal strong interconnectedness among authors and institutions, with significant contributions from Asian countries, particularly India, China, and the Philippines, reflecting the importance of MSMEs in developing economies. This study provides a comprehensive overview of the development, structure, and future research agenda of MSME financing literature, offering valuable insights for scholars, policymakers, and practitioners seeking to strengthen inclusive and sustainable financial systems for MSMEs.

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1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a foundational role in the socio-economic development of nations across the globe. As engines of employment generation, innovation, and economic resilience, MSMEs contribute significantly to GDP growth and poverty alleviation in both developed and emerging economies [1]. In many countries, MSMEs represent the largest

share of businesses, yet they remain disproportionately underrepresented in formal financial ecosystems due to structural barriers in access to credit and investment [2], [3]. Financing challenges have consequently become central to scholarly discourse, with researchers exploring the multidimensional relationship between MSME development and financial inclusion [3]. Understanding these dynamics is critical because the

financing constraints faced by MSMEs do not only inhibit business growth but also cascade into broader economic inefficiencies.

The financing landscape of MSMEs is shaped by both conventional financial institutions and alternative funding mechanisms. Traditional lenders such as commercial banks often perceive MSMEs as high-risk due to limited collateral, constrained cash flows, and informational opacity [4], [5]. This perception leads to stringent lending conditions and elevated costs of borrowing, thereby restricting MSME access to formal finance [5]. On the other hand, alternative financing solutions such as microcredit, leasing, angel investment, and crowdfunding have emerged to bridge gaps in MSME finance [6]. These alternatives carry their own complexities and efficacy measures, prompting diverse research perspectives within finance, entrepreneurship, and development studies. Hence, a systematic overview of literature on MSME financing is essential for identifying prevailing research trajectories and unresolved questions.

Bibliometric analysis has gained popularity as a quantitative method for synthesizing research output and mapping intellectual structures within a given field [7]. By leveraging citation patterns, co-authorship networks, and thematic evolution, bibliometric studies reveal the most influential works, emerging subtopics, and interdisciplinary linkages that define scholarly landscapes [8]. In the context of MSME financing, bibliometric studies can illuminate how research emphasis has shifted over time—from traditional banking constraints to fintech innovation solutions—and how global events such as economic crises shape academic attention. Such analyses enable scholars, policymakers, and practitioners to discern not only what has been studied but also where knowledge gaps persist.

Despite growing literature on MSME financing, there is a lack of consolidated bibliographic syntheses that systematically chart the evolution of research themes, key contributors, and knowledge structures in this area. Traditional literature reviews offer

narrative insights but often lack the comprehensive rigor to account for large bodies of academic output. Bibliometric methods complement narrative reviews by providing data-driven depictions of scholarly productivity and influence. For instance, co-citation analysis can identify foundational works that have shaped MSME finance discourse, while keyword co-occurrence analysis can reveal trends in research topics such as access to credit, fintech adoption, and risk assessment models [9]. This integration of quantitative visualization with qualitative interpretation enhances understanding of both macro and micro dimensions of the research domain.

In addition, the global diversity of MSME financing research reflects regional variations in economic conditions, institutional frameworks, and entrepreneurial cultures. Studies from developed countries often emphasize innovation financing and venture capital ecosystems, whereas research from emerging economies prioritizes issues of financial inclusion, microcredit effectiveness, and policy interventions [10]. A bibliometric analysis that accounts for such geographical variation can offer comparative insights into how financing challenges and research priorities differ across socio-economic contexts. Such insights are instrumental for crafting contextually relevant policies and for identifying opportunities for cross-regional learning and collaboration.

Given the accelerated pace of technological change influencing financial services—such as digital banking, peer-to-peer platforms, and mobile money—current research on MSME financing continues to diversify and expand [11], [12]. Simultaneously, global disruptions such as the COVID-19 pandemic have reshaped economic landscapes, intensifying the need for resilient and adaptable financing mechanisms for MSMEs [13]. These dynamic forces make it imperative to aggregate and quantify scholarly work in MSME finance not merely as a stock of literature but as an evolving intellectual ecosystem. A bibliometric study, therefore, serves as a strategic tool to not only catalog past

contributions but also inform future research agendas and policy frameworks.

