



## **27. UPI Adoption in Rural and Urban India: A Closer Look at the Gap**

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### **Abstract**

*This paper looks at how UPI — the Unified Payments Interface — has been adopted across urban and rural parts of India. The two stories are quite different. In cities, UPI has already become a default way to pay for almost everything. In villages and smaller towns, it is growing, but slowly, and for different reasons than most people assume. Using data from NPCI, RBI, and TRAI, this study tries to understand what is actually driving that gap — not just infrastructure, but also trust, habit, language, and merchant availability. The paper ends with some practical suggestions for closing that gap faster.*

**Keywords-** UPI, Rural, Urban India, Closer Look at the Gap

### **1. Introduction**

UPI was launched in 2016. At that point, India still ran mostly on cash. People kept money in wallets, paid in exact change, and went to ATMs regularly. The idea of sending money instantly through a phone app felt futuristic for most. But within just a few years, at least in cities, UPI became completely ordinary. You can walk into a tiny chai stall in Connaught Place or a street-side vegetable shop in Andheri and pay through a QR code without anyone finding it unusual.

The rural story is harder to tell neatly. UPI has reached villages too, but the way it is being used there is different, and the barriers people face are more layered than just "no internet." This paper tries to get into those layers honestly, using available secondary data and research, rather than just repeating the standard narrative of digital India's progress.

### **2. Literature Review**

Researchers who have studied digital payment adoption in India tend to agree on a few things. Govil and Kumar (2019) found that age and education are strong predictors — younger, more educated people in cities were far quicker to adopt UPI. This was not surprising, but what they



also noted was that once a critical mass of users adopted it in a social circle, others followed quickly. That snowball effect worked well in dense urban environments.

Verma and Shukla (2020) looked specifically at how social influence drives UPI adoption in cities. Seeing a colleague pay at a canteen, or a friend split a restaurant bill through UPI, was a bigger push than any advertisement. Rural areas lack this kind of visible, everyday exposure to the technology.

After demonetization in November 2016, there was a sudden spike in UPI registrations everywhere, including rural India. But Jain and Rao (2018) found something interesting: many rural users who joined during that cash-crunch period quietly went back to cash once things normalized. The adoption was forced, not chosen, and it did not stick. That is an important distinction.

CGAP (2021) highlighted something that often gets left out of the main conversation: women in rural India face extra barriers. They are less likely to own a phone, less likely to be the primary decision-maker in household finances, and therefore less likely to be the ones using UPI even if it is available. Chakraborty (2022) added another important finding — a single bad experience, like a failed transaction where money seems to disappear, can make a rural user abandon UPI entirely. In cities, there is usually a colleague or a younger family member who can explain what happened and help recover confidence. In villages, that support system is often missing.

### **3. Objectives of the Study**

- To track how UPI usage has grown differently in urban and rural India
- To understand what made city-based adoption happen so fast
- To identify the real barriers rural users face — beyond just poor internet
- To examine UPI's actual role in financial inclusion, not just its potential
- To suggest practical steps that could speed up rural adoption

### **4. Hypothesis**

H1: UPI adoption and usage frequency is significantly higher in urban India compared to rural India.

H2: Infrastructure gaps like poor internet and low smartphone ownership are among the main reasons for slower rural adoption, but not the only ones.



H3: Targeted awareness programmes and better policy support can meaningfully accelerate rural UPI adoption.

## 5. Methodology

This study is based entirely on secondary data. No primary field survey was carried out, mainly because of time and resource constraints — which is a genuine limitation and is acknowledged here. The sources used include:

- NPCI monthly UPI transaction reports from 2019 to 2025
- RBI Annual Reports and Payment System data
- TRAI reports on internet and mobile penetration across states
- Academic research papers published in Indian and international journals
- Reports from CGAP, NITI Aayog, and the World Bank on financial inclusion

Data has been compared across urban and rural regions using simple tables. The goal was to combine hard numbers with explanation, not just present figures in isolation.

## 6. Data and Findings

### 6.1 How Fast UPI Actually Grew

The growth numbers are genuinely striking. When UPI started, it was processing around 1.8 crore transactions per month in 2017. By 2025 that had crossed 1,700 crore per month. That is not just growth — it is a complete shift in how a billion-plus country handles money.

Year	Transactions (Crore)	Value (Lakh Crore Rs.)	Who Was Using It
FY2018	91	1.0	Mostly urban India
FY2020	1,250	21.3	Still mostly urban
FY2022	4,596	84.2	Urban + some semi-urban
FY2024	13,116	199.9	Urban dominant, rural growing

*Table 1: UPI transaction growth over the years. Source: NPCI reports.*

### 6.2 Urban India: UPI as Habit, Not Event



In cities, UPI stopped being a novelty fairly quickly. A few things made this happen fast. First, urban India already had decent smartphones and reliable 4G before UPI came along — the infrastructure was there waiting. Second, the demonetization shock in late 2016 forced urban users to figure out digital payments urgently, and many never went back to exclusively using cash. Third, once shops and vendors started putting up QR codes, the habit reinforced itself. There was a reason to use UPI regularly.

Today, the average urban UPI user transacts somewhere between 18 and 22 times per month. For many city residents it has replaced not just cash but also cards and online banking for most everyday transactions.

