

Advancing Digital Financial Inclusion in Nigeria: A Systematic Literature Review of Opportunities, Risks and Digital Trust

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Abstract- *Digital financial services have a critical role in the financial inclusion agenda of Nigeria as they provide alternatives to the branch network for remittances, payments, savings, and credit account services through digital channels. The research includes systematic literature reviews of the determinants related to digital financial inclusion development in Nigeria, with the main focus on enabling technologies, adoption barriers, digital trust, and policy, institutional, and technical responses. The review process was based on the PRISMA 2020 principles and an adapted Waterfall workflow. Overall, 503 records were identified, 129 duplicates were taken out, 374 records were screened, 123 full-text articles were determined, and 55 peer-reviewed journals published from the period 2020 to 2026 were used for the descriptive and thematic synthesis. Thirty-seven papers, representing 67.3%, were published between the years of 2022 and 2025. The thematic profile consisted of digital finance, mobile money, and fintech (30.9%); financial inclusion and development (23.6%); adoption and user behaviour (18.2%); trust, risk, and cybersecurity (18.2%); and policy, regulation, and consumer protection (9.1%). Through strong evidence, mobile money, USSD, agent banking, POS networks, digital ID, interoperable payments, fintech wallets, and digital savings and credit were defined as the main channels to financial inclusion. Their merits are undermined by fraud, failed transactions, privacy concerns, weak redress, infrastructure constraints, low financial and digital literacy, and exclusionary design. Digital trust was the found mechanism for the access path to shift into sustained use. Furthermore, it was emphasized that the increase in digital financial inclusion in Nigeria necessitates that innovation is complemented with cybersecurity, consumer protection, resilient infrastructure, inclusive design, literacy, effective redress, and institutional accountability.*

Index Terms- *Digital financial inclusion, fintech, digital trust, cybersecurity, Nigeria, systematic literature review.*

I. INTRODUCTION

Financial inclusion refers to the ability to access and continuously use affordable, appropriate, and reliable payment, saving, credit, insurance, and remittance services. Digital financial inclusion is an example of these services delivered via devices such as mobile phones, agent devices, point-of-sale terminals, digital wallets, internet platforms, and related financial technologies. According to a review of the recent literature, the topic has been so widely discussed that it now involves multiple disciplines, including development, banking, information systems, technology adoption, cybersecurity, consumer protection, and digital trust [1]-[55]. The significance of inclusion is in its power to promote household resilience, income stabilization, more business activities, and participation in the formal economy. However, access is just one of the facets. A person might have a bank account or an E-wallet but can still be excluded from the services when it is inactive, high cost, unreliable, inconvenient, or not suitable for daily use [1], [6], [9]. Access, use, service quality and benefits are the important parts of meaningful inclusion. Nigeria has increased financial inclusion through various initiatives, such as the banking structure reform, microfinance, mobile payments, payment service banks, cashless initiatives, agent banking and digital identity. The ease of access to mobile money, USSD, POS networks, fintech wallets, digital lending and interoperable payments have made the physical branch of bank less relevant and increased users in very many financial institutions offering their services [3]-[5], [19]. Nationally announced policy and reports on access have shown that outcomes are not even distributed by

location, income, gender, device access and literacy [56], [57]. The same technologies, which are responsible for the decreased distance and changing transaction friction, are also the source of new risky areas. Fraud, phishing, SIM-swap attacks, fake agents, unauthorized transfers, data misuse, failed transactions, hidden costs, and abusive lending can all work to erode trust. Poor connectivity, power cuts, lack of digital literacies, and inadequate complaint handling are the main hindrances to the implementation of the projects or they compel users back to cash [4], [25], [39], [48], [51]. The data on digital fraud have shown industry orientation to security and remedy as an inclusion issue but not as separate technology issues which highlight the exposure of firm-wide only dealing with digital fraud [58]. The body of literature is plentiful but scattered. Some articles deal with mobile money or digital payments, others with infrastructure risk, adoption, cybersecurity or consumer protection, while only a few Nigerian syntheses examine them together. This fragmentation leads to an inability to justify how digital opportunities can be turned into an enduring inclusion or the reason for users to discontinue the services that are technologically available. The present classification manages to cover the gap by merging digital technologies, obstacles, trust conditions, and response strategies in a singular analytical frame. The aim was to critically review and summarize the literature on the factors responsible for the growth of digital financial inclusion in Nigeria. The study was guided by four questions: (1) Which digital financial technologies and delivery channels are facilitating inclusion? (2) What technical, infrastructural, socioeconomic and regulatory barriers affect the uptake and sustainability of these technologies? (3) In what ways do digital trust, security, privacy, reliability, and consumer protection influence the adoption and staying use? and (4) What policy, institutional and technological pathways are needed for the secure, socially inclusive, and sustainable digital financial inclusion?

