

An Analysis of Digital Payments' Prospects in India

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Abstract: *The Indian digital payment landscape has undergone a tectonic shift since 2016. What began as a push for demonetization has evolved into a sophisticated Digital Public Infrastructure (DPI). As of 2026, digital payments are no longer just an alternative to cash; they are the primary financial utility for over 490 million individuals and 65 million merchants. The demonetization in 2016, when cash supply abruptly decreased and individuals were forced to adopt digital options, was one of the pivotal moments. Despite early reluctance, this move helped many people and businesses realize how convenient cashless payments are. People were later urged to register bank accounts, link their Aadhaar numbers, and use mobile-based payment methods by the government's Digital India campaign and other financial inclusion initiatives.*

Keywords: *digital payment*

1. Introduction

The Indian digital payment landscape has undergone a tectonic shift since 2016. What began as a push for demonetization has evolved into a sophisticated Digital Public Infrastructure (DPI). As of 2026, digital payments are no longer just an alternative to cash; they are the primary financial utility for over 490 million individuals and 65 million merchants. The demonetization in 2016, when cash supply abruptly decreased and individuals were forced to adopt digital options, was one of the pivotal moments. Despite early reluctance, this move helped many people and businesses realize how convenient cashless payments are. People were later urged to register bank accounts, link their Aadhaar numbers, and use mobile-based payment methods by the government's Digital India campaign and other financial inclusion initiatives.

Technology has also been a significant motivator. Digital transfers are now easy, quick, and cost-free thanks to the National Payments Corporation of India's (NPCI) introduction of the Unified Payments Interface (UPI). UPI just requires a smartphone and an internet connection, in contrast to previous online banking techniques that were occasionally slow and complex. From paying utility bills to purchasing veggies at the neighbourhood market, this has altered how people pay for even the smallest of transactions.

This change was accelerated by the COVID-19 pandemic. People mostly relied on internet channels for shopping, schooling, and even medical consultations during lockdowns because physical stores were shuttered. For hygienic reasons, cash payments were also avoided, as well as safety issues. Consequently, millions of people—including those who had never used them before—became accustomed to using digital payments.

Emergent Trends for 2026 and Beyond

A. Frictionless & Invisible Payments

The focus is shifting toward "invisible" payments through AutoPay and e-mandates. Recurring payments for OTT, insurance, and utilities are automating the transaction lifecycle, reducing manual friction.

B. AI-Driven Security

With over 80% of Indian banks now employing AI-driven fraud detection, the system is moving toward real-time risk scoring and "agentic commerce," where AI agents can manage transactions securely on behalf of users.



C. The Rise of "Small-Ticket" Democratization

Low-value transactions (under ₹100) have exploded. Features like UPI Lite (on-device wallet) allow for offline or near-offline transactions, ensuring digital inclusion for users with inconsistent internet access.

OBJECTIVES OF THE STUDY

- To examine the annual growth in India's total digital payment volumes and values between FY 2018–19 and FY 2024–25.
- To examine the development of UPI transactions independently during the same time period in terms of both volume and value.
- To determine the Compound Annual Growth Rate (CAGR) for UPI and digital payments.
- To analyse how the growing percentage of UPI in digital payments reflects shifting consumer behaviour patterns.
- To determine the prospects and obstacles for digital payments' future growth in India.

REVIEW OF LITERATURE

Gupta & Kanungo (2022) examined the role of the Reserve Bank of India (RBI) and the National Payments Corporation of India (NPCI). Their research highlights that India's success isn't just technological but regulatory. The "**Jan Dhan-Aadhaar-Mobile**" (**JAM**) **Trinity** is cited as the foundational architecture that allowed digital payments to scale by solving the identity (Aadhaar) and banking (Jan Dhan) hurdles for the unbanked population.

Kumar et al. (2023) analysed the behavioural shift during the 2020-2022 period. The literature suggests that while demonetization in 2016 was a *forced* push toward digital, the pandemic acted as a *voluntary* catalyst. Their study found a significant "stickiness" in digital payment habits, where users who started using UPI for hygiene reasons continued using it for convenience post-lockdown.

Das (2025) argues that the e-Rupee will complement UPI by reducing the "settlement risk" for high-value transactions and lowering the cost of physical cash management for the government. Furthermore, the linkage of India's UPI with systems like Singapore's Pay Now is seen as a precursor to a new global standard for cross-border remittances.

