



Financial Inclusion Through Digital Banking In Rural Karnataka

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Abstract

Inclusion financial inclusion has become one of the key pillars of an inclusive growth process in India, and digital banking is considered to be the most scalable channel to narrowing the urban-rural gap. Karnataka is the state with a high concentration of rural population and a dense network of regional rural banks and cooperative institutions, which has experienced a rapid growth in the number of Jan Dhan accounts, Aadhaar-based payment systems and UPI-based transactions. The present paper describes financial inclusion using the concept of digital banking in rural Karnataka as a secondary research based on the main sources like RBI surveys, NABARD surveys, government reports and recent empirical literature. Chi-square and t-tests are used to test association and mean differences hypotheses. The findings suggest that there are great variations in the levels of adoption in the districts, and the more the district is highly digitally used, the higher the inclusion score, which proves the enabling nature of digital channels. Nevertheless, network gaps, low digital literacy, fear of fraud and language problems have become a barrier to the absolute exploitation of digital services. According to the study, it is necessary to supplement infrastructure and product innovations with specific digital literacy, customer protection systems, and vernacular interfaces in rural Karnataka. The results provide policy-relevant information to banks, regulators and state agencies that aim at enhancing digital financial inclusion at the last mile.

Keywords: Digital Payments, Banks, Rural Area, Karnataka, Policy, Literacy.

Introduction

Financial inclusion is an idea that can simply be described as having access to useful and affordable financial products and services, including savings, credit, payment, insurance and pension offered in a responsible and sustainable way.

In India, it has become increasingly policy thrust on inclusion with the introduction of the Pradhan Mantri Jan Dhan Yojana (PMJDY), differentiated banking licences and small and marginal farmers, micro enterprises and low income household targeted schemes.

Similarly, the fast process of creating payment options via the rapid digitisation of payments, such as UPI, Aadhaar Enabled Payment System (AePS), BHIM and others, has changed the channels of access, where digital transactions constitute the vast majority of the retail payment volumes.

Karnataka is placed in a unique location on this scenery. This is a relatively high economic dynamism and IT penetration state coupled with a high rural population that relies on agriculture and related practices. Opening basic savings accounts, the extension of Kisan Credit Cards as well as mobilisation of savings in rural areas has been spearheaded by Regional Rural Banks like Karnataka Vikas Grameena Bank (KVGB) and cooperative institutions.

According to NABARD All India Rural Financial Inclusion Surveys and Annual reports, there is slow improvement in the ownership of formal accounts, but there is still a gap in the utilisation, access to credit and insurance coverage of rural households.

Digital banking has created a new avenue of enhancing inclusion by providing mobile banking applications, UPI, micro-ATMs, business correspondents (BCs) using handheld gadgets, and subsidies based on Aadhaar. Recent studies have found that digital payment systems have the potential to enhance the convenience of the system, lower transaction costs and increase the coverage of the rural and semi-urban areas of Karnataka. However, the advantages of the digitalisation are not balanced. Patchy network coverage, lack of digital and financial literacy, cyber-security fears, language barriers and lack of trust in technology constraints are commonly responsible for restricting frequent use, especially among women, older and less educated rural users. It is against this backdrop that the introduction of financial inclusion in the rural Karnataka in the form of digital banking is not only an opportunity, but also a policy imperative. Although such macro-level data as the Digital Payments Index offered by RBI and the numbers of PMJDY accounts reflect positive changes, they tend to conceal differences within states and the complexities of usage.

This paper tries to answer these questions by referring to secondary data that is collected based on RBI, NABARD, government press releases, and peer research through both 2018 to 2025. Building a consolidated numerical data on rural Karnataka and performing simple hypothesis testing, the paper offers an analytically informed image of the scope, effect, and limitations of the digital banking-induced financial inclusion. The findings will guide the banks, policy makers and local institutions to come up with specific interventions to bridge the remaining gaps in the inclusion in rural Karnataka.

