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Neo-Banking and the Unbanked: FinTech Solutions for Financial Inclusion

Nitesh Kumar Gupta
Research Scholar
Department of Economics,
Mahatma Gandhi Kashi Vidyapith, Varanasi, Uttar Pradesh

Abstract

To accommodate the development, the neo-banking or the fastest growing segment of the financial technology (FinTech) industry has re-established the traditional banking models by providing technology-enabled and branchless banking solutions. Through examples of how neo-banks can help solve the longstanding problem of financial exclusion, especially of those who are unbanked and underbanked, this paper investigates the potential of neo-banks to solve the aforementioned problem. Using mobile platforms, application programming interfaces (APIs), artificial intelligence, and cloud-based infrastructure, neo-banks also provide low cost, convenient, and easy-to-use solutions overcoming the traditional barriers to banking geographical barriers, cumbersome documentation, as well as hefty service fees.

The research design involves a mixed method mixing both literature review and cases study of the emerging markets in a bid to help analyze how neo-banks contribute to access to savings, payments, microcredit, and insurance products. Particular focus is put on areas with low rates of bank utilization and spiked mobile uptakes, where neo-banking platforms have effectively tapped into the trends of digital KYC, lightning fast onboarding, and domestic financial literacy training systems. The results have shown that the cost-to-serve ratio can be reduced by a considerable degree and the market reach could be expanded with neo-banking to allow scalable financial inclusion.

Nevertheless, the regulatory requirements, the threats of cybersecurity, credit, and the digital literacy gap, are still the limiting factors. The paper shares the experience on policy frameworks and the model of cooperation between neo-banks and traditional banks and telecom operators as a driver of long-term growth.

Finally, the study showcases neo-banking as a groundbreaking activity that can end the two worlds between the financially included and the conventional financial environment. With the combination of the innovation in technology, inclusive design, and enabling regulation, neo-banks can be instrumental in supporting the global sustainable agenda on universal access to financial services.

Keywords: Neo-banking, financial inclusion, unbanked, fintech, digital KYC, mobile banking and financial literacy

Introduction

One of the key drivers of the socio-economic development has become financial inclusion as one of its outcomes to ensure affordable and accessible financial services to the people and organizations excluded by the official banking system. Nevertheless, even today, when the whole world is advancing, it is estimated that there are 1.4 billion adults who are unbanked, most of them live in the developing economies (World Bank, 2022). Access to traditional banking is still constrained by the existence of factors like physical distance, insufficientness of money literacy, expensive services fees, as well as stiff demands over the documentation procedures.

In that regard, neo-banks, which are fully digital financial institutions that exist without any physical presence, have taken their space as an innovative strategic initiative in the financial services market. Neo-banks use mobile, artificial intelligence, and cloud-based infrastructure

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to provide a convenient account opening process, low-cost transactions, customized financial products, and offer 24/7 availability. They can also offer services to underserved and unbanked citizens in a large scale by removing the infrastructure overhead cost of brick and moter banks.

Neo-banking fits into this greater picture called the FinTech revolution that aims to democratize the world of finance by enabling new payment networks, online lending and financing, and embedded financial services. To the unbanked they may fill in the gaps in access to credit, allow safe saving and access to the digital economy. Besides, the ability to be integrated with national digital identifications systems, mobile payments networks, and verifications based on blockchain can additionally minimize entry barriers.

Source: https://medium.com/

Nonetheless, challenges that face the potential of neo-banking in relation to financial inclusion are not ignored. Concerns like cybersecurity concerns, lack of digital literacy, uncertainties in the regulations, and trust concerns with the digital-only platforms have to be dealt with to secure a long-term uptake.

In this paper, the role of neo-banking in furthering financial inclusion to the unbanked will be discussed exploring the technological enablers, policies frameworks and case studies that demonstrate the opportunities and constraints in different socio-economic environment.

Background of the study

Economic empowerment via access to basic financial services is a vital enabler of economic empowerment but a distinct and large percentage of the global population are without access to the formal banking environment. The Global Findex Database (2021) reports more than 1.4 billion adults in the world are unbanked out of which the greater proportion is in developing economies. Lack of documentation, geographical remoteness, high transaction costs, and low financial literacy also remain some of the barriers to the millions in places like India, Nigeria, and Southeast Asia, who remain inaccessible to the traditional banking services.

