

Adoption of Digital Banking Technologies in Rural Areas: Challenges and Solutions

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Abstract

"Digitalization" is a concept that dominates the modern environment in which we live. With the goal of transforming India into a knowledge economy and society enabled by technology, the Indian government has unveiled the Digital India Programme. Digitalization is the process of using digital technology to enhance current procedures or implement new ways of running a business, which enhances customer satisfaction and increases the firm's currency exchange rates. The paper aims to assess the significance of digital literacy in the current banking environment and to explain the potential and difficulties that have recently emerged in the rural banking industry, with a focus on digitalization. Banks are essential to the banking system in India. They are responsible for overseeing public finances and making investments to support trade and economic growth. The banking sector makes up the majority of the financial sector in developing nations like India, while other financial sectors are still in their infancy. With effect from October 17, 2000, the Indian government passed the IT Act, 2000, giving electronic transactions and other forms of electronic business legal status.

Keywords: Digitalization, Banking Sector, Rural Area, India, Issues.

1. Introduction

The banking industry is referred to be the "sector of development of all other sectors" due to the financial support it offers to other industries, which promotes capital formation.

India is falling behind in the financial sector's adoption of digitalization, despite being one of the world's fastest-growing nations. It is true that the economy will undergo a revolution as a result of banking being digital, but there are several crucial actions that must be taken to digitalize rural banking, Jameaba (2020). The banking industry is going through a crucial transitional phase where all operational paradigms are evolving quickly and technology is the most potent factor. This enables banks to compete by fusing their expertise with novel products or services. Many jobs are now completed electronically as a result of the widespread usage of information technology both at work and at home. The adoption of electronic banking by Indian customers is happening gradually but steadily.

One of the most important components of a successful banking system is information technology (IT), and Indian banks are working hard to take advantage of the prospects.

Although there are serious security dangers associated with online banking and digitization, Indians greatly value its benefits. Mr. Narendra Modi launched the "Digital India" campaign, which predicted that over 12,000 rural post offices will be connected to payment banks via digitalization, Kumar (2023). Furthermore, the main goal of India's digitalization initiative is to curb the flow of illegal cash. Digitalization is starting to have a significant impact on India's rural economy. It has had the ability to positively impact the lives of those living in rural India. The Government of India's flagship initiative, Digital India, has implemented a comprehensive set of measures to support rural communities in achieving long-term digital transformation, Verma and Kumaran(2021). These measures include reducing the digital divide, promoting the use of digital technology, offering the digital skills necessary to fully utilize it, and using indicators to monitor the success of the rural populace.

Customers now have less work to do thanks to a variety of customer-focused solutions like electronic payments, telebanking, ATM services, and online banking. A consumer can access and manage his account without physically going to the bank's location thanks to the power of internet banking. Customers can instantly access banking services like account summaries, overdraft details, transaction details, online requests, fund transfers between accounts, adding accounts to beneficiary lists, standing instructions, e-payment facilities, checking the status of checks, TDS information, and more, Mondal (2011). Since these features are advantageous to both banks and consumers, the majority of banks have already fully embraced digitalization. The introduction of data technology into the banking industry has resulted in significant changes to the industry's operational strategy. Apart from their typical responsibilities, banks also carry out some modern tasks that were unimaginable just a few decades ago. Thus, educating people about the benefits of e-banking services and empowering them to utilize them is undoubtedly a monumental undertaking.

People who live in rural areas frequently lack the time, resources, and opportunities to visit branches that are spread out across several locations. Consequently, it has prompted banks to use a range of technology-driven delivery methods,

including smart cards, mobile apps, micro ATMs, and ATMs, to connect with their customers, Panda and Joy (2020). Additionally, digital banking networks are extremely safe, which is crucial for those who reside in remote areas. People may be reluctant to bring big amounts of cash to bank branches because of the significantly higher danger of theft in rural locations. People can conduct transactions safely and without carrying huge amounts of cash thanks to online banking. Digital banking expands small enterprises' access to credit by making the rural populace bankable and providing them with the tools they require for business and other economic endeavours. Another advantage of online banking systems is the opportunity to develop money management skills and increase one's financial literacy, Tamang (2024).

