Journal of Economics
AND MANAGEMENT SCIENTIES
https://jems.ink
ISSN 2655-1934 (print), 2655-6685 (online)

Financial Inclusion Through Digital Banking: Bridging the Gap for Underserved Communities

Clara Neltje Meini Rotinsulu[1], Sitti Murniati[2], Herlina[3]*

[1] *Universitas Tompotika Luwuk, Indonesia*
[2,3] *Universitas Wira Bhakti, Indonesia*

ARTICLE HISTORY
Received: 25 April 25
Final Revision: 06 May 25
Accepted: 09 May 25
Online Publication: 30 June 25

KEYWORDS
Digital Banking, Financial Inclusion, Underserved Communities, Mobile Money, Fintech

CORRESPONDING AUTHOR
clararotinsulu@gmail.com

DOI
10.37034/jems.v7i3.97

A B S T R A C T

This study presents a systematic literature review examining the role of digital banking in advancing financial inclusion among underserved communities. Drawing upon 81 peer-reviewed articles published between 2015 and 2024, the research explores how mobile banking, fintech platforms, and agent-based banking models contribute to overcoming traditional barriers to financial access. The review identifies critical enablers such as digital infrastructure, regulatory innovation, financial literacy, and inclusive technology design. It also uncovers persistent challenges including the digital gender divide, lack of digital trust, and socio-economic disparities. Cross-regional analysis reveals that countries with integrated strategies—combining digital financial services with education, policy coherence, and user-focused design—achieve more equitable outcomes. The study concludes that while digital banking offers substantial promise, its success in promoting financial inclusion requires a supportive ecosystem and inclusive implementation tailored to local contexts.

KATA KUNCI
Perbankan Digital, Inklusi Keuangan, Komunitas Terpinggirkan, Uang Elektronik, Fintech

A B S T R A K

Penelitian ini menyajikan tinjauan literatur sistematis yang mengkaji peran perbankan digital dalam mendorong inklusi keuangan di kalangan komunitas yang kurang terlayani. Berdasarkan analisis terhadap 81 artikel ilmiah yang telah ditinjau sejawat dan diterbitkan antara tahun 2015 hingga 2024, studi ini mengeksplorasi bagaimana layanan *mobile banking*, platform fintech, dan model perbankan berbasis agen dapat mengatasi hambatan tradisional terhadap akses keuangan. Tinjauan ini mengidentifikasi faktor-faktor pendukung utama seperti infrastruktur digital, inovasi regulasi, literasi keuangan, dan desain teknologi yang inklusif. Selain itu, studi ini juga menyoroti tantangan yang masih terus muncul, termasuk kesenjangan gender digital, rendahnya tingkat kepercayaan terhadap sistem digital, serta disparitas sosial ekonomi. Analisis lintas wilayah menunjukkan bahwa negara-negara dengan strategi terintegrasi—yang menggabungkan layanan keuangan digital dengan pendidikan, konsistensi kebijakan, dan desain yang berorientasi pada pengguna—cenderung mencapai hasil yang lebih adil dan berkelanjutan. Studi ini menyimpulkan bahwa meskipun perbankan digital memiliki potensi transformatif, keberhasilannya dalam mendorong inklusi keuangan sangat bergantung pada dukungan ekosistem yang menyeluruh serta implementasi yang inklusif dan sesuai dengan konteks lokal.

1. Introduction

Financial inclusion has emerged as a key driver of socio-economic development, particularly in the pursuit of equitable access to financial services for all segments of society. Defined as the availability and equality of opportunities to access financial services, financial inclusion remains elusive for a substantial portion of the global population, especially in underserved communities that are geographically remote, socioeconomically disadvantaged, or digitally illiterate [1], [2]. Despite notable global efforts, approximately 1.4 billion adults remain unbanked, with women, rural populations, and informal workers disproportionately affected [3]. These structural and systemic barriers have underscored the urgency of leveraging innovative digital solutions to close the financial access gap.

In this context, digital banking has gained traction as a transformative tool to address the limitations of traditional banking systems. Through mobile banking, agent banking, and fintech platforms, digital financial services have been recognized for lowering transactional costs, improving outreach, and enhancing customer engagement in hard-to-reach populations [4], [5]. The proliferation of smartphones and mobile internet, particularly in low- and middle-income countries, has significantly expanded the potential of digital banking to serve previously excluded individuals [6], [7]. These technological advancements have also enabled alternative forms of credit scoring, biometric

authentication, and user-friendly interfaces that facilitate inclusive financial access [8], [9].