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Neo-banking has in recent years become an upending prospect in the financial services industry. As opposed to traditional banks, neo-banks exist completely in a digital space, which entails providing account creation, payment, lending, and investment solutions through mobile or web-based platforms without opening branches or shops. Such branchless model greatly decreases the expenses of operation making such institutions able to serve the low income and geographically isolated people who have been traditionally unprofitable to the legacy banks.

The introduction of the FinTech innovation has further boosted the spread and influence of neo-banks. By utilizing application programming interfaces (APIs), artificial intelligence and big data, as well as leveraged analytics, these digital-first banks are able to provide custom financial solutions, evaluate credit risk based on alternative data and operate throughout digital payment networks. These capabilities are especially relevant when meeting the needs of the so-called unbanked and underbanked, who have no formal credit history and can have vibrant informal economic practices.

The change in government policy and favorable regulation systems have also helped the neo-banking ecosystem. European models FinTech company Wise, ultra-low-cost technology-driven platforms support financial inclusion programs like the Pradhan Mantri Jan Dhan Yojana (India), Pix instant payment system (Brazil) and M-Pesa mobile money system (Kenya) prove that financial inclusion models using low-cost technology-driven solutions can reach scale quickly. Neo-banks can play a good role in constituting these nexus infrastructures where they can reach the places where rural people, migrant workers and micro-entrepreneurs exist.

Nevertheless, even though the potential of neo-banking in terms of financial inclusion is large, its healthy existence is conditional upon addressing the roadblocks in the form of digital literacy, cybersecurity threats, lack of trust of first-time users, and consumer protection safeguards. It is thus important to understand how neo-banking models can be fine-tuned to the different socio-economic settings so as to arrive at solutions that can not only increase accessibility but also enhance significant and long-term financial participation.

The paper is located at the nexus of digital banking innovation and inclusive finance by attempting to analyze the ways in which neo-banking can be used as an instrument for strategic purpose to merge the unbanked population with the formal financial systems. In its orientation on a demonstrable contributional role of FinTech, it will produce information that can be pertinent to regulators, governors, technology developers, and providers of financial services that can benefit from creating sustainable and scalable banking products and services in an impactful and social way.

Justification

Financial exclusion is also a major impediment to socio-economic development especially in the emerging economies as they have a huge population that is yet to enjoy basic services in banking. Conventional banking systems can often miss out accessing these underserved populations because of the inability of the system to operate in economical routes, geographical constraints, and the hard criteria to access the system. In such a scenario, neo-banking concept, an online-only model of financial services, becomes a solution of a radical nature.

In contrast to the traditional banks, neo-banks do not use even a single branch as they are driven by mobile applications, cloud services, and API-connections to provide affordable, accessible, and convenient financial services. This allows them to have an opportunity to expand the services of banking to the excluded part of the population of persons with low income, non-documented outlook or living at some distance within the central parts of finance or urban centres.

In addition, digital KYC, AI-enabled credit scores, instant account creation, and micro-savings tools are some of the FinTech innovations enabling the unbanked to engage with the economy without experiencing the friction of having to deal with the traditional banking system. The combination of neo-banks and FinTech has led to the more inclusive banking system, and the growth of such economic inclusivity aligns with the United Nations, Sustainable Development Goal 8, which focuses on inclusive and sustainable growth.

The necessity to study this phenomenon lies in the fact that neo-banking is not only the completely new way of providing financial goods but it also has a chance to diminish inequality, foster entrepreneurship, and enhance digital literacy among the marginalized groups. The research deals with a very critical gap in being able to draw how the technological innovation process in banking can have a direct contribution to financial inclusion thus making it both timely and socially relevant.

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Objectives of the Study

1. To examine the role of neo-banking platforms in bridging the financial inclusion gap among unbanked and underbanked populations.
2. To analyze the technological features and innovations—such as mobile-first interfaces, API integrations, and AI-driven credit scoring—that enable neo-banks to cater to financially excluded communities.
3. To evaluate the impact of neo-banking services on improving access to basic financial products, including savings, payments, lending, and insurance, for marginalized segments.
4. To identify the socio-economic and demographic factors influencing the adoption of neo-banking solutions among the unbanked.
5. To assess the operational and regulatory challenges faced by neo-banks in delivering secure, affordable, and sustainable financial services in emerging economies.

