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The Growth of UPI Transactions and the Cashless Economy in India: A Study with Reference to the Reserve Bank of India

Medhari Sai Akshitha[1], Naga Sulochana[2]

Department of Management Studies, Geethanjali College of Engineering and Technology (Autonomous), Cheeryal, Keesara, Medchal District, Telangana, India[1]

Assistant Professor, Department of Management Studies, Geethanjali College of Engineering and Technology (Autonomous), Cheeryal, Keesara, Medchal District, Telangana, India[2]

Abstract: The Unified Payments Interface (UPI), launched by the National Payments Corporation of India (NPCI) in 2016, has become the backbone of India's transition towards a cashless economy. This research article examines the growth trajectory of UPI transactions between 2020 and 2026 using secondary data published by the Reserve Bank of India (RBI) and the NPCI. Employing growth analysis, percentage analysis, comparative analysis and graphical analysis, the study evaluates month-wise and year-wise trends in UPI transaction volume and value, and benchmarks UPI's performance against debit cards, credit cards and ATM cash withdrawals. The findings indicate that UPI transaction value grew from approximately ₹41.04 lakh crore in 2020-21 to ₹2.61 crore crore (₹260.57 lakh crore) in 2024-25, registering a compound rise in its share of total digital payment value from 6.00% to 38.10% over the period. Comparative analysis shows that UPI's growth rate has consistently outpaced debit card and credit card transaction growth, while ATM-based cash withdrawals have declined in absolute terms since 2022-23. These results confirm UPI's role as the dominant and preferred mode of digital payment in India and offer evidence-based implications for policymakers, banks and fintech stakeholders seeking to deepen financial inclusion.

Keywords: Unified Payments Interface (UPI), Cashless Economy, Digital Payments, Reserve Bank of India, Financial Inclusion, Growth Analysis, Comparative Analysis, NPCI

1. INTRODUCTION

The rapid advancement of digital technology has transformed the way financial transactions are conducted across the world, and India's shift from cash-based payments to digital modes has gained significant momentum over the past decade. Rising smartphone penetration, affordable internet access, and sustained government initiatives promoting digitalisation have created a favourable environment for the growth of digital payment systems.

Introduced in 2016 by the NPCI, UPI is a real-time payment system that enables users to transfer funds instantly between bank accounts through mobile applications, without the need for lengthy bank details or physical cash. Its interoperability across banks, round-the-clock availability, and robust security architecture have made it one of the most widely adopted digital payment systems in the country, supporting the broader Digital India and financial-inclusion agenda.

This article synthesises secondary data from RBI and NPCI publications to trace the growth of UPI transactions, benchmark its performance against other digital and card-based payment instruments, and assess its contribution to India's transition toward a cashless economy.

1.1 Significance of the Study

Understanding UPI's growth trajectory is important for regulators, banks, fintech firms and merchants alike, as it reveals shifting consumer preferences, highlights infrastructure gaps, and provides an evidence base for policy formulation aimed at deepening digital and financial inclusion.

1.2 Role of the Reserve Bank of India

The Reserve Bank of India, as the country's central bank and apex payment-systems regulator, has played a foundational role in enabling UPI's growth. Under the Payment and Settlement Systems Act, 2007, RBI authorises and supervises NPCI as the retail-payments umbrella organisation that operates UPI, and it periodically issues guidelines on transaction

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limits, settlement risk and customer-protection norms that govern the platform's operation. RBI's Payment System Indicators and periodic bulletins remain the primary official source of transaction-level data on UPI, debit cards, credit cards and ATM usage, and this study draws directly on that data to construct its comparative analysis. Beyond its regulatory function, RBI's broader digital-payments vision — articulated through successive Payment and Settlement Systems Vision documents — has explicitly targeted a reduction in cash intensity and an increase in digital transaction penetration, objectives against which UPI's growth can be directly assessed.

1.3 Objectives of the Study

- To examine the month-wise and year-wise growth trend of UPI transactions in India between 2022 and 2026.
- To analyse the role of UPI in promoting a cashless economy and financial inclusion.
- To compare the annual growth of UPI transactions across 2022, 2023, 2024, 2025 and 2026.
- To study the contribution of UPI transactions relative to other digital payment instruments.
- To evaluate the overall growth and increasing adoption of UPI in India.

