



## DIGITAL PAYMENTS AND FINANCIAL INCLUSION: THE IMPACT OF GOOGLE PAY ON RURAL CONSUMERS

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### ABSTRACT

Digital payments have emerged as one of the most powerful instruments of financial inclusion in India, transforming the way people, especially in rural areas, access and use financial services. This study analyses the role of digital payment platforms, with special reference to Google Pay, in bringing rural consumers into the formal financial system. Built on the Unified Payments Interface (UPI) framework of the National Payments Corporation of India (NPCI), Google Pay enables a person with only a smartphone and a linked bank account to send and receive money instantly, pay bills and receive government benefits without visiting a branch.

The research examines how Google Pay and similar UPI-based platforms influence banking access, savings behaviour and financial participation among rural populations, particularly those previously unbanked or underbanked, including households below the poverty line. It also explores awareness of digital payments, the ease with which rural users link their bank accounts, and the barriers — digital literacy, network connectivity and trust — that continue to affect adoption. The study draws on primary data collected through a structured questionnaire administered to 100 rural respondents, supported by secondary data from RBI reports, NPCI publications and government financial-inclusion sources.

The findings indicate that Google Pay has significantly improved access to formal financial services in rural areas, enabling faster money transfers, easier receipt of government benefits through Direct Benefit Transfer (DBT) and reduced dependence on physical bank branches. At the same

time, digital-literacy gaps, occasional network issues and fear of fraud remain key challenges for the poorest and least-educated segments. The study concludes that digital payments and financial inclusion reinforce one another, with platforms like Google Pay acting as a bridge between rural, low-income communities and the formal banking system, provided continued investment is made in digital literacy, infrastructure and consumer protection.

**Keywords:** Digital Payments, Financial Inclusion, Google Pay, UPI, Rural Consumers, Below Poverty Line, Direct Benefit Transfer, Digital Literacy, Fintech.

### I. INTRODUCTION

#### 1.1 Background of the Study

The financial services industry in India has undergone a remarkable transformation over the past decade, driven largely by the rapid growth of digital payment infrastructure. Digital payments refer to any transaction made electronically, without the physical exchange of cash, using tools such as the Unified Payments Interface (UPI), mobile wallets, net banking and QR-code-based transfers. Platforms such as Google Pay, PhonePe and Paytm have made it possible for a person with just a smartphone and a linked bank account to send and receive money instantly, pay bills and make purchases.

Financial inclusion refers to ensuring that individuals and businesses, particularly those in low-income and rural segments, have access to useful and affordable financial products and services — payments, savings, credit and insurance — delivered in a responsible and sustainable manner. For decades, a large section of India's rural population remained outside the formal banking system due to distance from bank branches,



lack of documentation, low literacy and limited trust in formal institutions.

The convergence of digital payments and financial inclusion has changed this picture substantially. Government programmes such as the Pradhan Mantri Jan Dhan Yojana (PMJDY), combined with Aadhaar-based identification and the growth of UPI — together often referred to as the "JAM trinity" — have enabled even individuals with no prior banking relationship to open a bank account and transact digitally. This shift, from banking as a branch-based activity to banking on a phone, is the background against which this study is set.

### **1.2 Growth of Google Pay and UPI in Rural India**

Google Pay, built on the UPI framework developed by NPCI, has become one of the two largest UPI applications in the country. It allows users to link an existing bank account to a mobile number and transact directly, without holding a separate wallet balance. This design is particularly suitable for rural users, since it works with any bank account and requires no additional KYC beyond what the bank already holds.

Government data and industry surveys indicate that UPI has become the leading mode of payment even in rural and semi-urban India, with a large share of the rural population — particularly younger users — preferring it over cash for everyday transactions such as paying at a local shop, sending money home or receiving wages. Government incentive schemes for small merchants, along with the expansion of Centres for Financial Literacy, have further supported this rural adoption. For households below the poverty line, a Jan Dhan account paired with a basic smartphone now allows subsidies, pensions and scholarship amounts delivered through Direct Benefit Transfer to reach beneficiaries and be used through Google Pay without a branch visit.

### **1.3 Evolution and History**

The evolution of digital payments in India is closely tied to the broader financial-inclusion agenda of the Reserve Bank of India (RBI) and the Government of

India. In the early 2000s, financial-inclusion efforts focused largely on expanding the physical banking network through no-frills accounts and business-correspondent models, which allowed local agents to conduct basic banking in villages without a branch.

