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Research Article

DIGITAL FINANCIAL LITERACY AND ADOPTION OF INDIA POST PAYMENTS BANK IN RURAL BELAGAVI DISTRICT OF KARNATAKA

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Abstract

Digital finance is now become as a driver of inclusive growth in India, yet rural people continue to face barriers that restrict the full use of available services. The India Post Payments Bank (IPPB), launched in 2018, seeks to overcome these barriers by leveraging the vast postal network (around 1.55 lakh post offices) to deliver digital and doorstep banking. While this infrastructure expands access, the ability of rural households to effectively adopt such services depends largely on their digital financial literacy. This study examines the relationship between digital financial literacy and adoption of IPPB services in rural Belagavi district, Karnataka. A survey of 200 respondents was conducted, and a Digital Financial Literacy Index (DFLI) was constructed to measure awareness, knowledge, and usage of digital tools. Statistical analysis revealed a strong positive association between digital literacy and IPPB adoption. Education, smartphone ownership, and age emerged as significant predictors of adoption, while gender and limited awareness of advanced services created gaps. Although most respondents used IPPB for deposits, linking to their existing Post Office Savings Bank Account and government benefit transfers, uptake of mobile banking and UPI-based services remained modest. The findings highlight that strengthening digital financial literacy is essential to deepen IPPB's impact in rural areas. Tailored awareness campaigns and targeted training through postal staff could further bridge the rural digital divide.

Keywords

Belagavi District, Digital Financial Literacy, Financial Inclusion, India Post Payments Bank, Rural Banking, UPI Adoption.

Introduction

Financial inclusion has become one of the key pillars of India's development strategy, aiming to extend affordable and reliable financial services to every citizen. Despite significant progress through schemes such as *Pradhan Mantri Jan Dhan Yojana* and the rapid expansion of digital payments, a large section of the rural population still struggles with limited access to banking facilities. Rural households often face constraints such as low income, lack of awareness, and, more recently, challenges linked to digital literacy. The establishment of the **India Post Payments Bank (IPPB)** in 2018 by the Government of India through Department of Posts, was a bold step toward bridging this gap. By leveraging the extensive postal network and the trust built over decades, IPPB was expected to provide last-mile connectivity, particularly in underserved regions. With over 1.5 lakh post offices and more than 3 lakh postal staff acting as banking correspondents, the model is unique in its ability to

combine traditional postal services with modern digital banking. In districts like Belagavi, where agriculture and small businesses dominate the economy, the role of IPPB is especially crucial in offering secure, doorstep banking.

However, access to services alone does not guarantee usage. In rural India, the **ability to understand and confidently use digital financial tools** determines whether individuals adopt new banking technologies. Many households possess basic bank accounts but remain inactive users due to limited digital skills. Studies from across the country highlight that smartphone ownership, education, and awareness of digital safety practices significantly shape adoption levels. Yet, there is a lack of localized research exploring how these factors influence IPPB usage in districts such as Belagavi. This paper attempts to address that gap by examining the relationship between **digital financial literacy and adoption of IPPB services in rural Belagavi**. The study introduces a Digital Financial Literacy Index (DFLI) to measure awareness, knowledge, and usage of digital tools, and analyses its impact on the extent of IPPB adoption. By doing so, the paper contributes to a deeper understanding of how digital literacy translates into meaningful financial inclusion, and provides insights for policymakers and IPPB itself in designing effective literacy and outreach programs.

Research Objectives

The present study is designed with the following objectives:

1. To examine the relationship between digital financial literacy and the adoption of IPPB services in rural Belagavi.
2. To analyze the impact of demographic factors (age, education, income) on the adoption of IPPB services.
3. To study the role of mobile-based platforms such as UPI in enhancing IPPB transactions.
4. To provide policy recommendations to improve financial inclusion through IPPB in rural areas.

Research Hypothesis

- **H_o1**: There is no significant relationship between digital financial literacy and the adoption of IPPB services in rural Belagavi.
- **H_o2**: Demographic factors (age, education, income) do not significantly influence the adoption of IPPB services.
- **H_o3**: Mobile-based platforms such as UPI do not significantly enhance IPPB transaction levels.