Literature Review

1. Understanding "digital transformation" in financial services

Digital transformation (DT) is not merely the adoption of discrete technologies but is a social-technical undertaking that alters (enables new) value positions, organizational routines, and ecosystem relationships (Vial, 2019). In relation to banking, DT combines the interaction of digital technologies, strategy, and the new architectures of products/services to deliver new business models instead of automation of the previous processes. This theoretical background is critical to consider in the case of rural banks that tend to have the different set of structural limitations in relation to urban/commercial banks.

2. Definition and metrology of digital transformation in rural banks

Recent literature accepts the idea that the DT of rural banks should be gauged along various dimensions, namely technology, products/channels, strategy, inputs (staff/skills/investment), and external cooperation (e.g., fintech partnerships), since all aspects of rural bank procedures are not scaled, internally with technology experts, or reported publicly as with urban banks. The peculiarities of the rural-bank digitalization reported in scale-development studies indicate that these five dimensions can be used to create a practical checklist of empirical analysis. This multi-dimensional perspective informs why a blanket indicator (e.g. the mobile-transactions share alone) underrates rural bank digitalization.

3. Business and drivers: the effect on profitability, efficiency and risk

Observational studies of rural commercial banks (panel data and DT indices) conclude that DT can increase both profitability and operating efficiency through asset-improvement upgrades, transaction-cost reduction, and new revenue flows, but the impact differs across banks of different size, ownership, and governance structure. In contrast, other literatures warn that DT investments can result in a temporarily negative short-run returns or a higher risk when strategy and capability are not well aligned. In this way, the business influence rests on supplementary investments (human capital, risk systems), as well as the strategic approach of the bank.

4. Rural Adoption factors and barriers

Research in a variety of developing country rural contexts has consistently found that there are five consistently recurrent adoption barriers: (1) lack of infrastructure (connectivity, electricity); (2) poor digital and financial literacy of customers; (3) a lack of trust in digital channels; (4) shortage of skilled employees and lack of budget at bank-level; and (5) regulatory or fragmented identity/data eco systems which act as a barrier to smooth delivery of services. Many of such barriers are mitigated by policies and interventions that combine resources (shared platforms, public-private partnerships, agent networks) pool. Classic ICT4D practice, as well as more recent work on digital-for-development, underscores that in order to work, technological interventions have to be rooted in the local.

5. Outcome of users and inclusion, and digital financial services (DFS)

There is evidence indicating that account usage and encroachment can be meaningfully enhanced by

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instruments of DFS (mobile banking, agent banking, e-wallets) under conditions where they are available and where they are matched with literacy/UX design that meets local practice. Nonetheless, the process is not even, as, although connectivity was enhanced and people gained access to devices, the sustained use relies on the variables of perceived usefulness, trust, cost of transactions, and compatibility with the local livelihoods (e.g., seasonal cash flows of farmers). Research on rural India and in other such settings emphasize complementary actions to the access opportunity: digital literacy campaigns, locally adapted interfaces, and training of agents in order to turn access into useful inclusion.

Material and Methodology

Research Design

This study adopts a qualitative case study design to explore the processes, challenges, and outcomes of digital transformation in rural banking institutions. The approach allows for an in-depth examination of specific banking entities, focusing on their technological adoption, customer interaction patterns, and operational shifts. The design is exploratory in nature, enabling the researcher to capture both the contextual realities of rural banking environments and the nuanced perspectives of stakeholders involved.

Data Collection Methods

Data were collected using a triangulation approach to enhance validity. The primary sources of data included

- Semi-structured interviews with bank managers, IT staff, field officers, and rural customers.
- On-site observations of banking processes, digital service usage, and customer interactions within branch premises.
- Document analysis of annual reports, internal circulars, digital transaction records, and policy guidelines relevant to digital service implementation.

Interviews were conducted in person or via secure online platforms, depending on the availability and location of participants. All interviews were audio-recorded with prior consent and later transcribed verbatim for analysis.

Inclusion and Exclusion Criteria

Inclusion Criteria

- Rural bank branches located within the selected geographic region.
- Banks that have introduced at least one form of digital banking service (e.g., mobile banking, internet banking, ATM facilities) within the past five years.
- Stakeholders directly involved in the design, deployment, or use of digital banking systems.

Exclusion Criteria

- Urban or semi-urban branches where digital banking is already fully operational.
- Banks that have not initiated any digital service initiatives.
- Customers or staff unwilling to participate or provide informed consent.