Although numerous studies have explored aspects of MSME financing, the literature lacks a comprehensive bibliometric synthesis that systematically identifies the most influential research, thematic clusters, and developmental trends over time. Existing reviews are often fragmented by region, methodology, or specific financing instruments, resulting in a fragmented understanding of the overall research landscape. Without an integrative bibliometric framework, scholars and policymakers face challenges in discerning emerging hotspots, comparative insights across contexts, and opportunities for interdisciplinary collaboration within MSME finance research. The objective of this study is to conduct a comprehensive bibliometric analysis of literature on MSME financing to map the intellectual structure, research evolution, and thematic trends over time.

2. METHODS

This study employs a bibliometric research design to systematically analyze the scientific literature on MSME financing. Bibliometric analysis is a quantitative method used to evaluate and map academic publications through statistical and network-based techniques. The study adopts a structured approach consisting of data collection, data refinement, and bibliometric performance and science mapping analyses. A comprehensive search was conducted in a reputable academic database Scopus to ensure high-quality and peer-reviewed publications. The search query included keywords related

to “MSME financing,” “SME finance,” “micro and small enterprise funding,” “financial access,” and other related terms. Boolean operators and inclusion criteria were applied to refine the results. The study limited publications to journal articles written in English to maintain consistency and comparability. The time span was defined to capture the evolution of research trends from the early development of MSME finance discourse to the most recent publications.

After retrieving the initial dataset, a screening and cleaning process was conducted to ensure accuracy and relevance. Duplicate records, conference summaries, book reviews, and unrelated articles were excluded. Bibliographic information such as authors, titles, abstracts, keywords, citations, affiliations, and publication years was exported in compatible formats for analysis. Citation analysis was conducted to identify the most influential articles and foundational studies shaping MSME financing research. Additionally, collaboration patterns among authors, institutions, and countries were examined to understand knowledge networks and global research linkages within the field.

To explore the intellectual structure and thematic evolution of MSME financing research, science mapping techniques were employed. Co-citation analysis was used to identify clusters of frequently cited works, indicating core theoretical foundations. Co-authorship analysis helped visualize collaborative networks, while keyword co-occurrence analysis was applied to detect dominant themes and emerging research trends. Visualization software VOSviewer was utilized to generate network maps and thematic diagrams.

3. RESULTS AND DISCUSSION

3.1 Keyword Co-Occurrence Network

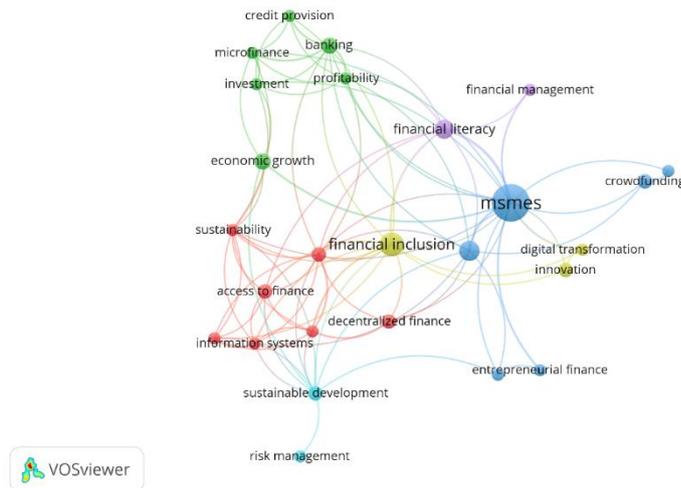


Figure 1. Network Visualization

Source: Data Analysis Result, 2026

Figure 1 illustrates the intellectual structure of research on MSME financing, where the keyword “MSMEs” appears as the central node connecting multiple thematic clusters. Its large size and dense linkages indicate that MSMEs function as the core research focus, bridging financial inclusion, digital innovation, and microfinance discussions. The proximity of nodes such as financial inclusion, entrepreneurial finance, and financial literacy suggests that contemporary MSME financing research emphasizes access to financial services as a critical determinant of business sustainability and growth.

The green cluster highlights themes related to microfinance, banking, profitability, credit provision, and investment, reflecting the traditional financial perspective within MSME financing literature. This cluster indicates that earlier or foundational studies largely focused on formal financial institutions and credit mechanisms as drivers of MSME performance and economic growth. The strong interconnections among microfinance, profitability, and economic growth demonstrate how scholars frame financing as a catalyst for broader macroeconomic outcomes, particularly in developing economies.