1.4 Research Methodology

This study is descriptive and analytical in nature and relies entirely on secondary data. Data on monthly and annual UPI transaction volume and value were compiled from RBI Bulletins, RBI's Payment System Indicators and NPCI product statistics for the period January 2022 to April 2026, along with comparative data for debit cards, credit cards and ATM cash withdrawals for 2021-22 to 2024-25. The analytical techniques applied include growth analysis, percentage analysis, comparative analysis, and graphical analysis.

1.5 Scope and Limitations

The scope of this study is confined to nationwide, secondary-source data on UPI, debit card, credit card and ATM transactions; it does not extend to state- or city-level micro-data, nor does it capture primary survey evidence on individual user attitudes or merchant-level acceptance costs. As the study relies exclusively on secondary data drawn from published RBI and NPCI statistics, its conclusions are subject to the accuracy, consistency and revision practices of those source publications. Provisional figures for early 2026 are included to reflect the most current available trend but may be revised in subsequent official releases. Notwithstanding these limitations, the multi-year, multi-instrument comparative design provides a robust basis for assessing UPI's relative growth and its contribution to India's cashless-economy transition.

2. LITERATURE REVIEW

A substantial body of research has examined the drivers and consequences of UPI adoption in India. Studies have consistently linked the growth of UPI to rising smartphone and internet penetration, government-led digitalisation campaigns such as Digital India and Jan Dhan Yojana, and the platform's interoperability across banks. Several researchers have emphasised UPI's contribution to financial inclusion, noting that it has extended formal banking access to previously underserved urban and rural populations by lowering the transaction costs associated with cash handling.

Mahesh and Bhat (2021) examined the growth pattern of UPI transactions in the years following its launch and found that ease of use, interoperability across banks and zero transaction charges for individual users were the strongest determinants of adoption. Kiran and Sailaja (2025) extended this analysis to semi-urban markets and reported that UPI penetration in smaller towns accelerated markedly after 2022, narrowing the historical urban-rural digital payment gap. Sahu, Chakraborty and Banerjee (2025) linked the expansion of UPI to broader financial-inclusion outcomes, arguing that low-cost, real-time transfers have brought a large share of previously unbanked or under-banked households into the formal financial system.

Sahoo, Patnaik and Satpathy (2024) studied the behavioural determinants of continued UPI usage and identified perceived security, transaction speed and habitual use as significant predictors of sustained adoption, while also noting that occasional service outages and app-level failures remain a source of user friction. Rahim, Rabbani, Uddin and Shaikh (2024) compared cashless-economy transitions across South Asian markets and observed that India's UPI model, being interoperable and bank-agnostic, achieved faster scale than closed-loop wallet systems used in neighbouring economies. Kulangi and Khan (2024) and Dev et al. (2024) both highlighted the merchant side of adoption, finding that the near-zero merchant discount rate on UPI transactions was a decisive factor in small-vendor acceptance relative to card-based payment terminals.

Comparative studies of digital payment instruments have found that UPI has grown considerably faster than card-based instruments such as debit and credit cards, attributing this to UPI's low merchant discount rate, ease of use through QR codes, and real-time settlement. The Journal of Enterprise Information Management (2023) and Motheram and Buteau

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(2026) both documented a parallel decline in cash-intensive behaviour, including reduced ATM withdrawal frequency, as UPI usage intensified among salaried and self-employed households. Peters and Rose (2023), writing from a comparative banking perspective, cautioned that rapid digital-payment growth must be matched by proportional investment in fraud-detection infrastructure to preserve consumer trust. Centellegher et al. (2018), in earlier cross-country work on mobile money, had similarly found that convenience and trust in the issuing institution were the two variables most predictive of sustained digital-payment adoption in developing economies — a finding that later UPI-specific studies have largely reaffirmed.

Taken together, the literature supports the view that UPI has become the preferred mode of retail digital payment in India, driven by a combination of low cost, interoperability, and strong institutional backing from RBI and NPCI, while also pointing to infrastructure, awareness, and cybersecurity as areas requiring continued policy attention. This study builds on that literature by providing an updated, data-driven account of UPI's growth through early 2026 and by directly benchmarking it against competing payment instruments.