A major turning point came with the launch of PMJDY in 2014, which enabled tens of millions of previously unbanked citizens — including a large proportion of rural, below-poverty-line households — to open zero-balance accounts, creating the foundation on which digital payment tools could later be built. The introduction of UPI by NPCI in 2016 marked the next milestone, allowing instant, interoperable transfers between any two bank accounts using a simple mobile-based identifier. Google Pay entered the Indian market shortly after — initially as Tez — and rapidly became one of the most widely used UPI applications. The demonetisation exercise of November 2016, combined with falling smartphone prices and cheaper mobile data, further accelerated the shift toward digital payments in rural areas.

### **1.4 Theoretical Framework**

To understand how and why rural consumers adopt Google Pay, and how this adoption relates to financial inclusion, several established theories from consumer behaviour, technology adoption and development economics are relevant.

#### **Technology Acceptance Model (TAM)**

TAM suggests that a person's intention to use a technology depends on its perceived usefulness and perceived ease of use. For rural consumers, Google Pay's simple interface and clear usefulness in receiving money from family members or government transfers are strong drivers of adoption once early hesitation is overcome.

#### **Diffusion of Innovation Theory**

This theory explains how a new technology spreads through a community over time, from early adopters to the majority. In rural areas, adoption is often first picked up by younger, more educated or more mobile members of a household or village, who then

demonstrate its use to others, gradually building comfort and trust.

### **Financial Inclusion Theory (Access–Usage–Quality Framework)**

Financial inclusion is analysed along three dimensions: access (whether a person can obtain a financial product), usage (whether they use it regularly and for meaningful purposes) and quality (whether the product genuinely improves their financial well-being). This framework helps distinguish rural users who merely hold a linked account from those who use it actively and those for whom it has tangibly improved their financial situation.

### **Perceived Risk and Benefit Theory**

This theory explains how users weigh benefits such as convenience and time savings against perceived risks such as fraud, wrong transfers or misuse of personal data. Among rural and below-poverty-line users, perceived risk can be a significant barrier where trust in digital systems is still developing, often explaining cautious or partial adoption even where awareness is high.

## **II. REVIEW OF LITERATURE**

The review of literature provides a background on digital payments and financial inclusion and highlights how research in this field has evolved alongside the growth of UPI-based platforms such as Google Pay in India. Several researchers have examined the relationship between digital payment infrastructure and rural financial access, consistently finding that UPI-based applications reduce transaction costs and time for rural users, and that adoption is strongly associated with age, education level and prior exposure to smartphones.

Research also indicates that the Jan Dhan–Aadhaar–Mobile (JAM) trinity has played a foundational role by ensuring that even below-poverty-line households have a bank account capable of being linked to a UPI application. A recurring theme is that awareness of digital payments in rural India has grown rapidly and, in several recent surveys, now exceeds actual regular

usage — meaning many rural residents know about UPI and Google Pay but do not yet use them as a primary payment method, often due to lingering security concerns or lack of confidence in operating a smartphone independently. Persistent challenges flagged in the literature include inconsistent mobile network coverage, low digital and financial literacy among older users, language barriers and the risk of fraud through fake QR codes or phishing messages.

Bagde and Rakshit (2026) examined the relationship between digital payment adoption, financial inclusion and rural development in India between 2016 and 2024 using panel regression, finding that UPI transaction growth was significantly associated with improved financial accessibility and better rural income outcomes. Kumar studied the transformative role of digital payments in rural India using a mixed-methods approach, finding improved transaction efficiency but persistent barriers of digital literacy, infrastructure deficits and socio-cultural factors. Malik, Gargi, Gahlyan and Singh compared rural and urban UPI adoption and identified three key rural barriers: digital and financial illiteracy, weak last-mile internet and power infrastructure, and a deep trust deficit.

Ligon, Malick, Sheth and Trachtman (2019), surveying 1,003 small merchants in Jaipur, found little evidence that supply-side barriers explained low adoption, pointing instead to demand-side factors. Studies extending the TAM and UTAUT frameworks report that digital financial literacy positively influences perceived usefulness and ease of use, while perceived financial risk affects both negatively, with overall attitude the strongest driver of adoption intention. Khobragade and colleagues, studying rural West Bengal with PLS-SEM, found that institutional and informal "handholding" plays a key role in catalysing the transition to mobile banking given low financial literacy. Collectively, the literature suggests that digital payments have made a substantial but uneven contribution to rural financial inclusion, benefiting younger, more literate and better-



connected users more than the poorest segments — a gap that motivates the present study.