Meanwhile, the red cluster revolves around access to finance, information systems, sustainability, and decentralized

finance, suggesting an emerging intersection between financial accessibility and technological or sustainable frameworks. The presence of decentralized finance indicates a shift toward alternative financial models that potentially reduce barriers faced by MSMEs in traditional banking systems. This cluster reflects growing scholarly interest in how digital infrastructures and sustainability agendas reshape financing ecosystems, particularly in contexts where financial exclusion remains a structural challenge.

The blue cluster emphasizes crowdfunding, entrepreneurial finance, and digital transformation, signaling the expansion of innovative financing mechanisms beyond conventional loans. The strong linkage between crowdfunding and MSMEs indicates that researchers increasingly view digital platforms as viable channels for capital acquisition, especially for startups and small enterprises with limited collateral. Digital transformation and innovation also appear as bridging nodes, implying that technological adoption is not only operational but also financial, enabling new funding models that integrate fintech solutions into MSME ecosystems.

The yellow and purple clusters, including financial literacy and financial management, highlight the human and managerial dimensions of MSME financing. Their positioning between clusters suggests a

mediating role, where financial capability influences how MSMEs access, manage, and benefit from financing instruments.

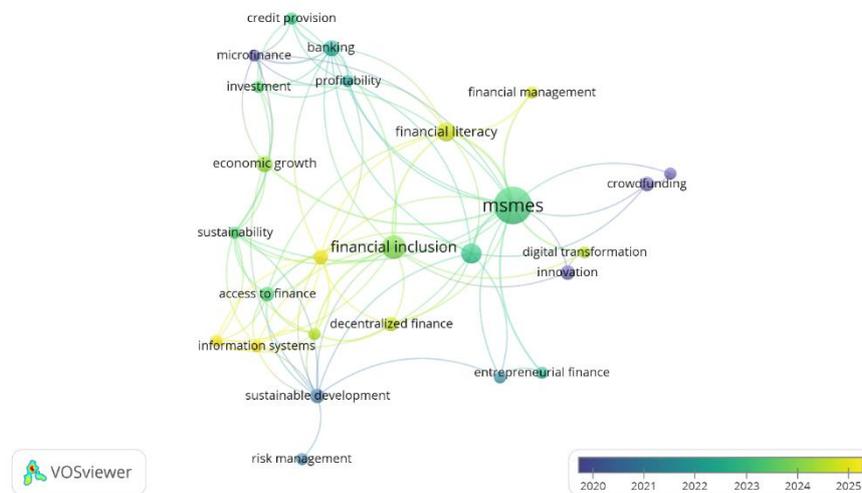


Figure 2. Overlay Visualization

Source: Data Analysis Result, 2026

Figure 2 illustrates the temporal evolution of research themes in MSME financing, where color gradients represent publication periods from earlier studies (blue–purple) to more recent topics (green–yellow). The keyword “MSMEs” remains the central hub across different time phases, indicating its sustained relevance as the core subject. Earlier studies, represented by darker tones, are closely associated with themes such as crowdfunding, entrepreneurial finance, and sustainable development, suggesting that initial research efforts emphasized alternative financing mechanisms and sustainability-oriented financial practices.

As the research field evolved, the focus shifted toward themes highlighted in green tones, including financial literacy, financial inclusion, and digital transformation. These keywords appear

centrally positioned, reflecting their role as transitional topics that connect traditional financing discussions with emerging digital and inclusive financial systems. The prominence of financial inclusion indicates a growing scholarly interest in addressing structural barriers faced by MSMEs, while digital transformation and innovation signal the increasing integration of fintech solutions and technology-driven financial ecosystems.

More recent trends, represented by yellow tones, highlight themes such as financial management, information systems, and access to finance. This suggests that current research is moving toward more practical and managerial perspectives, focusing on how MSMEs effectively utilize financing resources within digitally enabled environments.