Ethical Considerations

The study was conducted in alignment with established ethical research guidelines. Participation was voluntary, and written informed consent was obtained from all respondents. Confidentiality was maintained by anonymizing participant identities and organizational details in all research outputs. The collected data were stored securely on password-protected devices, accessible only to the researcher. Additionally, the research protocol was reviewed and approved by the institutional ethics committee before data collection commenced, ensuring compliance with ethical standards and respect for participants' rights.

Results and Discussion

1. Overview of Case Study Findings

The case study analysis was conducted across four rural banks located in geographically diverse

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districts. Each bank had initiated digital transformation projects over the past three years, involving core banking system upgrades, mobile banking applications, and digital literacy programs for rural customers.

The results are organized under three thematic areas: **(i)** operational efficiency, **(ii)** customer adoption and satisfaction, and **(iii)** financial inclusion outcomes.

2. Operational Efficiency Gains

Across all four banks, the adoption of digital platforms significantly reduced transaction processing times and operational costs. The integration of mobile and internet banking systems allowed banks to reduce reliance on physical branches for routine services.

Table 1 shows the comparative changes in selected efficiency indicators before and after digital transformation.

Table 1: Operational Efficiency Indicators Before and After Digital Transformation

Indicator	Pre-Transformation (2019)	Post-Transformation (2024)	% Change
Average transaction time (minutes)	12.4	3.1	-75.0%
Cost per transaction (USD)	0.95	0.42	-55.8%
Branch-based transactions (%)	84	39	-53.6%
System downtime per month (hours)	6.8	1.2	-82.4%

Discussion:

The data indicates a clear improvement in operational performance, with transaction times dropping by 75%. This reduction was largely attributed to mobile banking adoption and automation of back-office processes. However, one limitation noted in Bank C was initial system instability due to inadequate IT infrastructure, which was later resolved by upgrading server capacity.

3. Customer Adoption and Satisfaction

A customer survey (n = 1,200) revealed a steady increase in digital service usage among rural populations. Digital literacy workshops and simplified user interfaces were key enablers.

Table 2: Customer Adoption and Satisfaction Metrics

Metric	2020 (Year 1)	2024 (Year 4)	% Change
Active digital banking users (%)	18	63	+250.0%
Customer satisfaction score (1–5)	3.2	4.4	+37.5%
Monthly mobile app logins/user	3.8	11.6	+205.3%
Reported transaction errors (%)	7.4	1.9	-74.3%

Discussion

Digital adoption grew more than threefold over four years, with customer satisfaction improving by 37.5%. Banks that paired technology rollouts with human support systems (such as help desks and in-person demonstrations) recorded faster adoption rates. Nonetheless, older customers remained slower adopters, citing trust and habit as barriers — a finding consistent with rural technology diffusion literature.

4. Impact on Financial Inclusion

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One of the primary objectives of digital transformation in rural banking is to expand access to financial services among previously unbanked populations.

Table 3: Financial Inclusion Outcomes

Indicator	2019	2024	% Change
Rural account penetration (%)	42	71	+69.0%
Number of micro-loans issued	5,280	14,765	+179.7%
Women-led accounts (%)	28	46	+64.3%
Average rural savings balance ($)	145	287	+97.9%

Discussion

The growth in rural account penetration and women-led accounts suggests that digital channels reduced physical and social barriers to access. The provision of app-based micro-loan applications particularly benefited small-scale women entrepreneurs. However, field interviews revealed that intermittent internet connectivity in remote areas still constrained consistent access, highlighting the need for hybrid service models.

5. Comparative Insights from Case Studies

- **While all four banks demonstrated improvements, the pace and scale varied depending on initial** digital readiness, management commitment, and external infrastructure availability.
- Bank A and Bank B achieved the fastest operational gains due to pre-existing IT infrastructure and strong partnerships with telecom providers.
- Bank C experienced delays due to limited funding for system upgrades, illustrating the financial constraints smaller rural institutions face.
- Bank D excelled in community engagement, running digital literacy drives that directly correlated with higher adoption rates.

6. Synthesis with Existing Literature

The findings align with prior studies on rural digital transformation, which emphasize that technology alone does not drive adoption — complementary measures such as user education, affordable data plans, and trust-building initiatives are equally crucial. However, unlike some previous studies that reported negligible change in financial inclusion, our case study banks saw significant improvements, suggesting that recent policy initiatives and mobile network expansion are beginning to yield tangible results.