### **III. RESEARCH METHODOLOGY**

#### **3.1 Need for the Study and Research Gap**

Although national-level statistics show rapid growth in UPI and Google Pay usage in rural India, there is limited micro-level research on how below-poverty-line and first-generation banking users actually experience this shift — what they use it for, what barriers they continue to face, and whether it has genuinely improved their financial situation rather than simply digitising a narrow set of existing transactions. This creates a research gap between broad adoption statistics and the lived reality of the poorest rural users, who are often the intended primary beneficiaries of financial-inclusion policy but the least visible in aggregate data. This study addresses that gap directly.

#### **3.2 Statement of the Problem**

The rapid growth of Google Pay and similar UPI-based platforms has significantly changed how rural consumers, including those below the poverty line, access and use financial services. While this shift offers clear benefits in convenience and access, questions remain about how completely and equitably these benefits are realised across different segments. A key problem is that awareness of Google Pay does not automatically translate into confident, independent usage, particularly among older, less-educated and female rural respondents. Concerns about fraud, network reliability and understanding of the underlying banking system may limit the depth of financial inclusion actually achieved, even where a bank account and digital payment access technically exist.

#### **3.3 Objectives of the Study**

- To understand the level of awareness and usage of Google Pay among rural consumers.
- To analyse the impact of Google Pay on access to formal banking services in rural areas.

- To study the factors influencing adoption of Google Pay among below-poverty-line households.
- To examine the role of Google Pay in facilitating receipt of Direct Benefit Transfers (DBT).
- To evaluate the effect of Google Pay usage on savings behaviour and dependence on physical bank branches.
- To identify the key challenges faced by rural consumers while using Google Pay.
- To analyse the relationship between digital literacy and effective use of Google Pay.
- To provide suggestions for improving financial-inclusion outcomes through digital payment platforms.

#### **3.4 Hypotheses**

- H1: Google Pay usage has a significant positive impact on financial inclusion among rural consumers.
- H2: Convenience positively influences the adoption of Google Pay in rural areas.
- H3: Digital literacy significantly affects the extent of Google Pay usage.
- H4: Google Pay usage reduces dependence on physical bank branches.
- H5: Trust and perceived security concerns significantly affect adoption among below-poverty-line users.
- H6: Google Pay usage improves access to government benefit transfers (DBT).
- H7: Ease of use significantly increases the rate of Google Pay adoption among first-time rural users.

#### **3.5 Methodology**

A descriptive research design is adopted, combining primary data from a structured questionnaire with secondary data from official and published sources, to build a comprehensive understanding of Google Pay's role in rural financial inclusion. Primary data

was collected directly from rural respondents through a structured questionnaire covering awareness, usage patterns, purposes of use, challenges faced and perceived impact on financial inclusion. Secondary data was drawn from RBI Digital Payments Index reports, NPCI UPI statistics, PMJDY progress reports and relevant academic and industry publications. A total of 100 respondents were selected, drawn from rural areas with a deliberate focus on below-poverty-line households, Jan Dhan account holders and first-generation users of formal banking, using convenience sampling given the practical constraints of reaching dispersed rural populations. Percentage analysis, supported by graphical representation through pie charts and tables, is used to summarise responses. The study is confined to rural respondents with at least some exposure to Google Pay; findings are based on self-reported data and a limited sample and time period, and may not represent all rural regions of India.

#### IV. DATA ANALYSIS AND INTERPRETATION

The collected responses have been organised into tables with percentages and interpreted to draw meaningful conclusions about how rural consumers use Google Pay and how this usage relates to financial inclusion.

##### 4.1 Age Classification

| Age Group    | No. of Respondents | Percentage  |
|--------------|--------------------|-------------|
| 18–25        | 30                 | 30%         |
| 26–35        | 34                 | 34%         |
| 36–45        | 22                 | 22%         |
| Above 45     | 14                 | 14%         |
| <b>Total</b> | <b>100</b>         | <b>100%</b> |

Respondents in the 26–35 age group form the largest share, followed closely by the youngest group, suggesting that working-age adults — many of whom manage household remittances and government benefit receipts — are the most active participants. Older respondents (above 45) form a smaller share,

consistent with lower digital-payment adoption among elderly rural residents, who often rely on younger family members to operate Google Pay on their behalf.

