HIJM
HORIZON: Indonesian Journal of Multidisciplinary

p-ISSN: 2987-7776
e-ISSN: 2987-7180
Vol. 4, No. 4, 2026

RESEARCH TRENDS IN MOBILE BANKING ADOPTION IN DEVELOPING COUNTRIES: A SYSTEMATIC LITERATURE REVIEW AND BIBLIOMETRIC ANALYSIS

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Article History

Received: 04-07-2026

Revision: 22-07-2026

Accepted: 26-07-2026

Published: 30-07-2026

Abstract. The development of mobile banking in developing countries has prompted an increasing number of studies on the factors influencing its adoption. However, research findings are still scattered across various theoretical models and contexts, resulting in a lack of a comprehensive synthesis of dominant themes, development trends, and future research directions. This study aims to analyze the development of mobile banking adoption studies in developing countries through a Systematic Literature Review (SLR) and bibliometric analysis. The study used the PRISMA 2020 guidelines for Scopus-indexed journal articles published between 2022 and 2025. Inclusion criteria included English-language articles discussing mobile banking adoption in developing countries, while proceedings, book chapters, duplicate articles, and irrelevant publications were excluded from the analysis. Of the 147 identified articles, 58 met the criteria and were analyzed using VOSviewer. The results showed that dominant themes included the Technology Acceptance Model (TAM), UTAUT, trust, risk perception, customer satisfaction, and adoption behavior. The analysis also identified a shift towards financial inclusion, fintech integration, digital transformation, service quality, and customer loyalty. These findings provide a current synthesis of mobile banking research developments and serve as a basis for developing a research agenda on digital financial ecosystems in developing countries.

Keywords: Mobile Banking; Developing Countries; Bibliometric Analysis; PRISMA; Digital Financial Services.

Abstrak. Perkembangan *mobile banking* di negara-negara berkembang telah mendorong meningkatnya jumlah penelitian mengenai faktor-faktor yang memengaruhi adopsinya. Namun, hasil penelitian masih tersebar pada berbagai model teoretis dan konteks yang berbeda sehingga belum tersedia sintesis komprehensif mengenai tema dominan, tren perkembangan, dan arah penelitian selanjutnya. Penelitian ini bertujuan menganalisis perkembangan kajian adopsi *mobile banking* di negara-negara berkembang melalui *Systematic Literature Review* (SLR) dan analisis bibliometrik. Penelitian menggunakan pedoman PRISMA 2020 terhadap artikel jurnal terindeks Scopus yang diterbitkan pada periode 2022–2025. Kriteria inklusi meliputi artikel berbahasa Inggris yang membahas adopsi *mobile banking* di negara berkembang, sedangkan prosiding, bab buku, artikel duplikat, dan publikasi yang tidak relevan dikeluarkan dari analisis. Dari 147 artikel yang teridentifikasi, sebanyak 58 artikel memenuhi kriteria dan dianalisis menggunakan VOSviewer. Hasil penelitian menunjukkan bahwa tema dominan meliputi *Technology Acceptance Model* (TAM), UTAUT, kepercayaan, persepsi risiko, kepuasan pelanggan, dan perilaku adopsi. Analisis juga mengidentifikasi pergeseran menuju tema inklusi keuangan, integrasi *fintech*, transformasi digital, kualitas layanan, dan loyalitas pelanggan. Temuan ini memberikan sintesis terkini mengenai perkembangan riset *mobile banking* serta menjadi dasar pengembangan agenda penelitian pada ekosistem keuangan digital di negara-negara berkembang.