II. LITERATURE REVIEW

A. Digital Financial Inclusion and Enabling Technologies

Digital financial inclusion is a multidimensional outcome. Account ownership and service availability are important, but the literature increasingly evaluates affordability, frequency of use, reliability, safety, relevance and welfare effects [1], [6], [16], [24]. This broader interpretation is particularly important in Nigeria, where formal registration may coexist with continued dependence on cash. The reviewed literature identifies mobile money, mobile banking, USSD, agent banking, POS networks, digital wallets, digital identity, digital lending and interoperable payments as the principal technology-enabled channels. Mobile and agent-based models extend services beyond branches, while USSD supports basic-phone and low-data users. Digital identity and KYC can facilitate onboarding and risk control, although documentation and verification requirements may also exclude vulnerable users. Interoperability can widen merchant and user choice, whereas digital savings and credit may support households and MSMEs when pricing, scoring and recovery practices are transparent [3], [19]-[27], [36], [40].

B. Adoption, Risk and Digital Trust

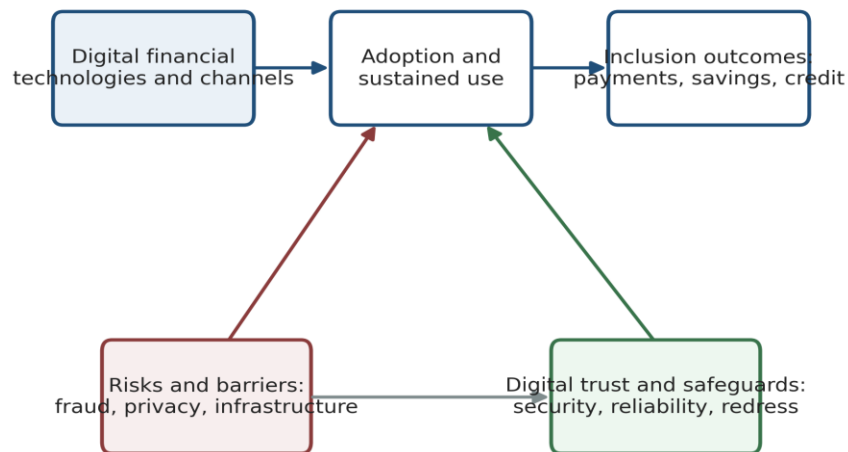
The review is structured around three theoretical perspectives. The Technology Acceptance Model describes how perceived usefulness and ease of use impact the adoption process [59]. Diffusion of Innovation Theory addresses the factors like relative advantage, compatibility, simplicity, trialability, and visibility that impact the distribution of digital services through agents, peers, and communities [60]. The institutional-based trust has a lot to do with the issues such as regulation, provider competence, user authentication, data security, and dispute resolution that instill the users with a sense of structural assurance [61]. These insights show that the process of adoption involves not only technology but also factors from social and institutional areas. In this context, the term digital trust refers to the belief that the service would function correctly as per the terms laid out, protect the money and personal data, and provide clear terms and conditions, and apart from

this, the service should also show fairness during the failures. Trust can be thought of specifically in relation to the platform, provider, agent, regulator or on other levels such as the wider ecosystem. Along with these, the elements like security, reliability, transparency, human support and visible oversight not just affect the launching of the idea but also the persistency of the use in the future [25], [30], [32], [46], [54].

C. Research Gap and Conceptual Position

Integration of opportunity, risk, and trust is very limited in Nigeria-focused studies that only review.