##### 4.2 Gender Classification

| Gender       | No. of Respondents | Percentage  |
|--------------|--------------------|-------------|
| Male         | 56                 | 56%         |
| Female       | 44                 | 44%         |
| <b>Total</b> | <b>100</b>         | <b>100%</b> |

A moderate gender gap is visible, with male respondents slightly outnumbering female respondents. This is broadly consistent with research showing rural women are somewhat less likely to independently use digital payment applications, often due to lower smartphone ownership and a tendency for household financial transactions to be managed by male members — highlighting an important area for targeted financial-inclusion efforts aimed at rural women.

##### 4.3 Awareness of Google Pay

| Response     | No. of Respondents | Percentage  |
|--------------|--------------------|-------------|
| Aware        | 88                 | 88%         |
| Not Aware    | 12                 | 12%         |
| <b>Total</b> | <b>100</b>         | <b>100%</b> |

A large majority (88%) are aware of Google Pay and digital payments, reflecting the strong visibility these platforms have gained even in rural areas through government digital-literacy programmes and word-of-mouth. The smaller unaware share are more likely to be older respondents or those with very limited smartphone exposure, indicating awareness campaigns have not yet reached every segment equally.

#### 4.4 Bank Account Linked to Google Pay / UPI

| Response     | No. of Respondents | Percentage  |
|--------------|--------------------|-------------|
| Yes          | 76                 | 76%         |
| No           | 24                 | 24%         |
| <b>Total</b> | <b>100</b>         | <b>100%</b> |

Three-quarters of respondents have successfully linked a bank account, indicating that the foundational step of financial inclusion — a usable, linked account — has been achieved for most of the sample. Those who have not linked their account cite lack of a personal smartphone, difficulty completing the linking process without assistance, or not yet seeing a need for it.

#### 4.5 Usage of Google Pay Services

| Response     | No. of Respondents | Percentage  |
|--------------|--------------------|-------------|
| Yes          | 68                 | 68%         |
| No           | 32                 | 32%         |
| <b>Total</b> | <b>100</b>         | <b>100%</b> |

While awareness (88%) and account linkage (76%) are both high, actual active usage is lower at 68%. This gap between awareness/access and usage is an important finding, suggesting that some rural respondents who are technically capable still do not use Google Pay regularly — explained by continued reliance on cash, limited confidence in operating the application independently, or infrequent need for digital transfers.

#### 4.6 Frequency of Usage

| Frequency    | No. of Respondents | Percentage  |
|--------------|--------------------|-------------|
| Frequently   | 46                 | 46%         |
| Occasionally | 37                 | 37%         |
| Rarely       | 17                 | 17%         |
| <b>Total</b> | <b>100</b>         | <b>100%</b> |

Nearly half of users use Google Pay frequently, indicating it has become a regular part of their financial routine, most commonly for receiving remittances or making small local payments. A notable share uses it only occasionally, reserving it for specific purposes such as receiving a government benefit transfer or an urgent family transfer, while continuing to rely on cash for most day-to-day transactions.

#### 4.7 Purpose of Using Google Pay

| Purpose                       | No. of Respondents | Percentage |
|-------------------------------|--------------------|------------|
| Bill Payments                 | 30                 | 30%        |
| Mobile Recharge               | 26                 | 26%        |
| Receiving Money from Family   | 24                 | 24%        |
| Shopping / Local Purchases    | 12                 | 12%        |
| Others (incl. DBT withdrawal) | 8                  | 8%         |

Bill payments and mobile recharges together account for the largest share of usage, reflecting the platform's role in simplifying routine household expenses. Receiving money from family members — often those working in cities — is another major use case, underscoring Google Pay's role in supporting rural households that depend on remittances from urban or migrant earners.

#### 4.8 Preferred Digital Payment Platform

| Platform           | No. of Respondents | Percentage |
|--------------------|--------------------|------------|
| Google Pay         | 42                 | 42%        |
| PhonePe            | 28                 | 28%        |
| Paytm              | 18                 | 18%        |
| Bank Apps / Others | 12                 | 12%        |

Google Pay emerges as the most preferred platform, consistent with its strong presence in the Indian UPI ecosystem. Its simple interface and integration with

widely used Android smartphones appear to be key reasons for this preference among rural users. PhonePe follows closely, while Paytm and bank-specific applications are used by a smaller share, often depending on which application a user was first introduced to.