Kata Kunci: *Mobile Banking; Developing Countries; Bibliometric Analysis; PRISMA; Digital Financial Services.*

How to Cite: Agustin, A & Saluy, A. B. (2026). Research Trends in Mobile Banking Adoption in Developing Countries: A Systematic Literature Review and Bibliometric Analysis. *HORIZON: Indonesian Journal of Multidisciplinary*, 4 (4), 5099-5110. http://doi.org/10.54373/hijm.v4i4.6923

INTRODUCTION

The rapid expansion of digital financial services has fundamentally transformed the banking industry worldwide, with mobile banking becoming one of the primary channels for delivering financial services. In developing countries, mobile banking plays a strategic role in promoting financial inclusion, reducing transaction costs, and expanding access to banking services for underserved populations. According to the Global Findex Database 2021 (Demirgüç-Kunt et al., 2022), digital financial account ownership continues to increase globally, while smartphone penetration and internet accessibility have accelerated the adoption of mobile financial services across emerging economies. This transformation has also intensified following the COVID-19 pandemic, which accelerated consumers' reliance on digital transactions and contactless financial services.

The increasing adoption of mobile banking has stimulated substantial academic interest. Previous studies have investigated various determinants of adoption, including perceived usefulness, ease of use, trust, perceived risk, service quality, security, social influence, and facilitating conditions using theoretical frameworks such as the Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), Diffusion of Innovation (DOI), Technology–Organization–Environment (TOE), and Information Systems Success Model (Mufarih et al., 2020; Prasetya et al., 2023; Sembiring et al., 2024; Candiwan et al., 2024). More recent studies have also begun to examine customer loyalty, fintech integration, digital ecosystems, and financial inclusion as emerging themes in mobile banking research.

Despite the growing number of publications, the literature remains fragmented across different theoretical perspectives, research contexts, and analytical approaches. Most existing reviews focus on specific determinants, individual countries, or particular theoretical models, making it difficult to obtain a comprehensive understanding of the evolution of mobile banking adoption research in developing countries. Recent bibliometric studies have mapped broad digital banking or fintech research; however, they provide limited discussion regarding the dominant theoretical frameworks, thematic evolution, and future research opportunities specifically related to mobile banking adoption in developing countries (Cherian et al., 2025). Consequently, a comprehensive synthesis integrating systematic literature review and bibliometric analysis remains limited.

This study addresses this research gap by systematically reviewing and mapping the research landscape of mobile banking adoption in developing countries using the PRISMA 2020 framework combined with bibliometric analysis. Publications indexed in the Scopus database during the 2022–2025 period were analyzed to identify publication trends, dominant theoretical frameworks, influential research themes, collaboration patterns, and emerging research directions. Unlike previous reviews that primarily summarize determinants of adoption, this study integrates systematic screening with network visualization to reveal the intellectual structure and thematic development of the field.

The findings are expected to contribute both theoretically and practically. Theoretically, this study provides a comprehensive synthesis of mobile banking adoption research, identifies emerging research clusters, and proposes future research agendas for digital banking in developing countries. Practically, the findings offer insights for financial institutions, policymakers, and researchers in designing digital banking strategies that strengthen financial inclusion, improve customer trust, and support sustainable digital transformation.

METHOD

This study employed a Systematic Literature Review (SLR) integrated with bibliometric analysis to examine research trends on mobile banking adoption in developing countries. The review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines to ensure a transparent and reproducible article selection process. Bibliometric analysis was subsequently conducted to visualize the intellectual structure, thematic evolution, and collaboration patterns within the selected literature.

The literature search was conducted in the Scopus database in June 2026 because it provides comprehensive coverage of high-quality peer-reviewed publications across multiple disciplines. The search used combinations of the keywords "mobile banking", "mobile banking adoption", "digital banking", "internet banking", "developing countries", and "emerging economies", connected using Boolean operators (AND/OR). The search was limited to publications published between 2022 and 2025, written in English, and indexed as journal articles. Conference papers, book chapters, editorials, notes, duplicated records, and publications unrelated to mobile banking adoption in developing countries were excluded.

Table 2. Inclusion and exclusion criteria

Criteria	Description
Inclusion	Journals in English on mobile banking and mobile financial services
Exclusion	Editorials, book reviews, errata, and articles deemed irrelevant based on their titles and abstracts

The identification stage produced 147 records. After duplicate removal and title-abstract screening, irrelevant publications were excluded based on the predefined eligibility criteria. Full-text assessment was subsequently conducted to evaluate the relevance of each article to the research objectives. Finally, 58 articles met all inclusion criteria and were included in the systematic review and bibliometric analysis. The complete selection process is illustrated using the PRISMA 2020 flow diagram.