RESEARCH METHODOLOGY

This study looks at the development, trends, and potential of digital payments in India using a descriptive and analytical research design. The research is founded on secondary data, since its goals are to analyse officially published figures that already exist rather than gather fresh primary data.

Data Sources

The data for this study has been exclusively sourced from credible and official government and regulatory bodies. The primary sources of information include:

Official publications, reports, and data releases from the Reserve Bank of India (RBI).

Publicly available statistics from the National Payments Corporation of India (NPCI) on key payment platforms, particularly the Unified Payments Interface (UPI).

Data Collection Period

The data was collected for the financial years ranging from 2018-19 to 2024-25, providing a comprehensive and up-to-date analysis of the seven-year growth trajectory.

Analytical Techniques

The quantitative data collected was analysed using the following methods to fulfill the study's objectives:

Trend Analysis, Compound Annual Growth Rate (CAGR) Calculation, Qualitative Analysis:



DATA ANALYSIS AND INTERPRETATION

1. Overall Digital Payment Trends

The amount and value of digital payment transactions in India are steadily and significantly increasing, according to an examination of government statistics. The country's financial environment underwent a significant transition from FY 2018–19 to FY 2024–25, changing from an economy reliant on cash to one that prioritizes digital transactions.

Table 1: Total Digital Payment Transactions in India

Financial Year	Volume (in Crore)	Value (in ₹ Lakh Crore)
2018-19	3134	2231
2019-20	4572	2742
2020-21	5554	3000
2021-22	8839	3021
2022-23	13462	3355
2023-24	18737	3659
2024-25	23834	4580

Source: Press Information Bureau, RBI, and Ministry of Finance reports (data as of March 31, 2025).

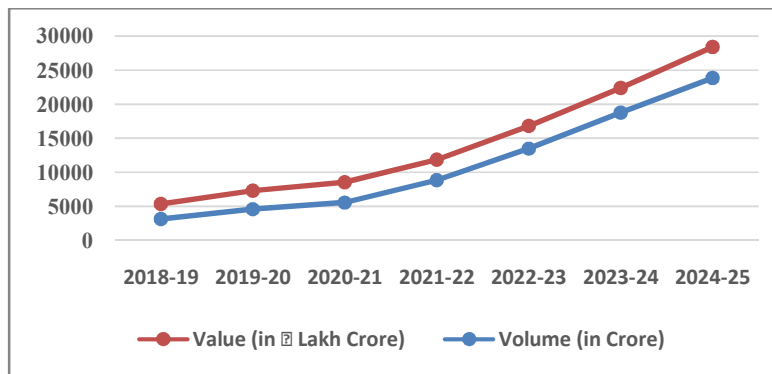


Fig 1: Volume and Value of Digital Payments in India (FY 2018-19 to FY 2024-25)

As shown in Table 1 and Figure 1 the total volume of digital payment transactions in India grew from 3134 crore in FY 2018-19 to a remarkable 23,834 crore in FY 2024-25. The value of these transactions also witnessed robust growth, increasing from Rs.2231 lakh crore to Rs. 4,580 lakh crore during the same period. This exponential growth is a direct result of several factors, including government initiatives, enhanced digital infrastructure, and a growing population of internet users.

2. The Rise of UPI:

A Novel Approach to Payments Even if the ecosystem for digital payments as a whole grew impressively, UPI was the main factor behind this change. Millions of Indians Favor it as their preferred payment option because of its simplicity, quick settlements, and zero-MDR (Merchant Discount Rate) policy on low-value transactions.

Table 2: UPI Transaction Growth in India

Financial Year	Volume (in Crore)	Value (in Rs. Lakh Crore)
2018-19	313	5.3
2019-20	1246	21.3



2020-21	2732	49.3
2021-22	4597	84.7
2022-23	8411	139.1
2023-24	13116	200
2024-25	19035	233

Source: National Payments Corporation of India (NPCI) and official reports (data as of March 31, 2025).