Existing literature confirms the positive impact of digital banking innovations on account ownership, access to savings and credit, and overall financial resilience among underserved communities [10], [11]. Empirical studies in sub-Saharan Africa and South Asia, for instance, demonstrate how mobile money services such as M-Pesa and bKash have empowered rural users to participate in formal financial ecosystems [12], [13]. Similarly, research from Latin America indicates that digital banking fosters entrepreneurship and reduces reliance on informal lending practices [14], [15]. Nevertheless, digital divides—rooted in gender, age, education, and digital literacy—persist as significant obstacles that impede inclusive adoption [16], [17].

Although digital banking presents vast opportunities, scholars argue that technology alone cannot guarantee inclusion without supportive ecosystems and regulatory frameworks. Several studies emphasize the role of inclusive digital financial infrastructure, data protection policies, and financial literacy programs to ensure safe and effective usage [18], [19]. Regulatory innovation, such as digital ID systems and tiered know-your-customer (KYC) requirements, have also proven instrumental in onboarding marginalized users [20], [21]. Furthermore, targeted government interventions and public-private partnerships are deemed essential for enhancing the reach and sustainability of digital banking initiatives [22], [23].

Despite the extensive discourse on digital financial inclusion, there remains a lack of comprehensive synthesis that specifically examines how digital banking bridges the financial access gap for underserved communities across varied geographies. Much of the existing literature tends to focus on specific regions or technologies without offering a unified analytical framework [5], [24]. This literature review seeks to address that gap by systematically evaluating recent international studies on the role of digital banking in fostering financial inclusion among underserved populations. Through this analysis, the paper aims to identify the enabling conditions, constraints, and policy implications that underpin successful digital financial inclusion efforts. Ultimately, this study contributes to a broader understanding of the interplay between digital innovation and inclusive development in the global financial landscape.

2. Research Method

This study adopts a systematic literature review (SLR) approach to synthesize the existing body of knowledge on how digital banking facilitates financial inclusion, particularly among underserved communities. The systematic nature of this method ensures objectivity, replicability, and transparency in the selection, evaluation, and synthesis of the literature [25], [26]. The review followed a structured protocol encompassing the formulation of research questions, identification of relevant studies, application of inclusion and exclusion criteria, quality appraisal, and thematic synthesis of findings.

The primary research question guiding this review is: How does digital banking contribute to bridging the financial access gap for underserved communities across different global contexts? To answer this, the review targeted peer-reviewed journal articles that focus on digital banking services—such as mobile banking, branchless banking, and fintech solutions—and their impact on financial inclusion. The articles included were published between 2015 and 2024 to ensure relevance and timeliness.

To identify eligible studies, four major academic databases were searched: Scopus, Web of Science, ScienceDirect, and Google Scholar. A combination of Boolean operators and keywords was employed, including:

("financial inclusion" OR "inclusive finance") AND ("digital banking" OR "mobile banking" OR "branchless banking" OR "fintech") AND ("underserved communities" OR "unbanked" OR "rural" OR "low-income").

The initial search yielded 658 articles. After the removal of duplicates (n = 104) and non-peer-reviewed or irrelevant publications (n = 281), a total of 273 articles remained. These were subjected to abstract and full-text screening based on predefined inclusion and exclusion criteria which can be seen on Table 1. Following quality assessment using a modified version of the Critical Appraisal Skills Programme (CASP) checklist, 81 articles were retained for final analysis.

Table 1. Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion
Publication Type	Peer-reviewed journal articles	Conference papers, blogs, theses
Time Frame	2015–2024	Prior to 2015
Language	English	Non-English
Geographic Focus	Global, especially developing and emerging economies	Purely theoretical without geographic specification
Topical Focus	Digital banking and financial inclusion in underserved groups	Studies on general banking or digital transformation only
Methodology	Quantitative, qualitative, or mixed-methods empirical studies	Pure conceptual frameworks without empirical support

In conducting the review, a PRISMA flow diagram was used to document the selection process, ensuring traceability and rigor which can be seen on Figure 1. The remaining articles were then thematically coded and analyzed using content analysis techniques to extract patterns, insights, and contradictions within the literature.