Access studies may, with their emphasis on inactivity and poor service quality, make research appear easier to complete; studies on cybersecurity may not consider that the technical problems are the causes of the exclusion, and adoption studies may miss out on the very complaint reports that the institution would have crystalized its protection through. Thus, the perspective this review takes on digital opportunities is very much a view of them as paths into the system, risks as circumstances that can hinder adoption, while digital trust and policy safeguards are seen as the tools that enable continued use and inclusion.



Core proposition: digital access becomes inclusion only when use is trusted, protected and sustainable.

Figure 1: Conceptual Framework for Advancing Digital Financial Inclusion in Nigeria (Source: Authors' synthesis of the reviewed literature, 2026).

Logic has been developed like figure 1. Digital technologies are able to create both access and perceived value. However, adoption and active use are positively or negatively affected by the barriers, trust, and safeguards. Thus, sustained inclusion of digital technologies is not just the result of their availability.

III. METHODOLOGY

A. Review Design and Protocol

The research team employed a systematic literature review approach due to its goal of assessing and merging the available existing literature and not the intention of gathering new primary data. PRISMA 2020 standards oversaw the honest documentation of identification, screening, eligibility and inclusion [62]. The activities were organized in a sequential manner using a modified Waterfall workflow: determining the review focus, designing

the protocol, searching records and de-duplication, screening and appraising studies, extracting data, synthesizing findings and reporting outcomes.

B. Information Sources, Search Strategy and Eligibility

In academic databases like Google Scholar, ScienceDirect, SpringerLink, Taylor & Francis Online, Wiley Online Library, Emerald, MDPI, and other similar portals, a full set of searches has been carried out. Finance-related themes were

interconnected with terms such as digital finance, fintech, mobile money, mobile banking, USSD, Nigeria, Sub-Saharan Africa, digital trust, cybersecurity, fraud, privacy, consumer protection and technology adoption. Interest generated in the topics was through the use of Boolean operators to build them. Table 1: Review Protocol and Eligibility Criteria.

Element	Specification
Publication window	Peer-reviewed papers published from 2020 to 2026.
Subject focus	Digital financial inclusion, fintech, mobile money, digital payments, adoption, risk, trust, privacy, cybersecurity or consumer protection.
Geographic relevance	Nigeria; Sub-Saharan Africa or developing-economy evidence transferable to Nigeria.
Language and access	English-language publications with accessible full text and traceable bibliographic details.
Excluded material	Blogs, newspapers, marketing materials, unverifiable papers, unrelated studies and records with unclear methods or weak evidential fit.
Contextual sources	Official CBN, EFInA and NIBSS reports were used for background but were not counted among the 55 reviewed papers.

A total of scholarly publications that were reviewed were taken up in the sample. In keeping with the purposive retention, the de-duplication, title and abstract screening, full-text assessment, and quality appraisal felt. In the final sample were included 55 peer-reviewed papers; foundational theoretical sources and official reports were excluded from the core count.

C. Study Selection, Quality Appraisal and Extraction

In the process of identification, 503 records were available. Of these, after the duplicates were removed (129), only 374 titles and abstracts were screened, the rest which amounted to 251 were excluded. Next, the left 123 full texts were reviewed of which 68 could not be included due to the lack of relevance, applicability, or poor quality, consequently, 55 items remained. Each accepted document was evaluated on

the bases of relevance, methodological clarity, contextual value, contribution to the understanding of trust and risk, stated limitations and traceability.

Table 2: PRISMA Selection Summary

Selection stage	N
Records identified	503
Duplicates removed	129
Records screened	374
Records excluded	251
Full texts assessed	123
Full texts excluded	68
Studies included	55