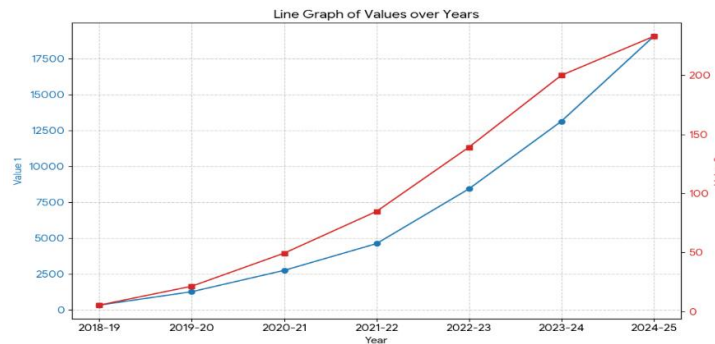


Fig 2: UPI Transaction Growth in India: Volume and Value (FY2018-19 to FY 2024-25)

The data in Table 2 and Figure 2 highlights UPI's explosive growth. From just 313 crore transactions in FY 2018-19, UPI volume skyrocketed to 19,035 crore by FY 2024-25. Similarly, the transaction value grew from Rs. 5.3 lakh crore to Rs. 233 lakh crore in the same period. This indicates that while UPI has become a platform for high-value transactions, its true strength lies in its high-volume, low-value use cases for daily commerce.

3. Compound Annual Growth Rate (CAGR) Analysis:

The remarkable evolution of India's payment ecosystem can be viewed through the prism of the Compound Annual Growth Rate (CAGR). Even if the raw data indicates remarkable growth, the CAGRs paint a deeper picture of a country undergoing a digital transformation. With a CAGR of 44.5%, the volume of transactions has increased quickly when considering the entire digital payments ecosystem. The overall value has increased by a relatively moderate 12.1%, though. This notable distinction is a crucial realization: it indicates that digital payments are no longer limited to expensive operations like big bill payments or internet shopping. Rather, millions of people are using them for routine, low-cost purchases, a trend that is drastically altering customer behaviour on a local level. However, UPI distinguishes out because of its remarkable expansion.

Table 3: CAGR of Digital Payments and UPI (FY 2018-19 to FY2024-25)

Metric	CAGR (%) FY 2018-19 to FY 2024-25)
Total Digital Payment Volume	44.50%
Total Digital Payment Value	12.10%
UPI Transaction Volume	129.50%
UPI Transaction Value	138.80%

Source: Calculated by the author based on data from Press Information Bureau (PIB) press releases and Ministry of Finance reports.

Traditionally, other digital payment systems like NEFT and RTGS were used mainly for large, high-value transfers, such as business transactions or property payments. These payments were not very frequent. However, UPI has made digital payments simple and accessible for everyone, allowing for small, daily transactions like buying groceries or a cup of tea. The data in this paper strongly supports this. UPI's transaction count grew at an extraordinary rate, far outpacing the overall growth of the digital payment ecosystem. By FY 2024-25, UPI transactions made up nearly 80% of all digital payments in India.



4. The Shifting Consumer Behaviour Pattern;

A fundamental change in customer behavior is reflected in UPI's growing market share in digital payments. In addition to increasing in absolute terms over time, UPI has also taken a commanding portion of the market and established itself as the go-to option for both P2P and P2M transactions.

Table 4: UPI's Share of Total Digital Payment Volume

Financial Year	Total Digital Payment Volume (in Crore)	UPI Transaction Volume (in Crore)	UPI Share (%)
2018-19	3,134	313	9.99%
2019-20	4,572	1,246	27.25%
2020-21	5,554	2,732	49.19%
2021-22	8,839	4,597	52.01%
2022-23	13,462	8,411	62.48%
2023-24	18,737	13,116	70.00%
2024-25	23,834	19,035	79.87%

Source: Press Information Bureau and National Payments Corporation of India (data as of March 31, 2025)

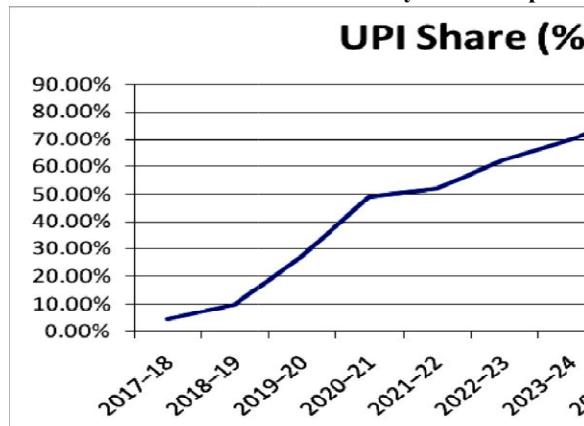


Fig 4: UPI's Share of Total Digital Payment Volume (FY 2018-19 to FY 2024-25)

In 2026, India's digital payment ecosystem has transitioned from a "novelty" to an "ingrained habit." While the Unified Payments Interface (UPI) continues to break records—surpassing 20 billion monthly transactions by late 2025—the landscape is currently navigating a pivotal shift from rapid expansion to long-term sustainability.