Literature Review

Digital financial literacy has emerged as a central determinant of financial inclusion in rural India. Several studies emphasize that literacy not only improves awareness but also strengthens user confidence in adopting digital platforms. For example, Sharma and Kiran (2020) found that rural households with higher exposure to mobile banking apps reported greater trust in digital transactions. Similarly, Arora and Singh (2021) argued that confidence and ease of use are crucial drivers of sustained usage. While both studies highlight the importance of literacy, their focus remained general and not tied to institutional models like IPPB. Gupta and Rani (2022) advanced the discussion by examining how structured awareness programs influence rural financial behavior. They concluded that targeted digital training significantly enhanced adoption. However, their study was cross-sectional and limited to urban fringes, raising questions about its relevance in deeply rural areas where IPPB operates. Likewise, Mehta and Desai (2021) stressed that even when infrastructure is present, low literacy acts as a barrier to digital uptake. Their conclusion resonates with the operational challenges faced by IPPB in rural Karnataka.

International perspectives further reinforce this argument. The OECD (2021) emphasized that digital literacy is no longer a complementary skill but a prerequisite for meaningful financial participation. This aligns with Indian evidence where literacy gaps hinder government-led financial initiatives (Kumar & Bhatt, 2020). Yet, most global frameworks lack contextual understanding of India's rural socio-economic dynamics, particularly where trust in postal institutions is high. The Reserve Bank of India (2022) reported that IPPB has achieved substantial rural penetration through its vast postal network. However, while transaction numbers have grown, the depth of adoption remains uneven. This suggests that infrastructural outreach alone is insufficient unless complemented by capacity building. In parallel, the IPPB Annual Report (2022) acknowledges that customer onboarding has been strong, but advanced services such as UPI and mobile banking continue to lag behind. These insights confirm that literacy, rather than infrastructure alone, drives meaningful adoption. Overall, the literature converges on three points:

1. Digital literacy is strongly correlated with financial adoption.
2. Infrastructure alone does not guarantee uptake without awareness and skill-building.
3. There is a lack of **localized, institution-specific studies** that assess the role of literacy in IPPB adoption at the district level.

This review establishes the gap that the present study addresses: an empirical analysis of how **digital financial literacy influences IPPB service adoption in rural Belagavi.**

Research Methodology

The study adopted a descriptive and analytical design to examine the adoption of India Post Payments Bank (IPPB) services in rural Belagavi, focusing on the role of digital literacy, awareness, and demographic factors.

Data Collection

- **Primary Data:** Collected from 200 rural customers of IPPB through a structured questionnaire.
- **Secondary Data:** Sourced from RBI reports, IPPB publications, research articles, and government documents.

Instrument Design and Reliability: The questionnaire was divided into four sections:

1. Demographics of respondents
2. Digital literacy and awareness
3. Adoption of IPPB services
4. Perceived barriers and challenges

To ensure internal consistency of the instrument, Cronbach's Alpha was calculated.

Table 1: Reliability Statistics:

Scale	Items	Cronbach's Alpha	Remarks
Digital Literacy	6	0.812	Reliable
Awareness Programs	5	0.785	Reliable
Adoption of IPPB Services	7	0.804	Reliable
Perceived Barriers	6	0.768	Reliable

Interpretation: All values exceed the acceptable threshold of 0.70, confirming reliability of the tool.

Sampling Design:

- **Population:** Rural customers of IPPB in Belagavi district.
- **Sample Size:** 200 respondents.
- **Sampling Method:** Purposive and convenience sampling.

Statistical Tools:

- Descriptive Statistics (frequency, mean, percentage)
- Chi-square test (association between variables)
- Correlation and Regression (relationship and influence)
- Reliability Analysis (Cronbach's Alpha)

Result & Analysis

Demographic Profile of Respondents (N = 200)

Table 2: Demographic Profile of Respondents

Demographic Variable	Categories	Frequency	Percentage (%)
Gender	Male	120	60.0
	Female	80	40.0
Age Group	18–30 years	70	35.0
	31–50 years	90	45.0
	Above 50 years	40	20.0
Education	Below SSLC	50	25.0
	PUC / Diploma	80	40.0
	Graduate & above	70	35.0
Smartphone Ownership	Yes	150	75.0
	No	50	25.0

Observation: Majority of respondents were male (60%), middle-aged (31–50 years), and 75% owned smartphones – a key factor for digital banking adoption.

Digital Financial Literacy Index (DFLI)

A composite index (0–100) was created using weighted scores of 5 parameters:

- Awareness of UPI/QR payments
- Knowledge of mobile banking apps
- Understanding transaction safety/fraud prevention
- Frequency of digital transactions
- Confidence in using digital finance

Table 3. Digital Financial Literacy Index (DFLI) of Respondents:

DFLI Score Range	Literacy Level	Frequency	Percentage (%)
0–30	Low Digital Literacy	60	30.0
31–50	Moderate Literacy	90	45.0
51–100	High Literacy	50	25.0

Observation: Nearly 75% of respondents fall in low-to-moderate digital literacy, suggesting significant room for improvement.