Review of Literature

Kharuri and Manjunatha (2018) analyzed the financial inclusion in Indian Regional Banks and discovered that the expansion of branches, Kisan Credit Cards and General credit cards had a substantial positive effect on access to formal finance among rural families, although the use of high-technology services and digital means was limited, necessitating technology-based outreach and literacy intervention.

NABARD (2018) – NAFIS has recorded the rural household status across the states which incorporates the livelihood and financial inclusion indicators. In the case of Karnataka, the survey showed that the bank account ownership levels were relatively high, but the levels of indebtedness and dependence on informal credit levels were also high, which meant that it was necessary to take the quality of inclusion to the next level by not only opening a bank account.

According to NABARD (2019) Annual Report, specific effort was made on digital financial literacy efforts, assistance to business correspondents and encouragement of Aadhaar-enabled payments in rural India. These interventions were revealed to stimulate the knowledge and adoption of the basic digital banking service, specifically in the states with robust networks of both RRBs and cooperatives, such as Karnataka.

White paper: Vakrangee (2020) financial inclusion in rural India held the argument that digital banking can be promoted in the remote areas through mass use of mobile and agent-based outlets. The report pointed at interoperability, vernacular interfaces and interoperable cash-in/cash-out points as the means of sustainable inclusion in rural communities with low income.

RBI (2021) National Strategy on Financial Inclusion presented a detailed plan on how to use Small Finance Banks, Payments banks and digital payment systems to tap into underserved groups. The plan emphasized geo-tagging payment touch points and focused interventions in the rural and aspirational districts.

According to the report compiled by the Nilekani Committee (RBI, 2019) on deepening digital payments, UPI, Aadhaar and mobile-first design are the pillars of a high-volume, low-cost payment ecosystem. It suggested streamlining of KYC, redressing of grievances and consumer trust to speed up uptake of digital by rural users.

Based on evidence in rural India, Cnaan et al. (2023) made the argument that digital banking can bring considerable improvements to financial inclusion, but can also bring about new types of exclusion unless connectivity, literacy and user-focused design problems are considered. The paper emphasized the varied approaches to various rural segments.

Chauhan (2023) demonstrated that India is drifting towards the last mile of inclusion by innovations that include geo-tagged payment touchpoints, UPI with proliferation and scheme target. Nevertheless, the geographical inequality of digital infrastructure and the concentration of agents is also one of the impediments, particularly in rural and semi-urban regions.

Recent Karnataka-based research (2024-25) relating to digital banking in rural Mysuru, South Canara and rural India in general present an increasing uptake of UPI, mobile banking and micro-ATMs. They

identify a positive correlation between digital payments and financial inclusion, and network outages, concerns with cyber-risks and low literacy rates as longstanding problems.

Objectives of the Study

1. To assess the extent of digital banking adoption among rural households across selected districts of Karnataka.
2. To examine the relationship between digital banking usage and the level of financial inclusion among rural households.
3. To identify and analyse the key barriers that limit effective digital financial inclusion in rural Karnataka.

Need for the Study

Even though the number of bank accounts and the increase in the number of transactions via the digital channel is high, a large proportion of rural households continue to make use of formal financial and digital services in Karnataka. The literature is either national-level or district-based. The data-based analysis of inclusion in rural Karnataka based on digital banking needs to be consolidated in order to inform banks and policymakers in the development of specific, evidence-based interventions.

Methodology of the study

The current research assumes the descriptive and analytical research design where the researcher aims to evaluate the role of digital banking in the financial inclusion of rural households in Karnataka. The paper is fully founded on secondary sources, which are aggregated material of publication of the Reserve Bank of India (RBI), National Bank of Agriculture and Rural Development (NABARD), Government of India online payments report, and recent peer-reviewed literature between the years 2018 and 2025. This structure allows conducting a systematic analysis of trends, the patterns of adoption, and the challenges of digital financial inclusion in rural areas.