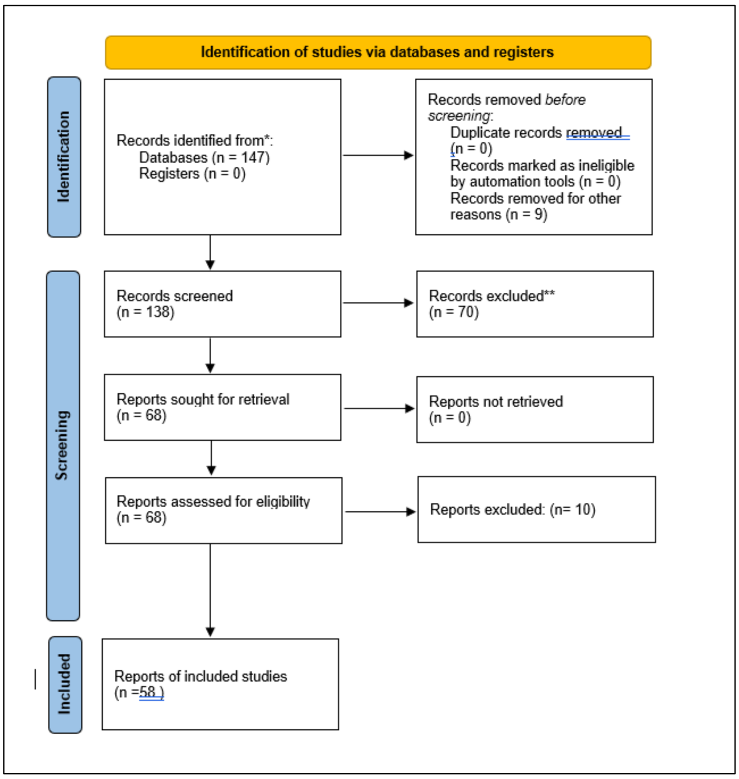

Figure 1. Prisma Flowchart

Bibliometric analysis was performed using VOSviewer version 1.6.20. The analysis consisted of three stages. First, performance analysis was conducted to identify publication trends, publication years, countries, journals, and citation patterns. Second, science mapping was performed through keyword co-occurrence analysis to identify dominant research themes and thematic relationships. Third, overlay visualization and density visualization were used to examine thematic evolution, identify emerging research topics, and determine research areas that remain underexplored. To enhance the interpretation of bibliometric findings, the selected articles were also analyzed qualitatively by classifying them according to theoretical frameworks, research methods, determinants of mobile banking adoption, and research contexts. This complementary analysis enabled the identification of research gaps and the formulation of future research directions for mobile banking adoption in developing countries.

RESULTS AND DISCUSSION

This section presents the results of the bibliometric analysis, which include patterns of author collaboration, the evolution of research themes, and the identification of research opportunities and potential future research directions in the field of mobile banking adoption in developing countries.

Table 3. Authors by number of documents and Total Link Strength (TLS)

No	Author	Documents	Total Link Strength (TLS)
1	Suhartanto D.	2	8
2	Sudarsono H.	2	7
3	Kholid M.N.	2	7
4	Trisanty A.	2	7
5	Sebayang T.E.	2	6
6	Hakim D.B.	2	6
7	Bakhtiar T.	2	6
8	Indrawan D.	2	6
9	Hidayat A.	2	4
10	Abdurrahman A.	2	3

Co-authorship analysis shows that several authors play important roles in the mobile banking research network. Suhartanto et al. (2020) emerges as the most influential author, with two publications and the highest Total Link Strength (TLS = 8), indicating strong collaborative ties with other researchers. Sudarsono et al. (2022) also demonstrate substantial collaboration intensity, each achieving a TLS of 7. These findings suggest that mobile banking research in developing countries is characterized by a relatively interconnected academic network, with a small group of authors contributing significantly to the advancement of knowledge in this field.