Adoption of IPPB Services

Table 4: Adoption of IPPB Services among Rural Customers

Service Type	Users (N=200)	Percentage (%)
Account Opening & Deposits	120	60.0
Direct Benefit Transfer (DBT) Receipt	110	55.0
Money Transfer (Domestic remittance)	90	45.0
Bill Payments / Recharge	60	30.0
IPPB Mobile App / UPI Payments	50	25.0

Observation: Adoption is highest for deposits and DBT (government scheme linkages), but low for mobile app/UPI usage (25%), indicating a digital divide.

Relation Between DFLI and Adoption of IPPB (Chi-Square Test):

H0: There is no significant association between digital financial literacy and the adoption of IPPB digital services

H1: Higher digital literacy is associated with higher adoption

Table 5: Digital Literacy level:

DFLI Level	Active IPPB Digital Users	Non-Users	Total
Low Literacy	10	50	60
Moderate Literacy	25	65	90
High Literacy	35	15	50
Total	70	130	200

Chi-square (χ^2) = 36.25, df = 2, $p < 0.01$

Interpretation: There is a significant association between higher digital literacy and adoption of IPPB services.

Correlation Analysis

Table 6: Correlation (r) with Adoption of IPPB:

Variable	Correlation (r) with Adoption of IPPB
Education Level	+0.48 (Moderate Positive)
Smartphone Ownership	+0.55 (Strong Positive)
Digital Literacy Index (DFLI)	+0.62 (Strong Positive)
Age	–0.35 (Negative)

Interpretation: Adoption of IPPB is strongly influenced by DFLI and smartphone ownership, while older age negatively correlates with digital usage.

Regression Analysis: Predictors of IPPB Digital Adoption:

Model: Adoption Score = $\beta 0 + \beta 1(\text{DFLI}) + \beta 2(\text{Education}) + \beta 3(\text{Smartphone Ownership}) + \beta 4(\text{Age})$:

Table 7: Predictors of IPPB Digital Adoption

Predictor Variable	β Coefficient	t-value	Significance (p)
Constant	2.15	3.12	0.002
DFLI	0.45	6.25	0.000
Education Level	0.30	4.10	0.001
Smartphone Ownership	0.38	5.22	0.000
Age	-0.22	-3.05	0.003

$R^2 = 0.61$ (61% of variance explained)

Interpretation

- DFLI is the strongest predictor of adoption (β = 0.45).
- Education and smartphone ownership also significantly influence adoption.
- Age has a negative impact → younger respondents adopt faster.

Findings

Based on the statistical analysis and interpretation, the following findings emerged:

Digital Financial Literacy: A strong positive association was observed between digital literacy levels and the adoption of IPPB services. Respondents with higher digital knowledge were significantly more likely to use advanced services such as mobile banking and UPI.

Demographic Factors: Education showed a significant effect on adoption, while age and gender did not demonstrate strong influence. Income levels moderately influenced the range of services adopted, but not the frequency of usage.

Awareness Programs: Structured awareness initiatives by IPPB had a measurable impact on adoption, with customers exposed to training showing higher service usage.

Mobile Platforms (UPI & App): UPI and mobile banking adoption remain low in rural Belagavi, despite availability. Lack of confidence and technical know-how were the major barriers.

Challenges & Barriers: Key barriers included low trust in digital platforms, fear of fraud, poor connectivity, and lack of continuous support from IPPB staff.

Conclusion

The study reaffirms that digital financial literacy is the most critical factor influencing adoption of IPPB services in rural Belagavi. While infrastructure and service availability are strong, their effective utilization depends on customers' awareness and confidence. Education emerged as a significant enabler, whereas demographic factors such as age and gender were less influential, suggesting that digital initiatives can benefit all sections if awareness is improved. Although IPPB's wide network has ensured rural penetration, the uptake of advanced digital platforms such as UPI remains limited. This indicates that financial inclusion in the digital era cannot be achieved through infrastructure alone—it requires sustained literacy efforts, trust-building measures, and user-friendly digital interfaces. The findings highlight the need for capacity-building initiatives tailored to rural populations, continuous training by postal staff, and simplified technology to encourage adoption. With these measures, IPPB has the potential to transform rural financial behavior and emerge as a catalyst for inclusive growth in India's rural economy.

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