2.1 Research Gap

While prior studies have examined UPI adoption drivers, user behaviour, and financial-inclusion outcomes in isolation, relatively few have combined an up-to-date, month-wise trend analysis with a direct multi-instrument comparison against debit cards, credit cards and ATM cash withdrawals over a single, consistent time frame extending into 2026. This study addresses that gap by integrating growth, percentage and comparative analysis within one empirical framework using the most recent RBI and NPCI data available.

3. DATA ANALYSIS AND INTERPRETATION

This section presents month-wise and year-wise trends in UPI transactions, along with a comparative assessment against debit cards, credit cards and ATM cash withdrawals, based on secondary data published by RBI and NPCI.

3.1 Monthly Growth of UPI Transaction Volume (2022-2026)

UPI transaction volume rose from 46,171.56 million in January 2022 to 216,346.68 million in December 2025, before reaching 226,411.08 million in March 2026. While the trend shows minor month-to-month fluctuations, largely attributable to seasonal factors and shorter calendar months, the overall trajectory has been consistently upward across all five years, reflecting sustained and accelerating consumer adoption of UPI.

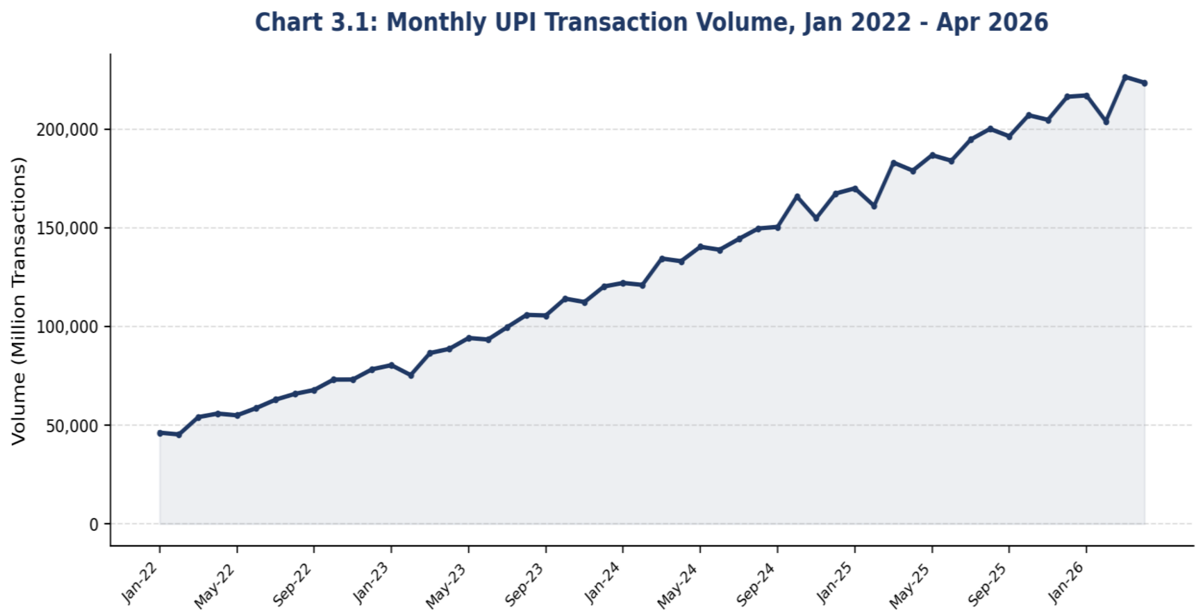

Figure 3.1: Monthly UPI transaction volume, January 2022 - April 2026 (Million transactions). Source: RBI / NPCI secondary data.

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3.2 Overall Year-wise Growth of UPI Transactions

Financial Year	UPI Transactions (₹ Crore)	Share of Total (%)
2020-21	41,03,658	6.00
2021-22	84,15,900	12.31
2022-23	1,39,14,932	20.35
2023-24	1,99,95,086	29.24
2024-25	2,60,56,955	38.10
Total	6,83,82,873	100.00

Table 3.1: Overall year-wise growth of UPI transactions, 2020-21 to 2024-25. Source: RBI / NPCI secondary data.