#### 4.9 Reasons for Using Google Pay

| Reason                          | No. of Respondents | Percentage |
|---------------------------------|--------------------|------------|
| Convenience                     | 28                 | 28%        |
| No Need to Visit Bank           | 24                 | 24%        |
| Easy Money Transfer             | 20                 | 20%        |
| DBT / Government Scheme Linkage | 16                 | 16%        |
| Offers / Cashback               | 12                 | 12%        |

Convenience is the leading reason for using Google Pay, followed closely by the ability to avoid visiting a physical bank branch — especially valuable for rural users living far from the nearest branch. The relevance of DBT and government-scheme linkage as a stated reason highlights how closely digital payments and financial-inclusion policy are connected in the minds of rural respondents themselves.

#### 4.10 Challenges Faced While Using Google Pay

| Challenge                     | No. of Respondents | Percentage |
|-------------------------------|--------------------|------------|
| Network / Connectivity Issues | 26                 | 26%        |
| Lack of Digital Literacy      | 24                 | 24%        |
| Fear of Fraud                 | 22                 | 22%        |
| Language Barrier              | 16                 | 16%        |
| Technical / App Issues        | 12                 | 12%        |

Network and connectivity issues are the most commonly cited challenge, reflecting continued infrastructure gaps in many rural areas that can

disrupt transactions or delay payment confirmation. Lack of digital literacy and fear of fraud are also significant concerns, particularly among older and first-time users, highlighting the need for continued financial and digital-literacy support alongside the technology itself.

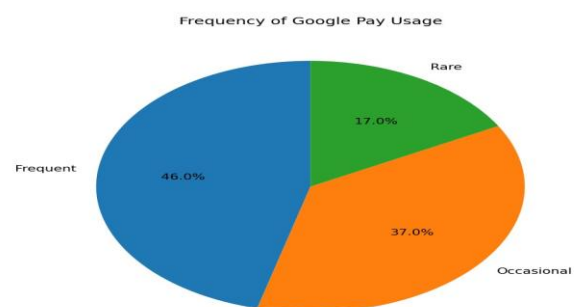
#### 4.11 Satisfaction Level of Users

| Level            | No. of Respondents | Percentage |
|------------------|--------------------|------------|
| Highly Satisfied | 28                 | 28%        |
| Satisfied        | 44                 | 44%        |
| Neutral          | 19                 | 19%        |
| Dissatisfied     | 9                  | 9%         |

A large majority (72%, combining highly satisfied and satisfied) report positive satisfaction, indicating that the platform generally meets the practical needs of rural users once adopted. A smaller group remains dissatisfied, often citing occasional failed transactions, confusion around the interface, or lingering concerns about the safety of their funds.

#### 4.12 Impact of Google Pay on Financial Inclusion

| Impact                         | No. of Respondents | Percentage |
|--------------------------------|--------------------|------------|
| Improved Access to Banking     | 52                 | 52%        |
| No Significant Change          | 31                 | 31%        |
| Created Difficulty / Confusion | 17                 | 17%        |

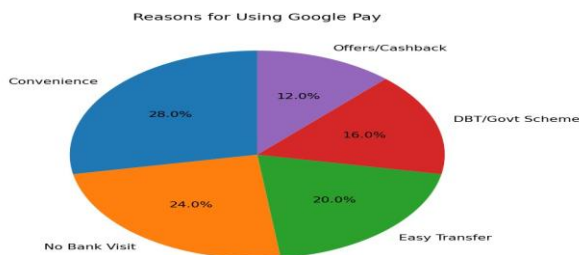


**Fig 1: Impact of Google Pay on financial inclusion among rural respondents**

More than half of respondents report that Google Pay has meaningfully improved their access to banking services, particularly in receiving money quickly and managing government benefit transfers without visiting a branch. A notable share report no significant change, suggesting that for some users — particularly those with limited independent usage — the platform has not yet translated into a deeper relationship with the formal financial system, while a smaller group report difficulty linked to the challenges identified in Section 4.10.

#### 4.13 Preference: Google Pay vs Cash

| Method               | No. of Respondents | Percentage |
|----------------------|--------------------|------------|
| Google Pay / Digital | 54                 | 54%        |
| Cash                 | 33                 | 33%        |
| Both Equally         | 13                 | 13%        |



**Fig 2: Rural consumer preference between Google Pay and cash**

A majority of respondents now prefer Google Pay or digital payments over cash, marking a significant shift from the traditionally cash-dominated nature of rural transactions. A meaningful third still prefer cash, generally citing greater familiarity, control and trust, particularly for larger transactions or when dealing with vendors who do not accept digital payments.