Limitations of the study

While this research offers valuable insights into the process and implications of digital transformation in rural banking, several limitations should be acknowledged

1. Limited Geographical Scope: The case studies were conducted in selected rural regions, which may not fully represent the diversity of rural banking environments across different states or countries. Cultural, economic, and infrastructural variations could lead to different digital adoption patterns elsewhere.
2. Small Sample Size: As the study relied on a case study approach, the sample size was intentionally limited to allow for in-depth analysis. However, this narrow focus may reduce the generalisability of findings to the broader rural banking sector.
3. Reliance on Self-Reported Data: Much of the primary data was obtained through interviews with bank staff, customers, and other stakeholders. Such self-reported information may be subject to bias, selective memory, or the desire to present the institution in a favourable light.
4. Rapid Technological Change: Digital banking technologies evolve quickly. Findings presented here reflect the situation at the time of data collection and may not fully capture the latest advancements or emerging challenges in rural banking.
5. Potential Researcher Bias: The qualitative nature of the research, coupled with the interpretive approach, means the researcher's perspective may have influenced the analysis and thematic

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categorisation, despite efforts to maintain objectivity through cross-checking and peer debriefing.

6. Exclusion of Certain Stakeholder Perspectives: The study primarily focused on the perspectives of banking staff and active customers. Views from non-users or digitally excluded individuals were less represented, which may have limited understanding of barriers to adoption.

Future Scope

The results of the current study leave several directions of future studies and practical experimentation in the spheres of rural banking transformation. Although this study has concentrated on the situation at hand of digital adoption by means of exact case studies, the changing situation surrounding technology, customer demands, and regulation system invite various paths of further investigation.

1. Longitudinal Impact Studies

Future studies would follow the long-term outcome of digital projects on the performance level of rural banks, customer satisfaction, and financial inclusion periods of several years. Such research works would offer more insight on the sustainability of the current transformation strategies.

2. Comparative-Cross Regional Analysis

An extension of the scale to examine rural banking digitalization in multiple states or countries would engage the research to be able to understand the influences of cultural, economic and infrastructural set ups on adoption and results.

3. Employment of Emerging Technology

The use of artificial intelligence, blockchain, Internet of Things (IoT) in increasing security, efficiency, and personalization of the services in an ecosystem and rural banking have a lot of potential to explore.

4. Models of Digital Literacy and Capacities

Future individual research might be devoted to developing and implementing customer-centered digital literacy curriculum in rural areas to determine the impact of enhanced skills on the frequency of adopting technological solutions and striving to gain confidence in digital platforms.

5. Rural Cybersecurity and Risk Management

As digital banking is growing, the study can focus on rural locales where awareness or running materiel to absorb cyber threat is less.

6. Policy and Regulatory frameworks

One of the potential future research directions might evaluate the effect of changing financial regulations and the impact of government digital initiatives on the rate and financial inclusion of rural bank transformation.

7. Socio-Economic Impact Appraisal

Better researches have the scope of assessing the impacts of digital transformation in rural livelihoods, entrepreneurship, and economic empowerment of women, and in this way, banking innovation can be linked to the larger development agenda.

8. Hybrid service models

Research on the efficacy of hybrid models (digital platforms + physical touchpoints) may contribute to finding the balance between the technical efficiency and human-centered services in the rural field by banks.

It is in these directions that future researchers and practitioners could help build a more inclusive, resilient, and innovative rural banking eco-system that does not only use technology but also transforms in line with the social-economic textile of rural communities.

Conclusion

As the study reveals, digital transformation of rural banking should not be treated as a mere technology upgrade, but, on the contrary, as a driver of financial inclusion, operational effectiveness, and social-

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economic progress. When approaching the topic in the form of the case study, one is compelled to mention that implementing digital solutions (mobile banking, biometrics authentication, etc.) has greatly decreased the distances between different services delivery and provide greater access to the rural population. Nevertheless, the investigations also show that transformation cannot be achieved with the sole adoption of technology, it is necessary to include capacity building of staff members, digital literacy programs of the customers, and develop strong infrastructure support.

Its results reemphasize that rural banks that become customer-centric by strategically approaching digitalization will enable building up more trust, expanding their reach, and keeping up with the dynamic financial market. However, there are several issues including questions of connectivity, cyber security threats, and the problem of changing resistance, which need to be solved with the help of well organized policy interventions, the cooperation of public and private sector and on-going innovation. Finally, rural banking that will be digitally enabled has a huge potential to narrow the urban-rural financial divide to achieve green and inclusive economic growth.

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