

A Comprehensive Analysis of UPI Evolution, P2P and P2M Transaction Trends, and Economic Impact

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Abstract

The Unified Payments Interface (UPI) has evolved from a bank-account-based mobile payment mechanism into a foundational component of India's digital public infrastructure. This study empirically examines the growth trajectory of UPI, with particular emphasis on the changing composition of Person-to-Person (P2P) and Person-to-Merchant (P2M) transactions and the role of leading UPI applications in shaping the digital payments ecosystem. The study covers April 2020 to 31 August 2026 and relies primarily on secondary data published by the National Payments Corporation of India (NPCI), supplemented by Reserve Bank of India (RBI), Government of India, and selected peer-reviewed and institutional sources.

Annual UPI transaction volume increased from approximately 2,233 crore transactions in FY2020-21 to 24,161.69 crore in FY2025-26, while transaction value increased from approximately ₹41.03 lakh crore to ₹314.23 lakh crore. Estimated CAGR was approximately 61.0% in volume and 50.3% in value. P2M transactions accounted for approximately 63% of UPI transaction volume by FY2025-26, whereas P2P transactions continued to dominate transaction value at approximately 71%. In August 2026, UPI processed 24.51 billion transactions worth approximately ₹29.82 lakh crore. PhonePe, Google Pay and Paytm were the three largest UPI applications, accounting collectively for approximately 85.93% of transaction volume and 88.47% of transaction value. The study interprets UPI's economic contribution through payment efficiency, merchant digitisation, financial inclusion and digital transaction intensity, while avoiding the unsupported assumption that transaction value equals GDP contribution.

Keywords: Unified Payments Interface, UPI, P2P, P2M, digital payments, digital economy, fintech, PhonePe, Google Pay, Paytm, India

Introduction

The digital transformation of India's payment system represents a major structural change in the country's financial ecosystem. At the centre of this transformation is the Unified Payments Interface (UPI), developed by the National Payments Corporation of India (NPCI) under the regulatory framework of the Reserve Bank of India (RBI).

UPI facilitates interoperable, real-time payments directly between bank accounts through mobile applications. Its architecture enables payments through virtual payment addresses, mobile numbers, QR codes and other simplified interfaces.

The significance of UPI extends beyond its technology. Its rapid diffusion has changed how households, merchants, service providers and businesses conduct everyday transactions. UPI is now embedded in retail purchases, utility payments, food services, transportation, e-commerce, education, healthcare and peer transfers.

This study examines UPI at two interconnected levels: P2P payments, through which individuals transfer money to other individuals, and P2M payments, through which consumers pay merchants. The distinction is important because transaction volume and transaction value reveal different dimensions of payment-system development.

Review of Literature

Existing research can broadly be grouped into consumer adoption, financial inclusion, determinants of UPI growth, and digital-payment infrastructure/economic development.

Studies using Diffusion of Innovation and UTAUT frameworks indicate that relative advantage, facilitating conditions, performance expectancy, effort expectancy, social influence, promotional benefits and perceived trust are associated with UPI adoption.

Recent research also examines UPI as digital public infrastructure and its relationship with rural financial inclusion and economic growth. Other work studies inequality, merchant adoption and supply-side determinants of digital payment adoption.

The P2P–P2M distinction is especially relevant. NPCI-derived evidence shows that P2M transaction volume surpassed P2P volume during FY2022-23. In FY2021-22, P2P represented approximately 58% of volume and P2M approximately 42%; by FY2022-23, P2M had reached approximately 51%. P2P nevertheless remained dominant in value.

Research gap: relatively few studies combine a long-term UPI series, P2P/P2M decomposition, volume and value, average ticket size, application concentration and digital-economy interpretation. This study addresses that gap through an extended observation window ending 31 August 2026.

Conceptual Framework

Digital Infrastructure → UPI Accessibility → User/Merchant Adoption → P2P & P2M Transactions → Payment Intensity → Digital Economic Activity

The framework has five layers: digital infrastructure; UPI accessibility; transaction adoption; transaction structure; and digital-economy contribution.

P2P and P2M have different economic characteristics. P2P generally involves fewer transactions with comparatively larger ticket sizes, while P2M is characterised by high-frequency, smaller-ticket transactions.

The framework does not equate UPI transaction value with GDP. Transaction value represents gross payments processed through the network and can include transfers of existing financial resources.

Research Objectives

1. To examine the growth of UPI transaction volume and value from FY2020-21 to FY2025-26 and up to August 2026.
2. To analyse the evolution of P2P and P2M transactions in terms of volume and value.
3. To identify the leading UPI applications and examine application concentration.
4. To compare the growth characteristics of P2P and P2M transactions.
5. To examine changes in average UPI transaction size.
6. To interpret UPI's contribution to India's digital economy through transaction intensity, merchant digitisation, payment formalisation and financial inclusion.

Research Questions

- RQ1: What has been the growth trajectory of UPI transaction volume and value since 2020?
- RQ2: How has the relative importance of P2P and P2M transactions changed?
- RQ3: Does P2M dominate UPI in frequency while P2P remains dominant in value?
- RQ4: What level of concentration exists among leading UPI applications?
- RQ5: How has average transaction value changed as UPI has reached mass-market adoption?
- RQ6: What dimensions of India's digital economy are associated with UPI expansion?

6. Research Methodology

The study follows a quantitative, longitudinal and descriptive-empirical design. The unit of analysis is the UPI transaction, classified by time, volume, value, P2P/P2M category and application.

Study period: April 2020 to 31 August 2026. Financial years are used for annual analysis; August 2026 is treated separately as the latest monthly observation.