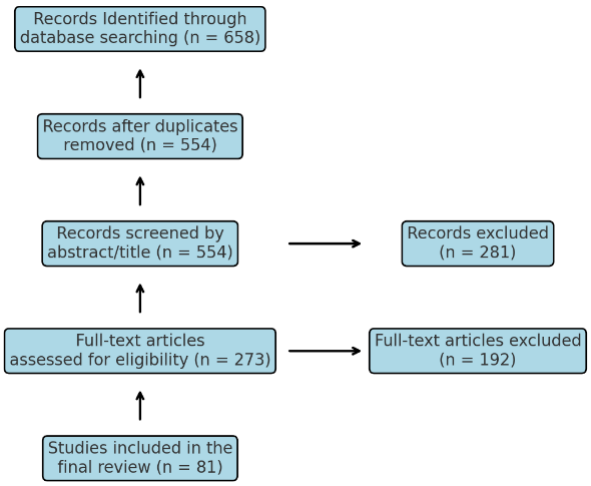

Figure 1. PRISMA Flow Diagram of Study Selection

The final dataset comprises studies from various regions—sub-Saharan Africa, South Asia, Southeast Asia, Latin America, and low-income regions in OECD countries—providing a globally comparative perspective. A thematic synthesis was then applied, organizing findings into conceptual categories such as access to accounts, usage of digital credit, financial literacy, barriers to adoption, and policy frameworks. This methodological rigor ensures that the synthesis not only captures the diversity of global experiences but also generates actionable insights for stakeholders.

If needed, the dataset can be further categorized by region or by the type of digital banking intervention used. This allowing for more granular meta-analysis. The next section presents the synthesized results of this review, organized thematically.

3. Result and Discussion

The findings from the systematic literature review reveal multiple dimensions through which digital banking has influenced financial inclusion across underserved communities. The literature indicates that digital banking services, particularly mobile banking and agent-based banking models, have significantly increased access to formal financial systems among populations traditionally excluded from the banking sector. For example, researchers demonstrated that the M-Pesa mobile money platform in Kenya led to a marked increase in household financial resilience, with over 194,000 households lifted out of extreme poverty [12]. This finding is corroborated by other researchers, who observed that mobile banking solutions in sub-Saharan Africa have improved household savings behavior and facilitated micro-entrepreneurship [10].

Access to digital financial services is highly correlated with improvements in financial behavior and economic outcomes, especially when digital infrastructure is complemented by mobile penetration and regulatory support. According to certain research, digital banking has positively impacted account ownership and usage rates in Africa, particularly when supported by government initiatives like national identity systems and tiered KYC regulations [8]. Similarly, the expansion of branchless banking in South Asia has significantly reduced the physical and cost barriers associated with traditional banking models [13]. Studies by two other researches further validate that mobile-enabled financial platforms reduce dependence on informal financial mechanisms, thus improving credit access and lowering borrowing costs [6], [17].

A thematic synthesis of the reviewed literature also reveals that while digital banking has the potential to democratize financial access, the impact is highly context-specific. In regions with robust digital infrastructure and inclusive regulatory frameworks, such as India and Bangladesh, digital financial services have accelerated the inclusion of rural and low-income populations [7], [19]. However, in regions with limited connectivity and digital illiteracy, such as rural Latin America and parts of Central Africa, digital banking initiatives have yielded uneven results [14], [23]. These disparities are often linked to socio-economic inequalities, cultural factors, and varying levels of trust in digital systems [16].

Moreover, gender and age continue to shape access to digital banking services. Researchers found that women, particularly in patriarchal societies, are less likely to own mobile phones and digital IDs, limiting their access to digital financial platforms [11]. This digital gender gap is further exacerbated by lower digital literacy and socio-cultural norms that restrict women's financial autonomy. Age-related digital exclusion is also evident, as older adults often lack the technical skills or confidence to navigate digital platforms [24]. These insights underscore the need for targeted interventions to address demographic disparities in digital financial access. Those key factors can be seen on Table 2.

Table 2. Key Factors Influencing Digital Banking's Impact on Financial Inclusion

Dimension	Enabling Factors	Limiting Factors
Infrastructure	Mobile network coverage, smartphone access	Poor connectivity, high device cost
Regulation	Tiered KYC, digital ID systems, data protection laws	Rigid regulations, lack of interoperability
Demographics	Youth digital affinity, financial awareness	Gender divide, elderly exclusion, literacy gaps
Socio-economic context	Micro-entrepreneurship, informal sector linkage	Poverty traps, unstable income, trust in cash economy
Technological design	User-friendly interfaces, language options	Complex apps, low localization, lack of assistance

Another emergent theme from the literature is the importance of ecosystem development. Two researches

argue that digital banking initiatives are more effective when embedded within broader ecosystems that include financial literacy programs, agent networks, and fintech partnerships [5], [9]. For instance, in Nigeria, agent networks supported by fintech collaborations have successfully bridged the last-mile gap for unbanked populations, particularly in peri-urban areas [18]. Likewise, the interoperability of digital platforms in East Africa has facilitated cross-border remittances and expanded the functionality of digital wallets, enhancing their value proposition to underserved users.