Current Challenges

Despite the "UPI miracle," several structural and social hurdles remain:

1. The "Zero-MDR" Sustainability Crisis:

The government's insistence on a zero Merchant Discount Rate (MDR)—meaning merchants pay nothing to accept UPI—has been great for adoption but tough on banks and fintech. As of the Budget 2026 consultations, industry leaders are warning that the current model is unsustainable without increased subsidies or a "controlled MDR" for large merchants.

The Digital Divide & Rural Adoption:

While urban centres are saturated, UPI adoption in rural India still lags (estimated at around 20% in late 2025). Barriers include:



Connectivity:

5G now covers 99.9% of districts, but "last-mile" erratic data remains a reality in deep rural pockets.

Literacy:

Lack of digital skills and a preference for cash (which still accounts for over 50% of rural daily purchases) persists.

Infrastructure Fragility:

The scale of transactions is testing the technical limits of banks. Only today (February 10, 2026), a major nationwide UPI outage highlighted the risks of a system so integral to daily life that a "service provider not available" error can halt a city's commerce.

Sophisticated Fraud:

As AI adoption grows, so does "AI-powered fraud." Mule accounts and real-time social engineering scams are the biggest deterrents for the "next billion" users.

Future Prospects and Opportunities

1. Global Interoperability (UPI Go Global)

The next frontier is the internationalization of Indian payment rails.

Cross-Border Remittances: Through initiatives like **Project Nexus**, UPI is being linked to fast-payment systems in Singapore, UAE, France, and Southeast Asia. This will reduce remittance costs from the global average of 5-6% to **under 3%**.

Tourism & Trade: Indian travelers can now pay via UPI QR codes in multiple countries, eliminating the need for expensive forex cards or currency exchange.

2. The Rise of CBDC (Digital Rupee)

The Reserve Bank of India's **Central Bank Digital Currency (e₹)** is moving beyond pilot stages.

Programmable Payments: Opportunities exist for "programmable money," where funds (like government subsidies or corporate allowances) can be coded to be spent only for specific purposes (e.g., education or fuel).

Offline Functionality: A major prospect is the ability to transact in "shadow zones" without active internet, using Bluetooth or NFC-based CBDC transfers.

3. "Credit-on-Tap" and Embedded Finance

Payments are no longer a standalone service; they are becoming the "invisible foundation" for other financial products.

Sachet Credit: Small-ticket, high-frequency loans are being offered at the point of sale, driven by the digital footprint of a user's UPI history rather than traditional collateral.

B2B Modernization: While B2C is mature, the **B2B payment space** (supply chain financing, vendor payments) remains a massive untapped opportunity for automation and instant settlement.

4. AI and Agentic Commerce

Fraud Prevention: AI models now run in real-time to detect "mule accounts" and suspicious patterns before the money leaves the sender's account.

AI Personal Buyers: By late 2026, we expect the rise of **AI agents** that can negotiate prices and execute payments on behalf of the user for routine purchases like groceries or utility bills.

2. CONCLUSION

The analysis of digital payment trends in India from FY 2017-18 to FY 2024-25 reveals a powerful story of financial revolution. The findings demonstrate that digital payments, led by the Unified Payments Interface (UPI), have evolved from a niche service to the backbone of the country's economic activity. The exponential growth in transaction volume, significantly outpacing the growth in value, stands as a testament to a fundamental shift in consumer behavior, where



digital platforms are now trusted for even the most basic, daily transactions. The future, however, is rich with opportunities, from UPI's potential global expansion to the promise of offline payment solutions and the advent of a Central Bank Digital Currency.

LIMITATIONS OF THE STUDY

The study's primary limitation is its reliance on publicly available secondary data, which may be provisional in some cases and may not capture real-time market dynamics. However, by using data from the most reputable government sources, this limitation is mitigated, ensuring the findings are robust and reliable

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