

Digital Payment Systems and Financial Inclusion in Rural India: A Pre-Pandemic Baseline Study

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ABSTRACT

Before the COVID-19 pandemic catalyzed an unprecedented wave of digital adoption, rural India had already embarked on a transition towards digitized financial transactions, driven by initiatives such as the Pradhan Mantri Jan Dhan Yojana (PMJDY), the Aadhaar-enabled Payment System (AePS), and mobile-based banking solutions. This study explores the state of digital payment systems in rural India before the onset of the pandemic, providing a critical baseline to understand the progress and gaps in financial inclusion. By surveying 1,200 households across Bihar, Rajasthan, Maharashtra, and Tamil Nadu and analyzing secondary datasets, the paper investigates the socio-economic, infrastructural, and behavioral factors influencing the adoption and usage of digital financial services. The findings reveal substantial regional disparities in access and adoption, underscoring the role of education, mobile ownership, gender, and internet connectivity. This baseline analysis serves not only to map the pre-pandemic landscape but also to guide post-pandemic digital strategies aimed at inclusive financial growth.

Keywords:

Digital Payments, Financial Inclusion, Rural India, JAM Trinity, UPI, AePS, Pre-Pandemic Baseline

INTRODUCTION:

Over the past decade, India has witnessed a significant transformation in its financial ecosystem, largely fueled by the integration of digital technology into banking and payment systems. Government-led initiatives, such as the PMJDY, Aadhaar, and the Unified Payments Interface (UPI), have aimed to expand financial services to previously unbanked populations, with a particular focus on rural inclusion. Despite these efforts, a substantial gap persists in digital payment adoption between urban and rural regions, largely due to infrastructural limitations, digital illiteracy, and socio-cultural barriers.

The need for financial inclusion in rural India stems from both economic and social imperatives. Access to formal financial services enhances savings, provides security, enables credit access, and contributes to the overall economic empowerment of rural households. However, while account ownership has increased due to policy pushes, the active usage of digital payment services remains limited. Many accounts remain dormant, and a significant proportion of the rural population continues to rely on cash-based transactions.

This paper aims to present a comprehensive pre-pandemic profile of digital payment adoption in rural India, drawing on data from four geographically and socio-economically diverse states. It seeks to understand the multifaceted barriers to digital financial inclusion and assess how socio-demographic variables, infrastructure availability, and institutional support affect financial behavior. By identifying the strengths and weaknesses in the pre-COVID digital landscape, this study provides a foundation for measuring future progress and formulating effective interventions in the evolving digital economy.

Objectives:

1. To assess the availability and adoption of digital payment systems in rural regions across four representative states.
2. To examine the role of socio-economic factors such as education, gender, income, and mobile ownership in digital financial inclusion.
3. To identify the infrastructural and behavioral barriers to digital adoption in rural India.
4. To provide a policy-oriented framework that could inform post-pandemic digital financial strategies.

REVIEW OF LITERATURE:

The literature on financial inclusion in India has increasingly focused on the intersection of technology and access. **Demircuc-Kunt et al. (2018)** in the Global Findex Report observed a steady rise in account ownership, but pointed out a persistent usage gap, especially in rural and female populations.

Mor and Ananth (2017) emphasized that while bank accounts had become ubiquitous, active usage remained limited. Their study highlighted the importance of digital payments in turning dormant accounts into transaction-enabled ones. The JAM trinity (Jan Dhan-Aadhaar-Mobile) introduced under the Digital India mission has been lauded as a potential game-changer, but studies such as **Karmakar and Banerjee (2019)** noted that infrastructural gaps—like intermittent internet, low smartphone penetration, and power outages—continued to hinder adoption. **RBI (2019)** reported a year-on-year rise in AePS and UPI transactions, but its Financial Inclusion Index showed stark rural-urban disparities. Ghosh (2020) argued that digital literacy and handholding were more significant determinants of adoption than income levels or geographic location. Studies by **IFMR (2018)** and **CGAP (2019)** also emphasized trust and fear of fraud as barriers to digital usage among first-time users.

This review underscores that while the policy push and technological infrastructure were in place, behavioral and access-related constraints limited the potential of digital payment systems in rural India.

Methodology:

This study employs a mixed-method approach to build a baseline dataset on digital financial inclusion in rural India.

Study Area and Sampling:

Four Indian states—Bihar, Rajasthan, Maharashtra, and Tamil Nadu—were selected for their regional diversity and varied performance on financial inclusion indicators. From each state, three rural districts were chosen using stratified sampling, and from each district, 100 households were surveyed, totaling 1,200 respondents.

Data Collection:

- **Primary Data:** Structured questionnaires and in-person interviews with heads of households, shopkeepers, and banking correspondents.
- **Secondary Data:** RBI bulletins, NPCI data, UIDAI statistics, PMJDY dashboard, NSSO rounds on household consumption and ICT usage.

Analytical Framework:

1. **Descriptive Statistics:** For summarizing access to smartphones, bank accounts, internet, and digital payment usage.
2. **Logistic Regression Models:** To identify significant predictors of digital payment adoption such as literacy level, mobile ownership, and gender.

3. **SWOT Analysis:** Strengths, weaknesses, opportunities, and threats in existing infrastructure and policy frameworks.
4. **GIS Mapping:** To visualize infrastructure availability and network connectivity in sample regions.

Limitations:

- Self-reported data may be affected by recall bias.
- Findings may not generalize to all rural regions due to localized socio-cultural dynamics.
- Seasonal factors like agricultural cycles may have influenced transaction behavior.

Expected Outcomes:

- A comprehensive profile of rural digital readiness and financial behavior before COVID-19.
- Identification of critical bottlenecks in the digital financial ecosystem.
- A baseline reference for measuring post-pandemic improvements in digital inclusion.

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