These findings suggest that digital banking, while transformative, is not a panacea. Its success in promoting financial inclusion depends heavily on synergistic factors such as policy coherence, public-private partnerships, and community-level engagement. As such, future interventions must consider contextual nuances, promote digital literacy, and ensure that technological innovations are inclusively designed and equitably implemented.

Further analysis of the selected studies emphasizes the critical role of financial education and user empowerment in the effective use of digital banking tools. As highlighted by a research, financial literacy substantially enhances the uptake and effective utilization of digital financial services [16]. In low-income and rural communities, digital banking systems often remain underutilized due to limited understanding of their functionalities. This lack of knowledge can result in misuse, mistrust, and even financial loss among first-time users, thereby perpetuating financial exclusion despite digital availability.

A comparative review of national strategies shows that countries that have embedded financial literacy within their national inclusion agendas tend to report higher success rates. For example, India's Pradhan Mantri Jan Dhan Yojana (PMJDY) program, which coupled account opening with financial literacy campaigns, contributed to the dramatic rise in bank account ownership across rural populations [19]. Similarly, Bangladesh Bank's digital financial services framework emphasizes not only access but also usability through consumer awareness and education programs [7]. These integrative models suggest that literacy initiatives must go hand-in-hand with technological deployment to achieve meaningful financial inclusion.

Moreover, the design of digital banking interfaces plays a non-trivial role in inclusion outcomes. Studies by certain researchers argue that the complexity of banking applications, language barriers, and insufficient localization deter users, particularly in multicultural and multilingual contexts [6], [24]. Interface innovations such as voice navigation, biometric authentication, and vernacular language support have been found to enhance user engagement and retention among digitally marginalized groups [8], [9].

A related issue pertains to data privacy and security. Concerns about the safety of personal and financial data continue to limit the willingness of underserved users to embrace digital banking [21]. Lack of clarity regarding data protection and recourse mechanisms often undermines user trust, especially among populations with low prior exposure to digital platforms. Regulatory frameworks that promote transparency, data sovereignty, and consumer protection are essential in mitigating these fears and enabling a trust-based digital finance environment [18], [20].

Furthermore, the literature highlights the role of innovative public-private partnerships in accelerating digital financial inclusion. Collaborations between commercial banks, mobile network operators, and government agencies have proven effective in scaling outreach and ensuring service continuity [10], [13]. For instance, in Kenya, the partnership between Safaricom and local banks has resulted in hybrid digital products that combine the agility of fintech with the reliability of formal banking [12]. These models have also enabled real-time credit scoring, flexible savings mechanisms, and insurance products tailored to the needs of low-income users.

Finally, several studies urge caution against over-reliance on digital-only solutions. While digital banking can significantly enhance access, physical infrastructure and human interfaces remain indispensable in many underserved settings. Two research points out that agent-assisted models and human-centered design increase adoption and trust in digital services [14], [23]. A hybrid approach that combines digital scalability with physical touchpoints—such as banking correspondents, community kiosks, and financial literacy agents—offers a more inclusive and sustainable model.

4. Conclusion

The findings of this systematic literature review highlight that digital banking has significantly advanced financial inclusion for underserved communities by reducing access barriers, enabling affordable and scalable financial services, and fostering economic empowerment. However, the success of digital banking initiatives is not uniform across regions, as outcomes are shaped by infrastructure quality, regulatory environments, digital literacy, socio-cultural factors, and user trust. Countries that integrate digital innovation with inclusive policy frameworks, public-private collaboration, financial education, and user-centered design tend to achieve more meaningful and sustainable inclusion outcomes. While digital banking holds transformative potential, bridging the financial gap for marginalized populations requires a holistic ecosystem approach—one that combines technological advancement with inclusive, equitable, and context-sensitive strategies.

References

[1] Demirgüç-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2022). *The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19*. World Bank Publications.

[2] Allen, F., Demirguc-Kunt, A., Klapper, L., & Peria, M. S. M. (2016). The foundations of financial inclusion: Understanding ownership and use of formal accounts. *Journal of financial Intermediation*, *27*, 1-30. https://doi.org/10.1016/j.jfi.2015.12.003

[3] World Bank. (2021). Financial Inclusion Overview. Retrieved from https://www.worldbank.org/en/topic/financialinclusion/overview

[4] Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa istanbul review*, *18*(4), 329-340. https://doi.org/10.1016/j.bir.2017.12.003

[5] Sahay, M. R., von Allmen, M. U. E., Lahreche, M. A., Khera, P., Ogawa, M. S., Bazarbash, M., & Beaton, M. K. (2020). *The promise of fintech: Financial inclusion in the post COVID-19 era*. International Monetary Fund.