2. Literature Review

Aggarwal and Singh determine that (2024) E-banking might significantly enhance financial inclusion and economic growth. Resolving security concerns, increasing digital literacy, modernizing digital infrastructure, and promoting financial literacy can all hasten the adoption of digital banking. Through collaboration between the government, financial institutions, and community organizations, e-banking has the potential to completely transform financial inclusion in semi-urban areas.

Solanki and Kumar (2023) concluded that to keep up with the rapid changes in technology, regulations, and the market, it is imperative that all Indian banks use new innovations and technologies. Similar to how everything has two sides, technology also has advantages and disadvantages. Everyone benefits from technology if it can be adopted and used wisely. Every citizen must be aware of every banking sector service in accordance with RBI standards and regulations. Consumers ought to be informed about security features. In addition to raising customer awareness, employees should receive periodic training. The methods for raising consumer awareness are gamification and social media channel utilization.

Azmi *et al.* (2020) explored that since the advent of digitalization, the banking sector has become more efficient. The government and industry will work together to make India a less cash-dependent nation, which will increase system efficiency. Employee training and feedback can increase worker productivity by facilitating their quick and seamless transition to rapidly evolving technologies.

Salunkhe and Shinde concluded that the number of rural social infrastructures, including Mahila Mandals, Youth Clubs, and Panchayati Raj Institutions, should rise in tandem with the growth of the rural digital economy. However, line department representatives, such as school teachers, village development officers, and medical experts, would educate the local populace about the digital economy and financial inclusion.

Mookerjee *et al.* (2025) demonstrates how digital banking technologies may empower rural people by providing safe transactions, access to microcredit, the ability to mobilize savings, and insurance services. Furthermore, a critical analysis of how public-private partnerships, financial literacy programs, and government regulations support the use of digital banking products is conducted. The widespread use of digital banking in rural areas is hampered by difficulties like low internet penetration, a lack of digital literacy, cybersecurity threats, and trust issues, notwithstanding these developments. In order to close the digital divide and provide fair financial access, the study also highlights the significance of customized approaches, such as the creation of regional digital tools and infrastructure.

Khatun *et al.* (2024) demonstrated that the majority of mobile banking transactions grew in frequency and volume during the pandemic. Additionally, the vast majority of rural residents (around 88%) take advantage of mobile banking services. According to the index value measuring farmers' satisfaction with mobile banking transactions, respondents were happy with a variety of mobile banking transactions but unhappy with the increasing service prices. According to logit estimate, the main characteristics influencing rural farming populations' adoption of mobile banking were age, income, education, farm size, and distance from the bank branch. However, increasing the use of mobile banking services in rural areas and hastening their financial inclusion requires security against fraudulent transactions, a reduction in service fees, and an extension of agent service.

Dixit *et al.* (2022) seeks to quantify the impact of ICT on economic development in rural transformation. With the rapid advancement of technology, the digital platform now controls every aspect of our life. With the aid of mobile phones, Sahaj Seva Kendra, and plastic money connected to a safe digital payment system, digital banking has been essential in providing financial services to disadvantaged populations. The economy and society have benefited greatly from these e-service delivery.

3. Objectives of the Study

1. To understand how important digital banks are to rural communities.
2. To understand the government's efforts to digitize banking in rural regions.
3. To understand various challenges that emerged in recent era due to digitalization.

4. Research Methodology

The primary source of information used in this research work is secondary data. The secondary data was gathered from a variety of sources, including government data, journals, research papers, magazines, and the Internet.

5. Importance of Digital Banks

Rural areas' financial landscape is being transformed in large part by digital banks. Through the use of technology, these organizations provide noteworthy advantages that tackle the particular difficulties that rural communities encounter while trying to obtain financial services. We go into further detail on the significance of digital banks for rural communities below.