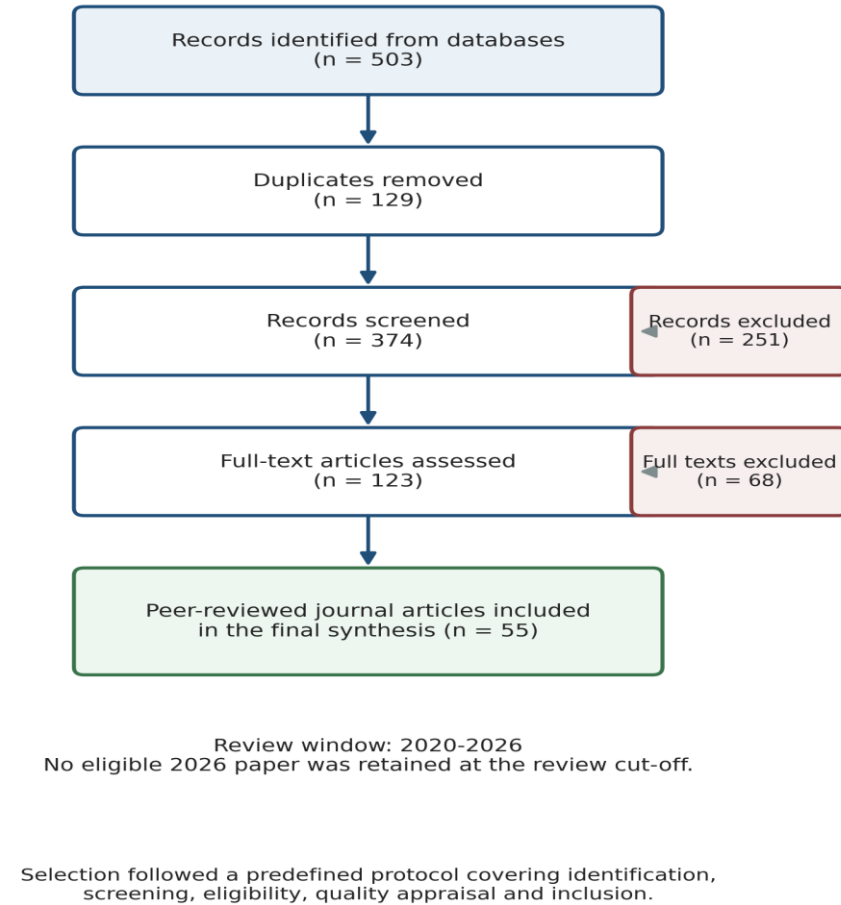


Figure 2: PRISMA 2020 Flow Summary for Study Selection (Source: Authors' review record, 2026).

In this case, an organized extraction matrix was used to obtain the essential information which comprised author, year, publication outlet, context, study design, principal theme, key finding, limitation, and relevance to the research questions. A descriptive synthesis was employed for the summary of the evidence according to the publication year and the subject. Thematic synthesis was utilized to categorize the results into technologies and opportunities, risks and barriers, digital trust, and policy, institutional and technological responses. The meta-analysis was not conducted due to the significantly different context, design, variables, and measures of the included studies.

IV. RESULTS AND DISCUSSION

A. Profile of the Evidence Base

During the period of 2020 to 2026, all the 55 core papers were eligible except for ten papers, each of which was published in 2020, 2022, 2023 and 2024 (18.2% per year), eight in 2021 (14.5%), seven in 2025 (12.7%) and none in 2026 at the review cut-off. Thirty-seven papers (67.3%) were sent out from 2022 to 2025. Together with the old papers that provided the digital finance, adoption, and development framework, this distribution offers a more recent evidence base for the review.

Table 3: Distribution of Reviewed Papers by Publication Year

Year	n	%
2020	10	18.2
2021	8	14.5
2022	10	18.2
2023	10	18.2
2024	10	18.2
2025	7	12.7
2026	0	0.0
Total	55	100.0