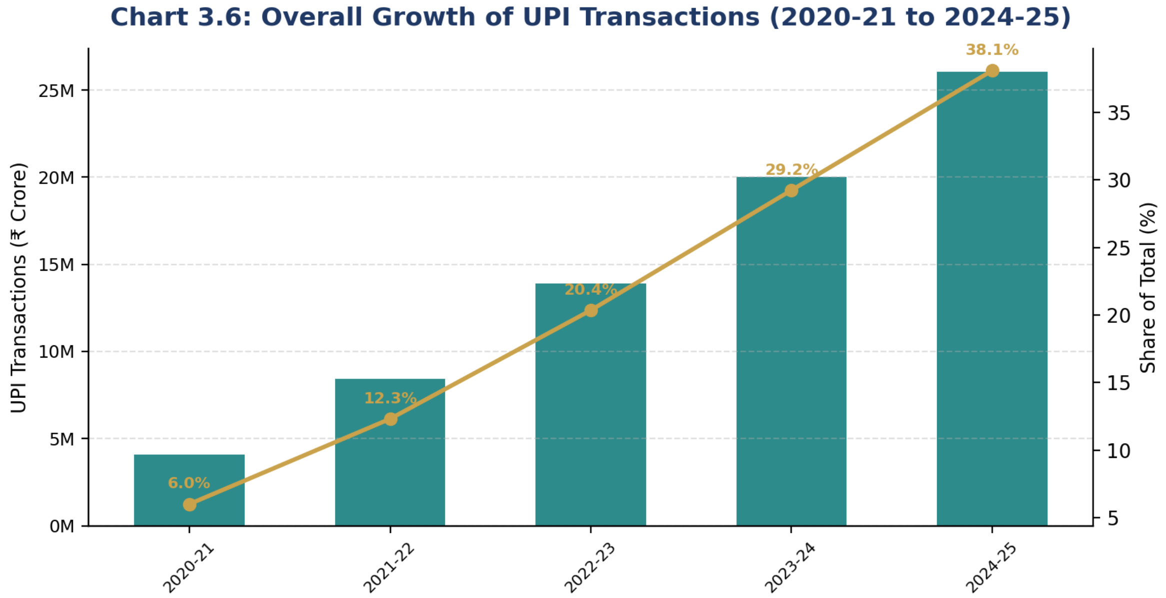

Figure 3.2: UPI transaction value and its share of total value, 2020-21 to 2024-25.

UPI transaction value increased more than six-fold, from ₹41,03,658 crore in 2020-21 to ₹2,60,56,955 crore in 2024-25. The year 2024-25 alone accounted for 38.10% of the cumulative five-year total, up from just 6.00% in 2020-21, confirming an accelerating rather than linear rate of adoption.

3.3 UPI vs. Debit Card Transactions

Year	UPI Transactions (₹ Cr)	Debit Card (₹ Cr)	UPI Growth Rate (%)	Debit Growth Rate (%)
2021-22	12,81,971	2,084	-	-
2022-23	18,22,949	2,165	29.68	3.74
2023-24	23,24,700	2,277	21.58	4.92
2024-25	27,96,713	2,354	16.88	3.27

Table 3.2: Comparison of UPI and debit card transaction value, 2021-22 to 2024-25.