Primary source: NPCI UPI Product Statistics and UPI Ecosystem Statistics. Supporting sources include RBI payment-system statistics, Government of India/Press Information Bureau releases, peer-reviewed research and institutional digital-payment reports.

Variables include UPI volume and value, P2P/P2M volume and value, average ticket size, category shares, application shares and CR3.

Analytical measures include YoY growth, CAGR, average ticket size, category shares and the three-application concentration ratio.

Data Analysis

UPI volume increased from approximately 2,233 crore transactions in FY2020-21 to 24,161.69 crore in FY2025-26, while value increased from approximately ₹41.03 lakh crore to ₹314.23 lakh crore. Volume CAGR was approximately 61.0%, compared with approximately 50.3% for value.

Table 1. UPI Transaction Growth

FY	Volume (crore)	Value (₹ lakh crore)	YoY Volume	YoY Value	Avg. Ticket (₹)
2020-21	2,233.07	41.03	—	—	1,837
2021-22	4,595.61	84.16	105.8%	105.1%	1,831
2022-23	8,371.44	139.15	82.2%	65.3%	1,662
2023-24	13,112.95	199.95	56.6%	43.7%	1,525
2024-25	18,586.60	260.56	41.7%	30.3%	1,402
2025-26	24,161.69	314.23	30.0%	20.6%	1,301

Table 2. August 2026 UPI Position

Indicator	August 2026
UPI transactions	24,508.96 million
Equivalent transactions	2,450.90 crore
Transaction value	₹29,82,355.95 crore
Transaction value	₹29.82 lakh crore
Banks live on UPI	752
Average transaction value	Approx. ₹1,216.84

Table 3. Evolution of P2P and P2M Volume Composition

FY	P2P Share	P2M Share	Interpretation
2021-22	~58%	~42%	P2P still dominant
2022-23	~49%	~51%	P2M crosses P2P
2023-24	~41%	~59%	Merchant payments dominant
2024-25	~38%	~62%	Continued merchant expansion
2025-26	~37%	~63%	P2M-led volume structure

Table 4. Estimated P2P and P2M Transaction Volume

FY	Total UPI (crore)	P2P Approx.	P2M Approx.
2021-22	4,595.61	2,665	1,930
2022-23	8,371.44	4,102	4,269
2023-24	13,112.95	5,376	7,737
2024-25	18,586.60	7,063	11,524
2025-26	24,161.69	8,940	15,222

Table 5. Top Three UPI Applications – August 2026

Rank	Application	Transactions	Volume Share	Value	Value Share
1	PhonePe	11.19 billion	45.64%	₹14.26 lakh crore	47.82%
2	Google Pay	7.91 billion	32.26%	₹10.07 lakh crore	33.78%
3	Paytm	1.97 billion	8.03%	₹2.05 lakh crore	6.87%
Top 3	—	21.07 billion	85.93%	₹26.38 lakh crore	88.47%

Table 6. P2P versus P2M: Economic Interpretation

Dimension	Dominant Category	Interpretation
Transaction frequency	P2M	Everyday consumption and merchant payments
Transaction value	P2P	Relatively larger individual transfers
Ticket size	P2P	Higher average value
Payment frequency	P2M	Repeated small-ticket transactions
Merchant digitisation	P2M	QR and digital acceptance
Individual transfers	P2P	Household and peer transfers

NPCI reported 24,508.96 million transactions worth ₹29,82,355.95 crore in August 2026 through 752 live banks. The implied average ticket size was approximately ₹1,217.

P2M transaction volume surpassed P2P in FY2022-23. P2M increased from approximately 42% of volume in FY2021-22 to approximately 63% by FY2025-26, while P2P declined from approximately 58% to approximately 37%. In contrast, P2P represented approximately 71% of transaction value in FY2025-26.

This establishes a two-dimensional structure: P2M is associated with high-frequency everyday merchant payments, whereas P2P remains more important in monetary value.

The average UPI ticket size declined from approximately ₹1,837 in FY2020-21 to approximately ₹1,301 in FY2025-26 and approximately ₹1,217 in August 2026.

In August 2026, PhonePe, Google Pay and Paytm accounted for approximately 85.93% of transaction volume and 88.47% of transaction value.

Contribution of UPI to India's Digital Economy

UPI's contribution should not be measured by adding transaction value to GDP. A payment transfers economic value rather than necessarily creating new output.

Five dimensions are particularly relevant: reduction in payment friction; merchant digitisation; transaction traceability/formalisation potential; financial inclusion; and digital consumption.

QR-based payments and interoperability reduce payment friction. The rising share of P2M demonstrates deep integration into merchant activity. Digital records can support bookkeeping and financial histories, although digital payment does not automatically imply tax compliance or formalisation.

The scale of UPI participation indicates mass-market adoption. Increasing P2M usage shows that UPI is increasingly embedded in everyday consumption, including retail, restaurants, utilities, transport and online commerce.

9. Findings and Conclusion

Finding 1: UPI has experienced sustained large-scale growth.

Finding 2: Transaction volume has grown faster than transaction value.

Finding 3: P2M has become the dominant UPI transaction type by volume.

Finding 4: P2P continues to dominate transaction value.

Finding 5: Average transaction size has declined.

Finding 6: PhonePe, Google Pay and Paytm show high application-level concentration.

Finding 7: UPI has become infrastructure for everyday economic activity.

Finding 8: Annual growth has moderated as the system enters a high-scale phase.

Conclusion: UPI has undergone a profound transformation during the study period. Its importance increasingly lies in transaction frequency, merchant digitisation and integration of everyday commerce into real-time digital payment infrastructure, while P2P remains important for higher-value transfers. UPI has therefore evolved from a digital payment product into a critical layer of India's digital economic infrastructure.

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