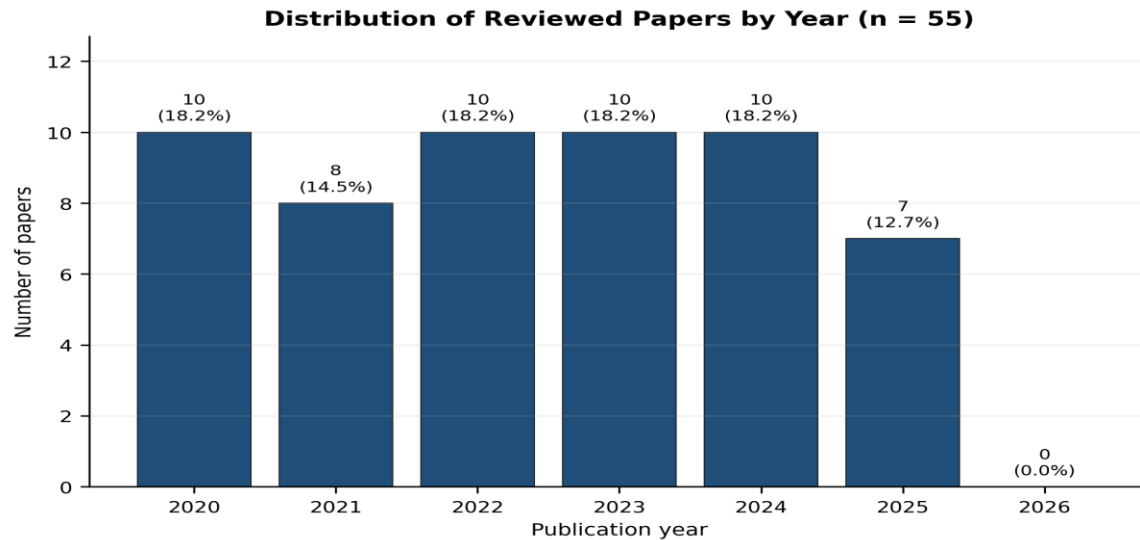


Figure 3: Distribution of Reviewed Papers by Year (Source: Authors' analysis of 55 papers, 2026).

The users of thematic classification found out that the large majority of the included studies (30.9%) were digital finance, mobile money, and fintech. Financial inclusion and development with 23.6% study sharing was the second most common category. The adoption and user behavior and trust, risk, and cybersecurity contributed equally 18.2% while the policy, regulation, and consumer protection fields were only 5 studies (9.1%). Thus, 54.5% of the articles were development or opportunity-based, whereas, 27.3% focused directly on trust, risk, cybersecurity, policy, and consumer protection respectively.

Table 4: Thematic Distribution of the Reviewed Literature

Theme	n	%
Digital finance, mobile money and fintech	17	30.9
Financial inclusion and development	13	23.6
Adoption and user behavior	10	18.2
Trust, risk and cybersecurity	10	18.2
Policy, regulation and consumer protection	5	9.1
Total	55	100.0