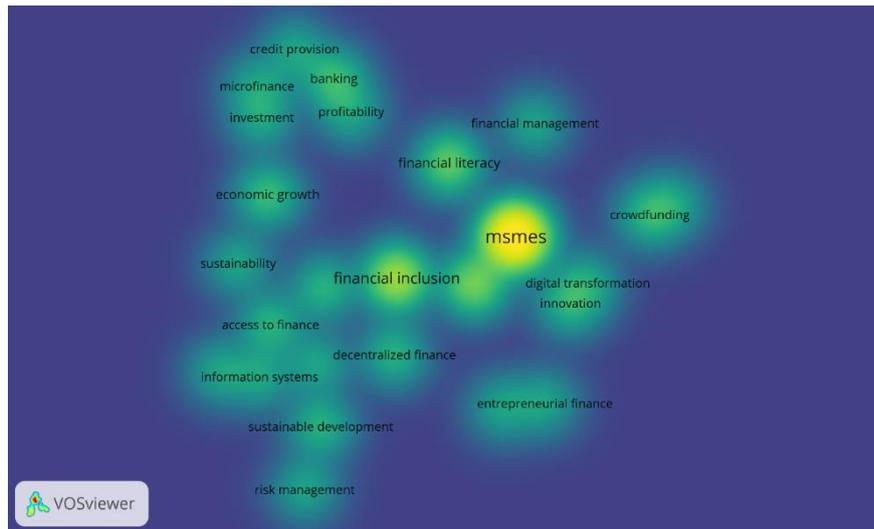


Figure 3. Density Visualization

Source: Data Analysis Result, 2026

Figure 3 highlights the concentration and intensity of research themes within the MSME financing literature. The brightest area is centered on the keyword “MSMEs,” indicating its dominant role as the core focus that connects multiple research streams. Surrounding this central node, terms such as financial inclusion, financial literacy, and digital transformation appear with relatively high density, suggesting that these topics have received significant scholarly attention and serve as major pillars in contemporary MSME financing discussions. Their proximity

implies that recent studies increasingly explore financing not only from a capital-access perspective but also through capability development and technological integration. Other areas with moderate density include microfinance, banking, profitability, and entrepreneurial finance, reflecting sustained but more specialized research interests. Meanwhile, keywords such as risk management, information systems, and decentralized finance appear in lower-density zones, indicating emerging or less-explored themes with potential for future investigation.

3.2 Co-Authorship Network

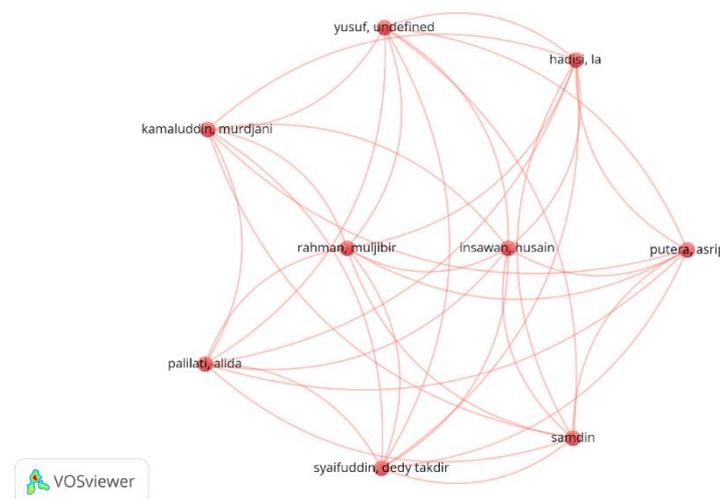


Figure 4. Author Collaboration Visualization

Source: Data Analysis Result, 2026

Figure 4 demonstrates a relatively interconnected research collaboration structure within the MSME financing literature, where several authors form a dense collaborative cluster rather than isolated subgroups. Authors such as insawan husain, rahman muljibir, and yusuf appear centrally positioned, indicating their role as key connectors who link multiple researchers within the network. The numerous

interlinking lines suggest frequent co-publication and collaborative engagement among scholars, reflecting a research community that tends to work collectively rather than individually. Peripheral authors, including putera asrip and palilati aida, remain connected to the main cluster, implying inclusion within shared research themes even if their collaboration intensity is slightly lower.