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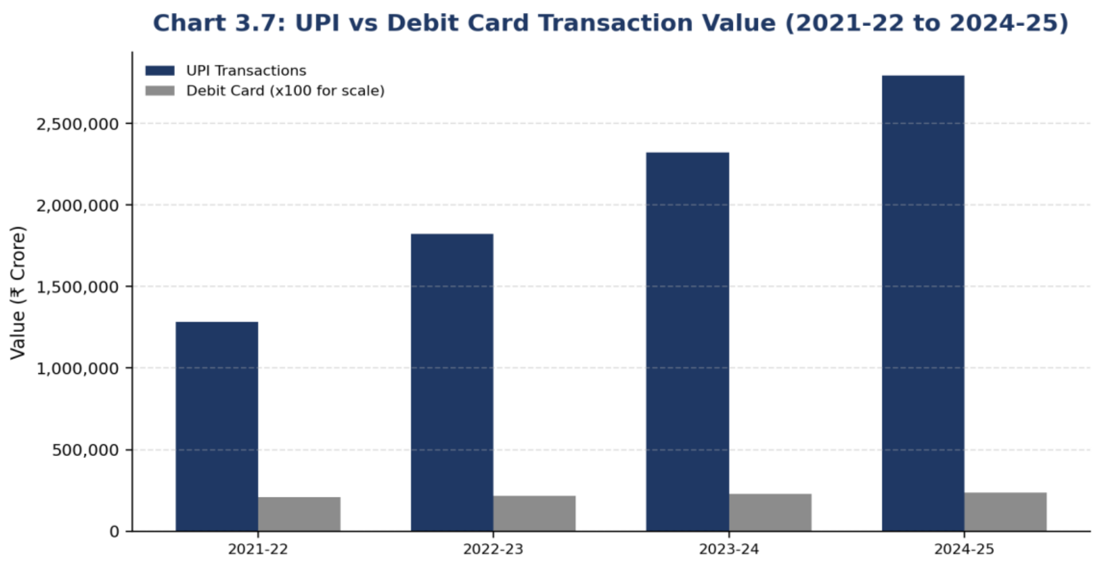

Figure 3.3: UPI vs. debit card transaction value (debit card series scaled ×100 for visual comparability).

UPI transaction value grew from ₹12,81,971 crore in 2021-22 to ₹27,96,713 crore in 2024-25, whereas debit card transaction value rose only marginally, from ₹2,084 crore to ₹2,354 crore over the same period. UPI's growth rate has exceeded debit card growth in every year of the study period, confirming UPI's position as the dominant mode of digital payment.

3.4 UPI vs. Credit Card Transactions

Year	UPI Transactions (₹ Cr)	Credit Card (₹ Cr)	UPI Growth Rate (%)	Credit Growth Rate (%)
2021-22	12,81,971	4,735	-	-
2022-23	18,22,949	5,646	29.68	16.14
2023-24	23,24,700	6,688	21.58	15.58
2024-25	27,96,713	7,756	16.88	13.77

Table 3.3: Comparison of UPI and credit card transaction value, 2021-22 to 2024-25.

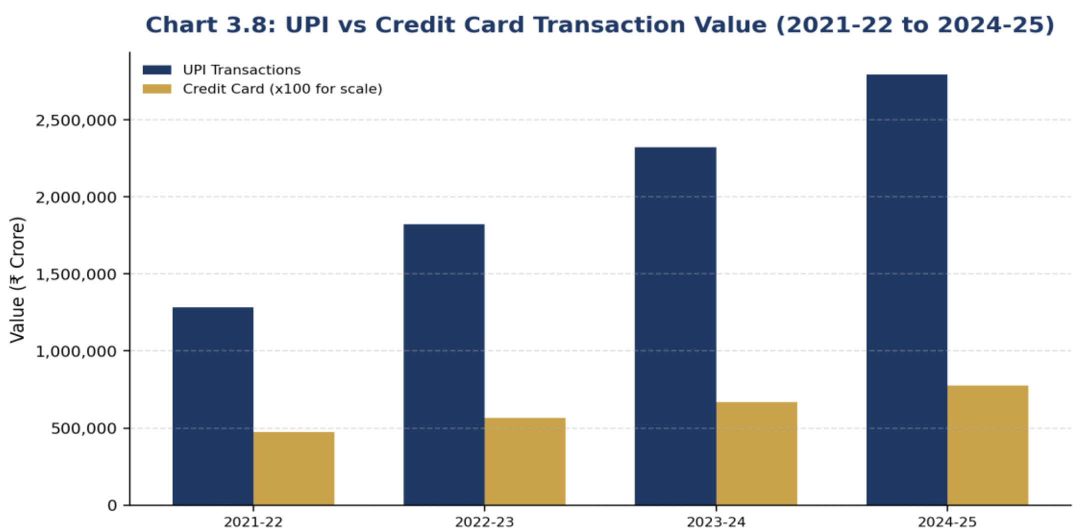

Figure 3.4: UPI vs. credit card transaction value (credit card series scaled ×100 for visual comparability).

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Although credit card transaction value nearly doubled from ₹4,735 crore to ₹7,756 crore between 2021-22 and 2024-25, UPI's growth rate remained substantially higher throughout, widening the absolute gap between the two instruments each year.