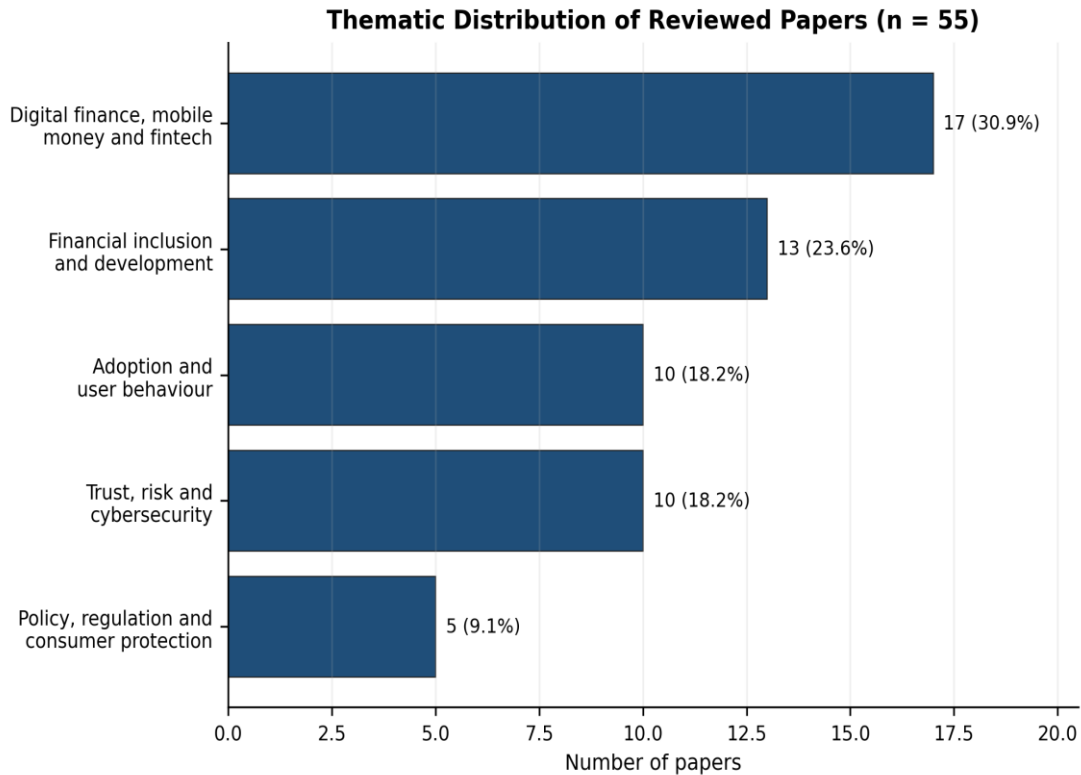


Figure 4: Thematic Distribution of Reviewed Papers (Source: Authors' analysis of 55 papers, 2026).

B. Digital Technologies and Delivery Channels Advancing Inclusion

The first research question concerned the technologies and channels advancing digital financial inclusion. The evidence

C. Risks and Barriers Affecting Adoption and Sustained Use

The second research question concentrated on the examination of the technical, infrastructural, socioeconomic, and regulatory barriers. Cybersecurity and fraud risks encompass phishing, SIM-swap fraud, unauthorized transfers, and fake agents. Privacy issues stem from the collection of excessive data, weak consent, and poor governance. Infrastructure failure can be observed in the instance of network downtime, transfer failures, and power cuts. Low literacy leads to more mistakes and dependence on intermediaries while slow refunds and unresolved complaints turn temporary service failure into lasting distrust [4], [28], [32], [34], [39], [41], [44], [47], [48].

Moreover, the paper cites design exclusion as another. Services only available on smartphones, customer-facing applications only in the English language, complex KYC procedures, and the assumption that users have continuous internet connection can nonsupport rural users, women having limitations in accessing devices, older people, low-literate users and micro-traders. Credit on instant basis should also create a situation of overindebtedness when the fees, terms and collection practices are unclear. The results from the study clearly indicate that the inclusion depends on the proper management of the risks: specifically, a service can be available in a particular geographical area and yet be socially or economically inaccessible.

D. Digital Trust as the Bridge Between Access and Continued Use

The third main research question was about the role of digital trust. Based on the findings, it can be said that trust is not only a perception but a package deal that contains the combination of technical security, reliability, provider and agent competence, regulatory

assurance, transparency, human support and social proof. Users are seen to be more prone to the ongoing use of digital finance when a strong authentication is present, the transactions are settled accurately, the reversals are prompt, fees and data practices are clear, and the complaint solicitations are easily found [25], [30], [31], [45], [46], [49], [54].

In fact, trust has to be. The habitual finance was the first step in the digital application. No settlements without security; customer services are inadequate if there are no responsible data practices. The best trust setting is: multi-layer; the account is secured, the service is operated efficiently, the regulatory authority is the one that makes security visible, and the client is the one who can get assistance when the failure happens. This result provides. the application of technology in the fields of acceptance. This is evident when the system is both good and easy to use only when the providing institution is trustworthy.

E. Policy, Institutional and Technological Strategies

The fourth research question was dedicated to the strategies that are both secure and inclusive. The digital finance review was in favor of the coordinated action in the following actions: collaborating on fraud monitoring, an authentication system that is strong but not unnecessarily extreme, infrastructure investment, data protection, agent oversight, complaint resolution, financial and digital literacy, interoperability, inclusive KYC, and human-centred design. The small fraction of the policy and consumer protection section in the corpus that was reviewed (9.1%) is then strategically important as it stresses the issues that must be addressed for the technology-led opportunity to perpetuate sustained inclusion. Table 5: Integrated Findings and Implications by Research Question

Review question	Synthesised finding	Implication
Technologies and channels	Mobile money, USSD, agents/POS, identity, interoperability, wallets, savings and credit.	Use a multi-channel strategy; do not rely on smartphones alone.
Risks and barriers	Fraud, privacy, failed transfers, weak infrastructure, literacy gaps, poor redress and exclusionary design.	Treat safety, reliability and usability as inclusion requirements.
Digital trust	Security, reliability, transparency, provider competence, regulation and human support shape continued use.	Measure trust and complaint outcomes, not registrations alone.
Response strategies	Consumer protection, cybersecurity, infrastructure, literacy, agent oversight and inclusive design must be coordinated.	Build an accountable ecosystem rather than isolated products.