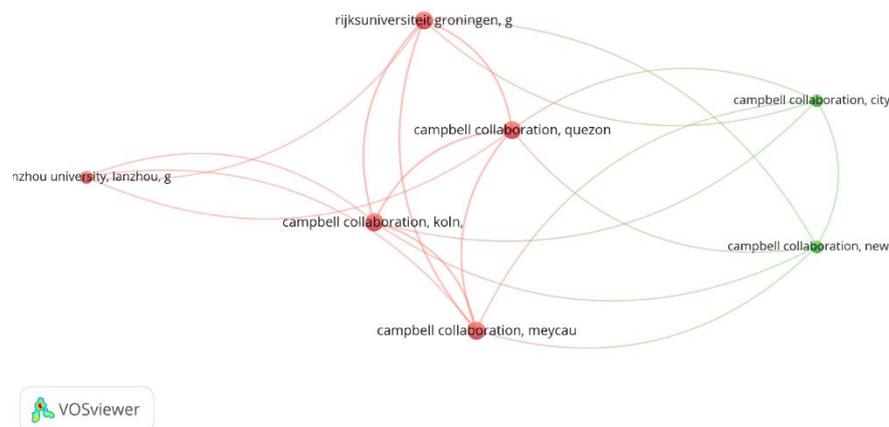


Figure 5. Affiliation Collaboration Visualization

Source: Data Analysis Result, 2026

Figure 5 shows a multi-regional research structure where several organizations act as central connectors within the MSME financing literature. Institutions such as Rijksuniversiteit Groningen and multiple Campbell Collaboration branches (Quezon, Koln, Meycau) appear as key nodes, indicating strong collaborative relationships and cross-institutional research activities. The dense links among these institutions suggest

that MSME financing studies are often conducted through collaborative projects rather than isolated institutional efforts. Meanwhile, institutions positioned slightly apart, such as Lanzhou University and the Campbell Collaboration nodes on the right cluster, reflect geographically diverse participation, highlighting the international nature of MSME financing research.

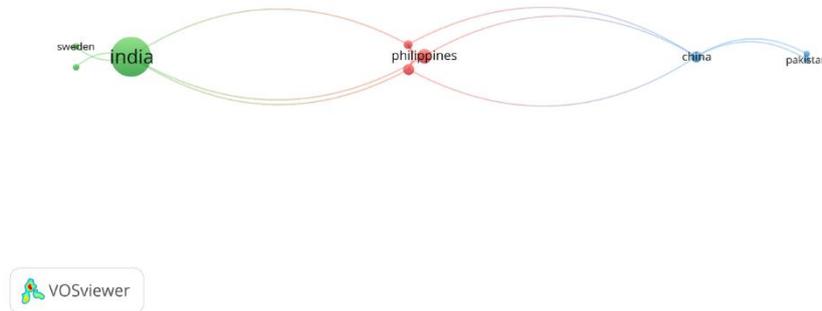


Figure 6. Country Collaboration Visualization

Source: Data Analysis Result, 2026

Figure 6 illustrates the geographic distribution and partnerships shaping MSME financing research, with India emerging as the most dominant contributor, indicated by its larger node size and strong linkage intensity. India appears closely connected with other countries such as the Philippines, which functions as a bridging node linking South Asian and East Asian research collaborations. Meanwhile, China and Pakistan form another

collaborative axis, suggesting regional cooperation in examining MSME financing issues within developing economies. The presence of Sweden connected to India indicates cross-regional knowledge exchange between developed and emerging research contexts.

3.3 Citation Analysis

Table 1. Top Cited Research

Citations	Authors and year	Title
42	[14]	Barrier analysis of supply chain finance adoption in manufacturing companies
38	[15]	Scope for alternative avenues to promote financial access to MSMEs in developing nation evidence from India
31	[16]	The Influence of Financial Inclusion on MSMEs' Performance Through Financial Intermediation and Access to Capital
29	[17]	Strategies for MSMEs to Achieve Sustainable Competitive Advantage: The SWOT Analysis Method
26	[18]	Regulatory issues inhibiting the financial inclusion: a case study among Islamic banks and MSMEs in Indonesia
25	[19]	Examining the determinants and consequences of financial constraints faced by Micro, Small and Medium Enterprises' owners
23	[20]	Favoring the small and the plenty: Islamic banking for MSMEs
23	[21]	The Effect and Impact of Signals on Investing Decisions in Reward-Based Crowdfunding: A Comparative Study of China and the United Kingdom
22	[22]	DIGITALIZATION AND INFORMAL MSME: DIGITAL FINANCIAL INCLUSION FOR MSME DEVELOPMENT IN THE FORMAL ECONOMY

Citations	Authors and year	Title
21	[23]	Digital inclusive finance and corporate environmental performance: Insights from Chinese micro, small- and medium-sized manufacturing enterprises

Source: Scopus, 202

Discussion

Overview of Findings

The bibliometric analysis reveals that research on MSME financing has evolved into a multidimensional field integrating financial inclusion, digital transformation, and entrepreneurial finance perspectives. The keyword network visualization demonstrates that "MSMEs" functions as the central node linking various thematic clusters, indicating that the literature is not limited to traditional financing mechanisms but increasingly incorporates technological and inclusive financial frameworks. Earlier studies were primarily associated with microfinance, banking, credit provision, and profitability, reflecting a strong emphasis on institutional lending and economic growth outcomes. However, the overlay visualization indicates a gradual shift toward emerging topics such as financial literacy, digital transformation, innovation, and information systems, highlighting the growing importance of capability development and technological adoption in MSME financing research.