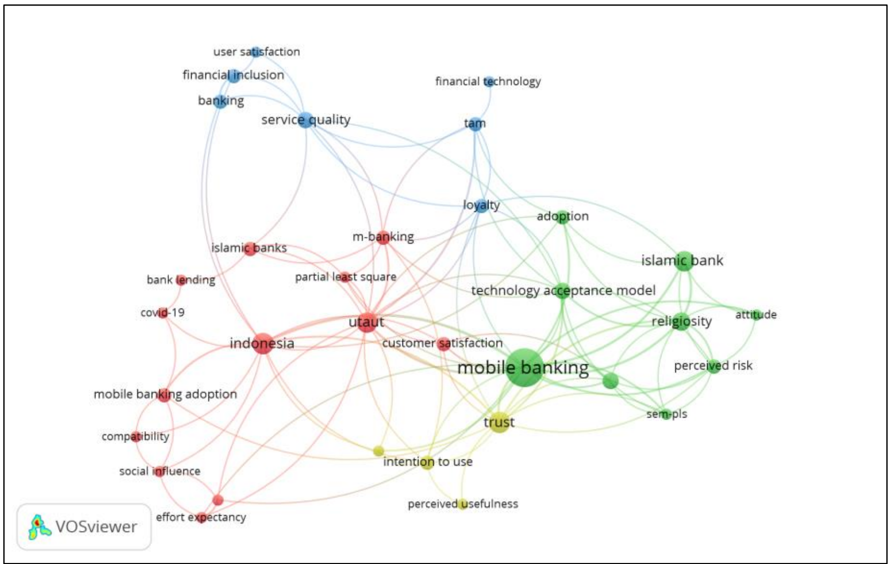

Figure 2. Co-authorship networking analysis

Figure 2 presents a co-occurrence network visualization of keywords generated using VOSviewer, which reveals the main research themes in the mobile banking literature. This analysis identifies four main clusters, with “mobile banking” emerging as a central keyword and serving as the main node connecting various research topics. The first cluster focuses on technology adoption factors, including UTAUT, effort expectations, social influence, compatibility, and mobile banking adoption. The second cluster highlights the Technology Acceptance Model (TAM), perceived risk, religiosity, Islamic banking, and adoption, demonstrating the importance of behavioral and religious factors in digital banking adoption. The third cluster emphasizes trust, intention to use, and perceived usefulness, while the fourth cluster relates to service quality, customer satisfaction, financial inclusion, and banking performance. Overall, these findings indicate that research on mobile banking in developing countries has evolved beyond traditional technology acceptance perspectives and increasingly incorporates issues related to trust, service quality, financial inclusion, and Islamic digital banking, reflecting the growing complexity of the digital financial ecosystem.