- **Financial Inclusion for the Unbanked:** Many people in rural areas lack access to traditional banking infrastructure, which frequently results in them being unbanked or underbanked. By offering online platforms, digital banks enable people who might not have otherwise had the chance to create a bank account or obtain credit to access financial services, Agur *et al.* (2020). These banks are more inexpensive for those with modest incomes because they usually provide low-cost services.
- **Promoting Entrepreneurship and Economic Growth:** Additionally, digital banks are essential for encouraging entrepreneurship in rural regions. People are encouraged to launch or grow small enterprises by the availability of reasonably priced loans and financial services, Oni and Daniya (2012). Agriculture is the main economic driver in many rural communities, and digital banking services can assist farmers and rural business owners in managing their revenue, making investments in new technology, buying equipment, and gaining access to equitable financial products.
- **Enhanced knowledge and Understanding of Finance:** Digital banking platforms frequently have integrated learning tools that teach users about budgeting, money management, and financial goods. Digital banks can be crucial in educating people about personal finance, digital payments, loans, and investments in rural areas where financial literacy rates may be poor, Das (2024). Digital banks assist rural populations in becoming more financially literate and making wise financial decisions by offering tools, tutorials, and customer support.

6. Government Initiatives toward Digitalization

In many nations, the government's initiatives to digitize banking in rural areas have been crucial to promoting financial inclusion and overcoming the gap between urban and rural areas. Rural communities, who have historically been shut out of mainstream financial systems because of things like poor infrastructure, low literacy rates, remote location, and restricted access to banking services, will particularly benefit from this project.

The realization that traditional brick-and-mortar banking models frequently fall short of rural communities' needs is one of the main forces behind this movement toward digitization, Sharma (2024). Remote locations frequently have few bank branches, and many communities lack enough automated teller machines (ATMs) or bank branches. In rural areas, the government has responded by introducing digital technologies like internet banking, electronic wallets, and mobile banking. The geographical limitations that keep people in isolated places from using banking services can be overcome by these technologies. Rural residents can use mobile banking to conduct financial operations including savings, bill payment, and money transfers without having to drive far to a physical branch, Donovan (2012).

To guarantee that even rural locations have access to mobile internet, governments have partnered with telecom firms to increase the coverage of mobile networks. The adoption of digital banking services in rural areas has also been greatly aided by the availability of cellphones. For instance, in nations like India, the government's Digital India campaign has been essential in increasing connectivity and giving citizens access to the digital tools required for internet banking, Prasad (2012). In order to support digital banking, the government has also concentrated on developing a favourable regulatory environment. This entails putting in place frameworks to guarantee cybersecurity and consumer safety in addition to enacting laws that permit e-wallets and mobile money services. To protect users against fraud and identity theft, which can be especially common in areas with low levels of digital literacy, governments have put rules and regulations into place. People are more likely to trust digital banking services when they feel safe using them thanks to these restrictions. The introduction of national digital payment networks is among the most prominent and significant government-led efforts to promote the digitalization of rural banking. To encourage financial inclusion, for instance, the Indian government launched the Pradhan Mantri Jan Dhan Yojana (PMJDY) program in 2014, Nibrayan (2018). The goal of this program was to give every household access to a bank account and financial services like insurance, pensions, and overdrafts. Additionally, the Jan Dhan mobile banking application was released, enabling rural residents to use their phones to access their accounts. The program has been extremely successful, and millions of rural homes have benefited from it. Digital currencies and central bank digital currencies (CBDCs) have also started to contribute to rural areas' digitization initiatives. The use of digital currencies to improve financial inclusion and streamline the remittance process has been investigated by nations such as China and Nigeria. Digital currencies are a crucial instrument for expanding access to banking services since these programs provide a safer and more effective means for people in remote areas to send and receive money, Sapovadia (2018).