#### 4.14 Ease of Use

| Response    | No. of Respondents | Percentage |
|-------------|--------------------|------------|
| Easy to Use | 58                 | 58%        |

| Response  | No. of Respondents | Percentage |
|-----------|--------------------|------------|
| Moderate  | 29                 | 29%        |
| Difficult | 13                 | 13%        |

Most respondents find Google Pay easy to use, reflecting its straightforward, minimal-step interface, which suits users with limited smartphone experience. A smaller group finds it moderately or genuinely difficult, generally corresponding to older respondents or those with lower digital literacy, who may still require assistance from family members to complete transactions.

## V. FINDINGS, SUGGESTIONS AND CONCLUSION

### 5.1 Findings

- Awareness of Google Pay is very high (88%) among rural respondents, though active usage is lower (68%), indicating a gap between awareness and confident, independent usage.
- A large majority (76%) have successfully linked a bank account to Google Pay, showing that the basic infrastructure of financial inclusion — a usable bank account — is largely in place.
- Nearly half of active users (46%) use Google Pay frequently, most commonly for bill payments, mobile recharges and receiving money from family members.
- Google Pay is the most preferred platform (42%), ahead of PhonePe and Paytm, largely due to convenience and ease of use.
- More than half of respondents (52%) report that Google Pay has meaningfully improved their access to banking services, including easier receipt of Direct Benefit Transfers.
- Network connectivity issues, low digital literacy and fear of fraud remain the top three



challenges, particularly affecting older and less-educated respondents.

- A majority of users (72%) report positive satisfaction with Google Pay services.
- A clear majority now prefer Google Pay over cash (54%), though a meaningful share (33%) continue to prefer cash, especially for larger or informal transactions.

## 5.2 Suggestions

- Expand community-level digital-literacy programmes specifically targeted at older, less-educated and female rural residents, who currently show lower confidence in independent usage.
- Strengthen network and infrastructure investment in remote rural areas, since connectivity issues remain the single most cited challenge.
- Improve in-app fraud-awareness features, such as simple warnings for suspicious QR codes or unfamiliar payment requests, tailored to first-time and low-literacy users.
- Offer regional-language interfaces and voice-assisted guidance to reduce language barriers among rural respondents.
- Introduce simplified, accessible customer-support channels, including toll-free helplines, to resolve issues quickly for rural users unfamiliar with digital troubleshooting.
- Encourage banks and fintech providers to promote small, structured savings features within Google Pay, to help convert digital transaction habits into genuine savings behaviour.
- Partner with local self-help groups, panchayats and community organisations to build trust and provide peer-to-peer demonstration of safe and effective usage.
- Continue to link government welfare-scheme communication directly with digital payment platforms, so beneficiaries clearly understand

how to access and use their DBT funds safely.

## 5.3 Conclusion

This study shows that Google Pay has become an important part of the financial lives of many rural consumers, offering a genuine bridge between previously unbanked, below-poverty-line households and the formal financial system. The convenience of instant transfers, easier receipt of government benefits and reduced dependence on physical bank branches represent meaningful gains in financial inclusion for a significant share of respondents.

At the same time, this inclusion is not yet complete or uniform. Gaps remain between awareness and active usage, and challenges such as network connectivity, digital literacy and fear of fraud continue to limit how fully certain segments — particularly older, less-educated and female respondents — are able to participate. The findings support the view that digital payments and financial inclusion reinforce one another, but that this relationship depends on sustained investment in infrastructure, literacy, trust-building and user support. Google Pay has demonstrated real potential to deepen financial inclusion among rural, below-poverty-line consumers, but realising this potential fully will require continued, deliberate effort from government, banks and fintech companies alike.

## 5.4 Scope for Future Research

This study was limited to 100 rural respondents selected through convenience sampling, and future research could extend it with a larger, stratified sample across multiple districts and states to test whether the findings hold at a wider level. Longitudinal research tracking the same cohort as their tenure with digital payments increases would help establish whether usage, trust and savings behaviour continue to rise, plateau or decline as familiarity grows. A comparative study benchmarking financial-inclusion outcomes across different UPI platforms, or across regions with differing levels of network and literacy infrastructure,



would further isolate the specific contribution of platform design from the surrounding enabling environment.

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