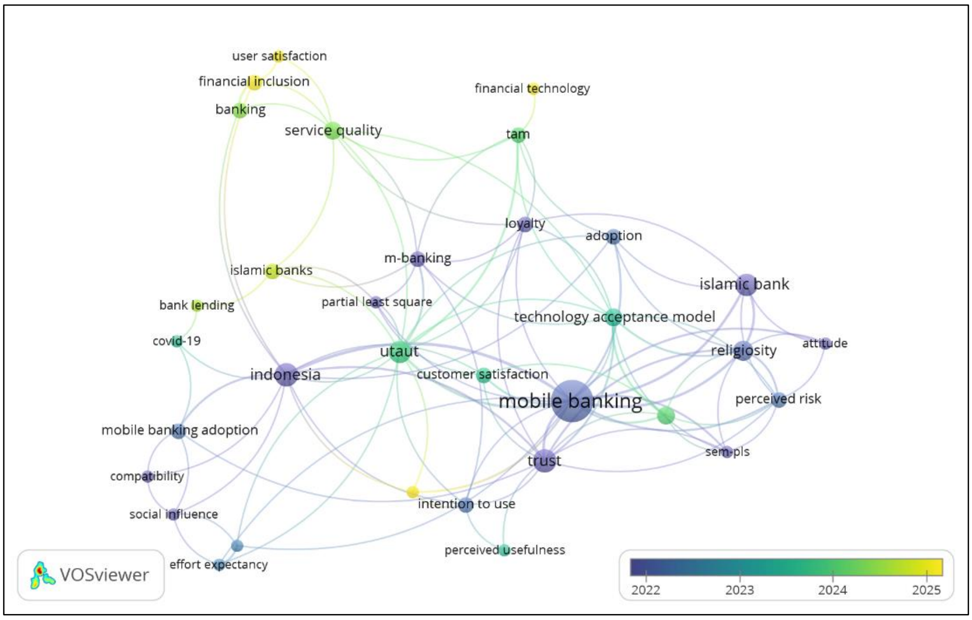

Figure 3. Overlay visualization analysis of co-authorship

The overlay visualization generated using VOSviewer illustrates the temporal evolution of research on mobile banking adoption in developing countries. Mobile banking remains the central research theme and is strongly associated with trust, Technology Acceptance Model (TAM), UTAUT, perceived risk, customer satisfaction, loyalty, religiosity, and Islamic banking. The dominance of these keywords indicates that previous studies have been largely grounded in technology acceptance theories, with primary attention given to understanding the behavioral factors influencing users' intentions to adopt mobile banking. This finding confirms that trust and technology acceptance continue to represent the theoretical core of the mobile banking literature.

The temporal color gradient reveals a clear shift in research priorities. Earlier studies (2022–2023) concentrated on individual adoption determinants such as trust, perceived risk, compatibility, and social influence, whereas more recent studies (2024–2025) increasingly emphasize financial inclusion, service quality, financial technology, banking performance, and customer loyalty. This transition suggests that the literature is moving beyond explaining initial technology adoption toward examining the broader role of mobile banking in digital transformation, customer value creation, and sustainable financial systems. Consequently, future research should integrate traditional acceptance models with broader theoretical perspectives, including digital transformation, service ecosystems, and financial inclusion, to better explain the complexity of mobile banking in developing countries.

Furthermore, the overlay visualization identifies emerging themes that remain relatively underexplored, particularly fintech integration, post-adoption behavior, sustainable digital finance, and long-term customer engagement. These findings demonstrate that the intellectual focus of the field is gradually shifting from technology acceptance toward ecosystem-oriented research. Accordingly, the present review contributes not only by mapping the evolution of research themes but also by highlighting the need for more comprehensive theoretical frameworks that incorporate technological, organizational, institutional, and societal dimensions to explain the continued development of mobile banking in developing countries.