7. Challenges in Recent Era of Digitalization

Increased productivity, convenience, and connectedness are just a few of the many benefits that have surely come from the recent fast digitization of several industries. But technology has also brought about a number of problems that have an impact on people, companies, and communities. The digital divide, which emphasizes the difference between those

who have access to digital technologies and those who do not, is one of the most important problems. High-speed internet, cutting-edge technology, and sophisticated digital services are becoming more and more available in metropolitan regions and industrialized nations, but low-income and rural populations sometimes lack the infrastructure and resources needed to take advantage of this digital revolution. This gap makes already-existing disparities worse by further marginalizing some populations and preventing them from accessing basic services like banking, healthcare, and education, Cannon (2021).

Cybersecurity risks are another significant issue. The risk of identity theft, hacking, and data breaches has grown as more private financial and personal data is transferred online. The tactics used by cybercriminals, who attack people, companies, and even governments, are become increasingly complex. High-profile data breaches, such those that impact big businesses or governmental organizations, have sparked worries about how vulnerable digital systems are and how reliable online transactions are. The onset of digitization has also increased privacy issues. Businesses can now more easily gather enormous volumes of personal data thanks to the increasing use of social media, cellphones, and Internet of Things devices, Solove (2004). Many customers, however, are ignorant of the amount to which their data is being collected, disseminated, and utilized for profit. Concern over the handling of personal data has grown as a result of the lack of openness surrounding data usage and the possibility of misuse or illegal data sharing. In order to preserve people's privacy, governments and regulatory agencies are being asked to implement stronger data protection rules more frequently. However, because technology is developing so quickly, it can be difficult to stay on top of emerging threats. Another problem brought on by digitalization is the displacement of jobs. Industries have changed as a result of automation, artificial intelligence (AI), and machine learning, which have accelerated and improved operations, Tschangand Almirall (2021). But many tasks that were formerly done by people have also been automated as a result of these technologies, especially in the administrative, retail, and manufacturing sectors. The trend toward automation has left many people, particularly those in low-skilled professions, facing unemployment or the need for retraining, even though digital technologies have opened up new job prospects in industries like IT and data analysis. Furthermore, the prevalence of digital addiction is rising, especially in light of the growth of social media, online gaming, and cellphones' continual connectivity. Negative psychological impacts like anxiety, despair, and social isolation can result from excessive screen time and compulsive use of digital platforms, George (2023). Younger generations, who are growing up in a society that is hyperconnected, should be particularly concerned about this issue. Striking a balance between the advantages of digital interaction and the requirement for mental and physical health is the difficult part.

8. Conclusion

As banks adopt technology, their financial services will become more user-friendly. Similar to a coin, technology has advantages and disadvantages. Everyone benefits from technology if it can be adopted and used wisely. Every citizen must be aware of every banking service in accordance with RBI standards and regulations. Consumers ought to be informed about security features. In addition to raising customer awareness, employees should receive periodic training. Increasing consumer awareness can be achieved through gamification and social media channel utilization. However, the banking industry has a number of challenges, including the nation's massive population, poverty, economic backwardness, and a lack of networking infrastructure. One facet of digital transformation is the shift from traditional banking to a digital environment. There has been a substantial change in the way banks and other financial organizations approach customer satisfaction and engagement. Every business and industry approaches digital transformation differently. Generally speaking, digital technology is being incorporated into every facet of business. Therefore, it is determined that consumers generally have a positive preference for digital banking services. As the banking sector becomes more digitally connected, it would be ideal to develop widely accepted policies that are implemented publicly across the financial system.

9. Future Research

Future research can look at how government initiatives and comprehensive regulatory rules affect the expansion of digital banking in rural areas. Finding the best legislative initiatives to promote financial inclusion may aid in closing current disparities. A thorough analysis of the function of infrastructure is necessary, including reliable internet access, the prevalence of mobile devices, and the accessibility of financial service locations. To facilitate smooth digital transactions, strategies to address infrastructure issues in remote locations should be given top priority. Studies that compare nations with different degrees of rural financial inclusion might offer important insights into strategies and best practices that can be used globally.

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