Table 6: Stakeholder Action Matrix

Stakeholder	Priority actions
Regulators	Set reversal and complaint standards; supervise agents and digital lenders; enforce transparent fees, data protection and proportionate KYC.
Banks and fintech firms	Design secure, low-cost and simple products; test with vulnerable users; provide reliable support and publish service standards.
Telecom and infrastructure providers	Improve connectivity and uptime; support low-bandwidth channels; strengthen agent liquidity and service continuity.
Educators and development partners	Deliver practical financial and digital literacy on fraud, PIN safety, fees, complaints and digital credit.

Stakeholder	Priority actions
Researchers	Test how security experience, complaint outcomes, demographics and platform reliability affect sustained use.

F. Integrated Discussion

The conclusion drawn from the merger of all this evidence is undoubtedly propositional: Not just mere opportunity creates a stable inclusion. Digital channels are just the means through which one accesses formal finance, but the risks that can block one's way might lead one to lose confidence, digital trust, which is the determinant of whether one continues to be active user or not, and finally, the policy supports, which are the primary cause of the loss, can have a different effect. The equation is: opportunity + trust + protection = sustained inclusion. This synthesis is a major contribution to Information Technology as it connects the way digital systems are designed and run with the process of adoption, cybersecurity, consumer protection, and the outcomes of service. It redefines the evaluation, moving away from the number of platforms or registrations as the main indicator, to the active use, reliability, complaints resolution, security experience and the inclusion across different devices, locations, and levels of literacy.

V. CONCLUSION AND RECOMMENDATIONS

This systematic literature review included 55 peer-reviewed papers published from 2020 to 2026 on the advancement of digital financial inclusion in Nigeria. The evidence indicates that distance, cost, and service friction can be eliminated by mobile money, USSD, agent banking, POS networks, fintech wallets, digital identity, interoperability, and digital savings and credit. Their effectiveness is best when services are affordable, reliable, user-friendly, and designed according to the realities of low-income, rural, female, older, low-literacy, and small-business users. Moreover, the review underscores that digitalisation could generate exclusion frequently, especially in the case of fraud, failed transactions, privacy abuse, poor infrastructure, opaque pricing, weak mechanisms for redress, and exclusionary design, which are major causes of poverty and isolation. Digital trust is what

bridges the gap between access and continued use, as users need to feel assured about such issues as the security of the platform, the reliability of the transactions, the competence of the provider, the handling of their data, the regulatory oversight, and the complaint resolution. Therefore, Nigeria's inclusion agenda should also be assessed through safe, meaningful, and sustained use, besides just looking at the service availability or registrations. The study builds an integrated framework linking the aspects of digital trust, technology-enabled opportunity, adoption barriers, and institutional response. It also matches four research queries with the evidence-based findings and stakeholder responsibilities. For policymaking and practice, consumer protection standards should be tougher than before, the reversal protocol, agent supervision, digital-lending oversight, and data governance should be rectified by the regulators. Banks and fintech firms should embrace human-centred design, transparent pricing, strong authentication channels, and customer-responsive services. Telecom companies and the public sector must also enhance connectivity and maintain USSD and agent-assisted options. Financial capability lessons should be complemented with practical cybersecurity awareness. Despite its reliance on the published English-language literature, the review is limited by variations in the definition and measurement of inclusion, risk, and trust across the different studies, and the use of some official reports only as contextual evidence. Future empirical research should look into the connection between digital trust and continued use among women, rural users, older adults, MSMEs, low-literacy users, and people who have been a victim of fraud or had failed transactions. Complain-resolving efficiency, agent responsibility, security awareness, and platform credibility must be the primary focus. In conclusion, only through a mix of innovation and protection can digital finance help increase the level of inclusion in Nigeria. A system that goes to the users, but does not support them when they fail in their transactions, cannot be called fully inclusive.

DATA AVAILABILITY

This review was based on the existing literature and the relevant institutional reports. The review extraction matrix could be provided by the corresponding author on request.

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