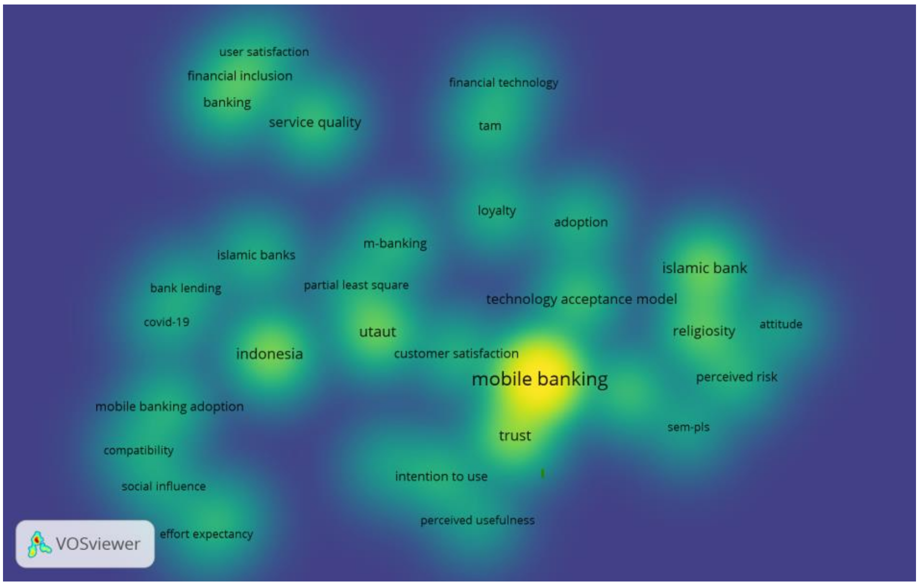

Figure 4. Density visualization analysis

The density visualization indicates that research on mobile banking adoption in developing countries remains strongly concentrated on technology acceptance and user behavior. The dominance of keywords such as *mobile banking*, *trust*, *Technology Acceptance Model (TAM)*, *UTAUT*, *customer satisfaction*, and *adoption* suggests that the field continues to rely heavily on established technology acceptance theories to explain users' behavioral intentions. This pattern reflects the enduring influence of TAM and UTAUT as the primary theoretical foundations for explaining digital banking adoption, particularly in emerging economies where trust, perceived usefulness, and ease of use remain fundamental determinants of technology acceptance (Davis, 1989; Venkatesh et al., 2003). While these frameworks have provided robust explanatory power, their continued dominance also indicates that the literature has largely emphasized individual-level behavioral factors rather than broader organizational and ecosystem perspectives.

The visualization further reveals an emerging shift toward themes such as *financial inclusion*, *service quality*, *financial technology (fintech)*, *loyalty*, *religiosity*, and *Islamic banking*. Rather than representing isolated research topics, these keywords illustrate the gradual evolution of mobile banking research from a technology adoption perspective toward a broader digital financial ecosystem. This transition aligns with recent developments in digital transformation, where mobile banking is increasingly viewed not merely as an information system, but as part of an integrated financial ecosystem involving fintech collaboration, customer experience, regulatory support, and sustainable financial inclusion. The emergence of these themes suggests that future theoretical development should move beyond conventional acceptance models by integrating ecosystem-based perspectives, service innovation, and digital transformation theories.

Conversely, relatively low-density keywords such as *compatibility*, *social influence*, *effort expectancy*, *bank loans*, and *COVID-19* indicate areas that remain comparatively underexplored. The limited attention to these variables does not necessarily imply low importance; instead, it suggests that they have not yet become central themes within the literature. For example, compatibility and social influence are well-established constructs in Diffusion of Innovation and UTAUT theories, yet their interaction with evolving digital ecosystems, artificial intelligence, and personalized financial services remains insufficiently examined. Likewise, studies linking mobile banking adoption with broader financial outcomes, including lending behavior and financial resilience after the COVID-19 pandemic, remain relatively scarce. These findings highlight opportunities for future research to develop more comprehensive conceptual models that integrate technological, organizational, institutional, and societal dimensions.

Overall, the density visualization demonstrates that the literature is transitioning from explaining whether users adopt mobile banking toward understanding how mobile banking contributes to broader digital financial transformation. This finding represents an important theoretical implication of the present review. It suggests that future studies should move beyond conventional technology acceptance frameworks by incorporating perspectives from digital ecosystems, platform economics, financial inclusion, sustainability, and institutional theory. Such an integrated approach would provide a more comprehensive explanation of mobile banking adoption in developing countries, where technological innovation is closely intertwined with socioeconomic development, regulatory environments, and the ongoing digital transformation of financial services.

Table 4. Future Research Opportunities Based on Bibliometric Analysis

Research Theme	Current Status in the Literature	Bibliometric Indication	Novelty Level	Potential Contribution
Digital Financial Capability and Mobile Banking Adoption	Rarely examined in mobile banking studies, particularly in emerging economies	Not identified as a dominant keyword cluster	High	Expands understanding of how digital competencies influence adoption and effective use of mobile banking.
Mobile Banking and Financial Inclusion	Emerging topic with limited empirical integration into adoption models	Appears in overlay and density visualizations with increasing prominence	High	Provides insights into the role of mobile banking in promoting inclusive finance and reducing financial exclusion.
Digital Business Ecosystem and Mobile Banking	Recently introduced and still underexplored	Weak presence in keyword network	High	Develops a broader ecosystem perspective beyond individual technology acceptance.
Customer Loyalty and Continuance Intention	Less studied compared to adoption intention	Loyalty appears but with moderate density	High	Explains long-term usage behavior and customer retention in digital banking.
Fintech Integration and Mobile Banking	Emerging area associated with digital transformation	Financial technology appears in recent overlay visualization	High	Examines synergies between banks and fintech in enhancing customer value and innovation.