The density visualization further supports these findings by showing a high concentration of studies around financial inclusion and financial literacy, suggesting that scholars increasingly view financing challenges through the lens of accessibility and financial capability rather than solely capital availability. Meanwhile, themes such as decentralized finance, risk management, and information systems appear in lower-density areas, implying that these topics remain underexplored and offer opportunities for future research. This transition reflects a broader transformation in the MSME financing landscape, where digital financial ecosystems and inclusive policies are becoming central to supporting business sustainability.

The co-authorship and institutional collaboration networks indicate a relatively

cohesive research community, characterized by interconnected scholars and multi-institutional partnerships. Key authors act as bridges connecting multiple collaborative groups, suggesting that knowledge production in MSME financing relies heavily on collective research efforts. Institutional networks show strong linkages among universities and research collaborations across different regions, emphasizing the interdisciplinary nature of MSME financing studies that integrate finance, entrepreneurship, and digital innovation domains.

From a geographic perspective, the country collaboration analysis highlights the dominance of Asian countries, particularly India, China, and the Philippines, in contributing to MSME financing research. These countries serve as major hubs of scholarly activity, reflecting the critical role of MSMEs in emerging economies where access to finance remains a structural challenge. The presence of collaborations with developed countries, such as Sweden, indicates growing international engagement, suggesting that comparative and cross-country perspectives are becoming increasingly relevant in understanding MSME financing ecosystems.

Theoretical Implications

The findings suggest that MSME financing research has transitioned from a traditional financial intermediation paradigm toward a more integrated ecosystem approach. The prominence of financial inclusion and digital transformation indicates that theoretical discussions are moving beyond resource-based perspectives toward capability-oriented and technology-driven frameworks. This shift aligns with emerging theories emphasizing financial ecosystems, fintech adoption, and entrepreneurial resilience as key drivers of MSME growth. Furthermore, the bridging role of financial

literacy suggests that human capital and managerial competencies are increasingly recognized as mediating factors between financing access and firm performance.

Practical Implications

Practically, the results imply that policymakers and financial institutions should prioritize inclusive and digitally enabled financing models to support MSMEs. The increasing prominence of crowdfunding, decentralized finance, and innovation highlights the need for flexible financing mechanisms that address the limitations of traditional banking systems. For practitioners, strengthening financial literacy and digital capabilities among MSME owners may enhance their ability to access diverse financing sources and manage financial resources effectively. Additionally, the strong research concentration in developing economies suggests that policy interventions should be context-specific, considering regional economic structures and technological readiness.

Future Research Directions

Despite the growth of MSME financing literature, several research gaps remain. Emerging themes such as decentralized finance, risk management, and advanced information systems appear less dense in the visualization, indicating opportunities for further investigation. Future studies could explore how fintech innovations reshape MSME financing structures, particularly in relation to sustainability and

resilience. Moreover, expanding cross-country collaborations may provide deeper insights into how institutional and cultural differences influence financing outcomes. Integrating quantitative performance metrics with digital transformation perspectives may also contribute to a more comprehensive understanding of MSME financing dynamics.

4. CONCLUSION

This bibliometric study demonstrates that research on MSME financing has evolved from a traditional focus on microfinance, banking, and credit provision toward a more integrated perspective emphasizing financial inclusion, digital transformation, and financial literacy. The network, overlay, and density visualizations reveal that MSMEs remain the central research focus, while emerging themes such as innovation, crowdfunding, and decentralized finance indicate a growing interest in technology-driven financing ecosystems. Collaborative patterns among authors, institutions, and countries further highlight the global and interdisciplinary nature of this field, with strong contributions from emerging economies. The findings suggest that future MSME financing research should move beyond conventional financial access issues by incorporating digital capability, inclusive financial strategies, and sustainable development perspectives to better support MSME growth in a rapidly changing economic environment.

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