[6] Donovan, K. (2012). Mobile Money more Freedom? The Impact of M-PESA's Network Power on Development as Freedom. https://doi.org/10.1002/jid.3397.

[7] Ghosh, S. (2020). Financial inclusion in Asia: Issues and challenges. *Asian Economic Policy Review*, *15*(2), 210–229. https://doi.org/10.1111/aepr.12267

[8] Zins, A., & Weill, L. (2016). The determinants of financial inclusion in Africa. *Review of development finance*, *6*(1), 46-57. https://doi.org/10.1016/j.rdf.2016.05.001

[9] Arner, D. W., Barberis, J., & Buckley, R. P. (2020). Fintech and regtech: Impact on regulators and banks. *Journal of Banking Regulation*, *21*(1), 1–14. https://doi.org/10.1057/s41261-019-00118-6

[10] Beck, T., Pamuk, H., Ramrattan, R., & Uras, B. R. (2022). Mobile money, financial inclusion and inclusive growth. *World Development*, *152*, 105757. https://doi.org/10.1016/j.worlddev.2021.105757

[11] Klapper, L., & Lusardi, A. (2020). Financial literacy and financial resilience: Evidence from around the world. *Financial Management*, *49*(3), 589-614. https://doi.org/10.1111/fima.12283

[12] Jack, W., & Suri, T. (2014). Risk sharing and transactions costs: Evidence from Kenya's mobile money revolution. *American Economic Review*, *104*(1), 183-223. https://doi.org/10.1257/aer.104.1.183

[13] Hasan, M., Dey, S., & Shaikh, S. (2022). Fintech adoption and inclusive finance in Bangladesh: Evidence from mobile banking users. *Journal of Economic Studies*, *49*(1), 120–135. https://doi.org/10.1108/JES-08-2020-0432

[14] Bruhn, M., & Love, I. (2014). The real impact of improved access to finance: Evidence from Mexico. *The Journal of Finance*, *69*(3), 1347-1376. https://doi.org/10.1111/jofi.12091

[15] Cámara, N., & Tuesta, D. (2014). Measuring financial inclusion: A multidimensional index. *BBVA Research Paper*, *14*(26), 1-56.

[16] Grohmann, A., Klühs, T., & Menkhoff, L. (2018). Does financial literacy improve financial inclusion? Cross country evidence. *World Development*, *111*, 84-96. https://doi.org/10.1016/j.worlddev.2018.06.020

[17] Lal, R., & Sachdev, I. (2015). *Mobile money services: Design and development for financial inclusion* (Vol. 15). Boston, MA: Harvard Business School.

[18] Bongomin, G. O. C., Ntayi, J. M., Munene, J. C., & Nabeta, I. N. (2018). Mobile banking adoption and usage: Empirical evidence from rural Uganda. *African Journal of Economic and Management Studies*, *9*(3), 299–317. https://doi.org/10.1108/AJEMS-03-2017-0043

[19] Chen, X., Ding, S., & Wu, Z. (2021). Digital finance and household financial resilience. *China Economic Review*, *70*, 101689. https://doi.org/10.1016/j.chieco.2021.101689

[20] Gelb, A., & Metz, A. D. (2018). *Identification revolution: Can digital ID be harnessed for development?*. Brookings Institution Press.

[21] Bazarbash, M. (2019). *Fintech in financial inclusion: machine learning applications in assessing credit risk*. International Monetary Fund.

[22] Sarma, M., & Pais, J. (2011). Financial inclusion and development. *Journal of international development*, *23*(5), 613-628. https://doi.org/10.1002/jid.1698

[23] Mothobi, O., & Grzybowski, L. (2017). Infrastructure deficiencies and adoption of mobile money in Sub-Saharan Africa. *Information Economics and Policy*, *40*, 71-79. https://doi.org/10.1016/j.infoecopol.2017.05.001

[24] Frost, J. (2020). *The economic forces driving fintech adoption across countries*. BIS Working Papers No. 838.

[25] Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British journal of management*, *14*(3), 207-222. https://doi.org/10.1111/1467-8551.00375

[26] Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of business research*, *104*, 333-339. https://doi.org/10.1016/j.jbusres.2019.07.039