Scope of the study

This study examines financial inclusion through digital banking in three rural districts of Karnataka—Belagavi, Haveri, and Kalaburagi. Using secondary data, it analyses digital adoption, financial inclusion levels, and key barriers among rural households. The scope is limited to these districts, offering focused insights for policymakers and financial institutions.

Analysis of the study

Table 1: Digital Banking Adoption Across Rural Districts

District	Category	O _i	E _i	(O _i – E _i) ² / E _i
Belagavi	Yes	78	69.6	1.01
	No	42	50.4	1.40
Haveri	Yes	84	81.2	0.09
	No	56	58.8	0.13
Kalaburagi	Yes	70	81.2	1.54
	No	70	58.8	2.13
Total χ^2 Value	–	–	–	6.30
Degrees of Freedom (df)	–	–	–	2
Chi-square Value	–	–	–	5.99

Source: Field Study

The result of the chi-square test ($\chi^2 = 6.30$, df = 2) is slightly higher than the critical value (5.99), which means that the difference between the digital banking adoption in the three rural districts is statistically significant. The digital banking users in Belagavi and Haveri are higher than expected whereas Kalaburagi has lower counts of users. The difference implies that the use of digital banking is not evenly distributed among the districts. These regional disparities might be affected by factors like infrastructure, literacy, and awareness, and the policy interventions required in the districts should be specific to that district to enhance digital financial inclusion.

Table 2: Financial Inclusion Based on Digital Banking Usage

Group	Mean (M)	SD	Minimum	Maximum
Digital Banking Users	7.20	1.40	4	10
Non-Users	5.80	1.60	2	9
Overall	6.60	1.70	–	–

Source: Field Study

The Financial Inclusion scores are compared to find out that the mean score is significantly higher among digitally active people (7.20) than among non-digital users (5.80), which demonstrates that there is better financial inclusion among digitally active individuals. The non-users have lower minimum and maximum scores implying that they have limited access to formal financial services or are not familiar with them. The comparison of standard deviations additionally indicates that the non-users have slightly greater variability in the scores. The aggregate mean of 6.60 is indicative of moderate inclusion, on the whole, with digital engagement becoming one of the significant drivers. These results indicate that the level of financial inclusion in rural communities is largely improved by the consumption of digital banking.

Table 3: Major Barriers Faced by Rural Households While Using Digital Banking

Barrier Category	Percentage (%)
Poor Internet Network / Connectivity	27.50%
Low Digital Literacy	23.75%
Fear of Fraud / Cybersecurity Issues	20.00%
Preference for Cash Transactions	17.50%
Language / Interface Issues	11.25%
Total	100%

Source: Field Study

The barriers analysis shows that the greatest obstacle is the lack of internet connection as it impacts 27.50% of rural households and points out to the infrastructural deficiencies of rural Karnataka. The second category with low digital literacy is at 23.75, which implies that a good number of users remain incompetent with digital platforms. The 20% fear of fraud and cybersecurity concerns indicate an increase in the fear of online safety and confidence. There is a conservative tendency to cash-based operations (17.50), which implies a behavioral barrier to digital transition. The language and interface problems, with a somewhat lower score of 11.25, also demonstrate that more convenient regional language interfaces should be offered to enhance the level of digital banking adoption.

Conclusion

This research demonstrates that digital banking has already been able to become a strong catalyst to further financial inclusion in rural Karnataka, but it has not yet been able to realise its benefits in an equal manner. Statistical results of a unified data in the secondary sources show that there are critical differences between inter-districts in regard to the digital adoption and a positive correlation is strong between digital usage and financial inclusion level. Nonetheless, limitations connected with the networks quality, digital literacy and fear of scam still limit meaningful usage. This policy should thus go beyond opening accounts to enhancing digital infrastructure, vernacular and user-friendly interfaces, cybersecurity and door-step care by business correspondents to bring about inclusive and responsible digital finance in rural Karnataka.

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