Service Quality in Digital Banking Ecosystems	Frequently discussed but rarely integrated with ecosystem and adoption perspectives	Moderate density and connectivity	Medium–High	Provides a comprehensive understanding of customer experience and service performance.
Islamic Mobile Banking and Religiosity	Growing research interest, particularly in Muslim-majority countries	Religiosity and Islamic bank form a distinct cluster	Medium–High	Enriches behavioral and cultural perspectives in digital banking adoption.
Trust, Security, and Cyber Risk	Well-established topic but evolving with digital threats	High-density keywords in the network	Medium	Updates existing theories by incorporating cybersecurity and digital trust issues.
Mobile Banking Adoption among MSMEs	Limited attention compared to retail banking customers	Not prominent in keyword mapping	High	Supports digital financial inclusion and business sustainability among MSMEs.
Mobile Banking and Sustainable Development Goals (SDGs)	Very limited discussion in current literature	Absent from major clusters	Very High	Links mobile banking adoption to sustainability, economic development, and social impact agendas.

Based on the findings from the co-occurrence, overlay, and density analyses using VOSviewer, the literature on mobile banking adoption in developing countries remains centered on themes such as mobile banking, trust, adoption, the Technology Acceptance Model (TAM), UTAUT, customer satisfaction, and perceived risk. The co-occurrence network demonstrates that these concepts form the intellectual core of the field, while the density visualization confirms their high frequency and strong interconnections. This indicates that technology acceptance theories continue to dominate explanations of mobile banking adoption, emphasizing users' behavioral intentions and perceptions as the primary determinants of adoption decisions.

Compared with previous bibliometric reviews, the present findings reveal a broader evolution of the research landscape. Cherian et al. (2025) reported that mobile banking research had begun shifting from financial inclusion and technology adoption toward fintech, trust, digital transformation, and user experience. The current review extends these findings by showing that recent studies increasingly incorporate service quality, customer loyalty, banking performance, and digital financial ecosystems as interconnected research themes. This suggests that the literature is progressing beyond identifying adoption determinants toward understanding the strategic role of mobile banking in supporting digital banking transformation and sustainable financial development, particularly in developing countries.

The overlay visualization further demonstrates that emerging themes, including financial inclusion, fintech integration, service quality, customer loyalty, and digital banking ecosystems, remain less interconnected than traditional adoption constructs, indicating substantial opportunities for future investigation. Rather than treating these topics independently, future studies should integrate technology acceptance theories with broader perspectives on digital transformation, service ecosystems, and sustainable finance. This review therefore contributes by not only confirming the thematic evolution identified in earlier bibliometric studies but also highlighting a continuing shift toward ecosystem-oriented research, providing a more comprehensive agenda for future investigations into mobile banking adoption in developing countries.

CONCLUSION

This study conducted a systematic review of the literature on mobile banking adoption in developing countries using the PRISMA 2020 framework and bibliometric analysis with VOSviewer. The findings show that mobile banking is a dominant research theme, closely linked to trust, adoption, customer satisfaction, the Technology Acceptance Model (TAM), UTAUT, and perceived risk, highlighting the importance of technology acceptance and behavioral factors in explaining adoption decisions. Further bibliometric results reveal the evolution of research themes from traditional adoption-focused studies to broader topics such as financial inclusion, service quality, fintech, loyalty, Islamic digital banking, and digital transformation. These findings suggest that future research should go beyond the conventional technology acceptance model and adopt a more integrative perspective that combines the digital ecosystem, customer value creation, financial inclusion, and sustainable digital banking development in developing countries

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