Parameter	Urban India (2024)	Note
Smartphone penetration	~72%	Enables consistent UPI use
Internet quality	Mostly 4G	Reliable enough for transactions
Avg. transactions/month per user	18 to 22	Daily or weekly use
Main uses	Shopping, food, bills, rent	Wide variety

Table 2: Urban UPI usage snapshot (2024). Source: NPCI, TRAI.

### 6.3 Rural India: Growing, but Differently

Rural UPI adoption is real but it does not look the same as urban adoption. Most rural users are using UPI primarily to send money to family — remittances within the country, transfers to children studying in cities, or receiving wages from employers in urban centres. Using UPI to pay a shopkeeper or settle a bill is still far less common.

In FY2024, rural and semi-urban areas accounted for about 35 to 40 percent of total UPI transaction volume, up from around 18 percent in FY2020. Progress, yes. But it also means that even though the majority of India's population lives in rural areas, they account for less than half of UPI transactions. That gap reflects something structural, not just a lag that will naturally close on its own.

The barriers rural users face tends to fall into a few overlapping categories:



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**Internet and devices:** Much of rural India still runs on 2G or patchy 3G. A failed transaction on a slow connection is not just an inconvenience — for someone new to digital payments, it is genuinely scary. It feels like money has vanished. Feature phones are still common in many districts, and standard UPI apps require a Smartphone. There is a USSD service (\*99#) that bypasses the internet problem, but awareness of it is almost negligible in most rural areas.

**Knowledge and language:** Setting up a UPI ID, creating a PIN, understanding error messages — none of this is intuitive, especially for someone with limited literacy or who is unfamiliar with how digital banking works. Language is a real barrier too. Most UPI apps were built with English-first interfaces and added Hindi later. For someone who speaks only Bhojpuri, Marathi, or Tamil as their primary language, navigating these apps still requires effort that should not be necessary.

**Trust:** Cash is something people have used for generations. It feels tangible and certain. Moving to a system where money is essentially a number on a screen requires trust — in the technology, in the bank, and in the people helping you uses it. That trust is harder to build in communities that have had limited engagement with formal financial institutions. Fraud incidents make things worse. When someone in a village gets tricked into scanning a code and loses money, that story spreads fast, and it reinforces fears about the entire system.

**Merchant acceptance:** Even if a rural consumer wants to pay through UPI, many village shops and market vendors have no QR code to scan. Without merchants on the other end, there is no practical reason to develop the habit of paying digitally. The demand and supply sides of rural digital payments are both weak, and they reinforce each other.

Parameter	Urban India	Rural India
Internet quality	4G, mostly reliable	2G/3G, inconsistent
Smartphone ownership	~72%	~35%
Frequency of UPI use	Daily or weekly	Monthly or occasional
Primary use case	Shopping, bills, food	Sending money to family
QR codes at shops	Very common	Rare in smaller villages

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Trust in digital payments	High	Mixed, some fear of fraud
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Table 3: UPI usage comparison, urban vs rural India (2024). Source: NPCI, RBI, TRAI.

#### **6.4 UPI and Financial Inclusion: Promise vs Reality**

One of the biggest claims made about UPI is that it can extend financial inclusion to people who were previously left out of the formal banking system. India now has over 500 million Jan Dhan accounts. Government transfers — MNREGA wages, subsidies, pension payments — go directly into these accounts. On paper, UPI gives all these account holders a way to use their money digitally.

In practice, having an account and actively transacting through UPI are two different things. Many Jan Dhan account holders use their accounts only to receive government transfers and then withdraw everything as cash immediately. The confidence to transact digitally, to keep money in the account and use it through UPI, is a habit that has to be built over time. That building process has barely started in many parts of rural India.

#### **7. Conclusion**

UPI has done something genuinely remarkable in urban India. What started as a government-backed fintech initiative became a behaviour change at national scale. But the rural story is incomplete, and treating the overall growth numbers as evidence that the job is mostly done would be a mistake.

The barriers in rural India are not mysterious. They are identifiable and, individually, solvable. Poor connectivity, low smartphone access, language barriers in apps, limited awareness, distrust built from fraud incidents, and thin merchant acceptance — each of these has a fix. The harder problem is that they all interact with each other, and addressing one in isolation does not move the needle much.

Some practical steps that could actually help:

- Make the \*99# USSD service genuinely well-known, not just technically available — feature phone users need a working offline alternative
- Run UPI awareness sessions at the ground level: village schools, self-help groups, panchayat meetings — places where people actually gather



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- Add proper regional language support in all major UPI apps, not just Hindi and English — this is about more than translation, it is about interface design for different literacy levels
- Create simple, local-language fraud awareness material so people understand what a scam looks like before they encounter one
- Create easier pathways for small village merchants to get QR codes and start accepting digital payments — supply-side access matters as much as demand

This study has an obvious limitation: it relies entirely on secondary data. A field survey across rural districts in different states would surface things that transaction statistics and published reports cannot capture. That remains an important direction for future research.

The technology works. That is not the problem. The challenge is making sure that people in every part of India — not just those who were already comfortable with smartphones and digital services — feel confident enough to use it in their daily lives.

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