3.5 UPI Growth vs. ATM Cash Withdrawal Trend

Year	UPI Transactions (₹ Cr)	ATM Transactions (Million)	UPI Growth Rate (%)	ATM Growth Rate (%)
2021-22	12,81,971	1,491	-	-
2022-23	18,22,949	1,934	29.68	22.91
2023-24	23,24,700	1,391	21.58	-39.04
2024-25	27,96,713	1,202	16.88	-15.72

Table 3.4: UPI transaction value vs. ATM cash withdrawal volume, 2021-22 to 2024-25.

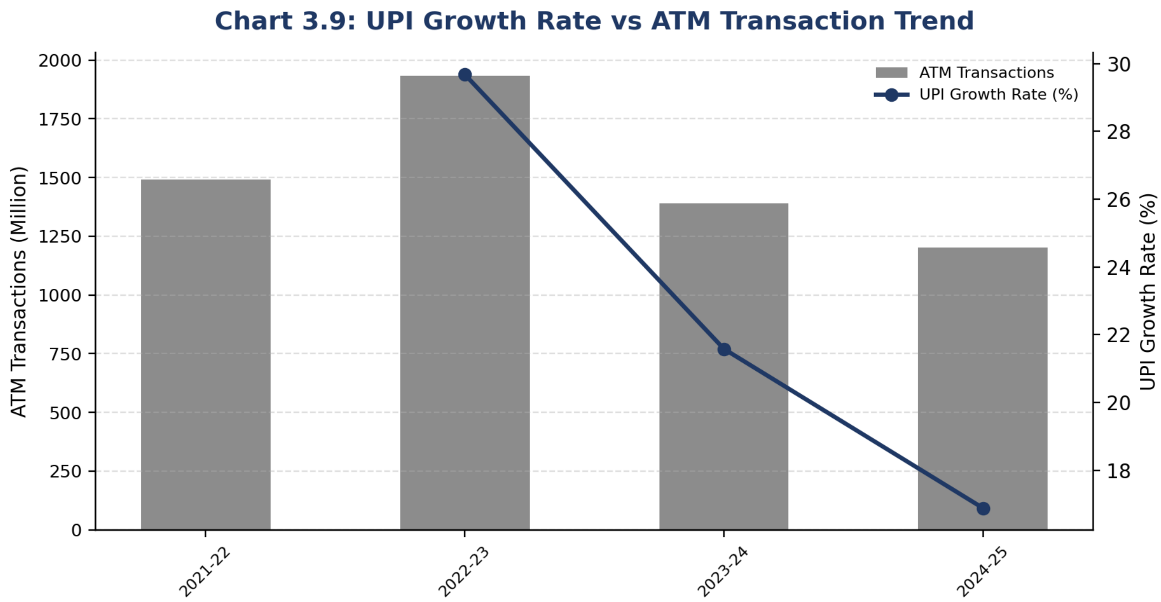

Figure 3.5: ATM transaction volume (bars) against UPI year-on-year growth rate (line).

ATM cash withdrawal volume peaked at 1,934 million in 2022-23 before declining to 1,202 million by 2024-25 — a fall of nearly 38% in two years. This inverse relationship between rising UPI adoption and falling cash withdrawals provides direct evidence of behavioural substitution away from cash toward digital payment instruments.

3.6 Latest Trend: January-April 2026

Month	Volume (Million)	Value (₹ Crore)	Growth in Volume (%)
Jan-26	2,17,034.45	28,33,481	-
Feb-26	2,03,941.84	26,84,229	-6.42
Mar-26	2,26,411.08	29,52,542	9.92
Apr-26	2,23,467.97	29,02,988	-1.71

Table 3.5: Month-wise UPI transactions, January-April 2026.

Provisional data for the first four months of 2026 indicate continued expansion, with volume rising from 217,034.45 million in January to 226,411.08 million in March, before a slight seasonal dip in April, consistent with the pattern observed in prior years.

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4. FINDINGS

- UPI transaction volume and value have grown consistently between 2022 and 2026, with only minor, seasonally driven month-to-month fluctuations, reflecting growing user confidence in digital payment systems.
- UPI's contribution to total digital transaction value rose sharply, from 6.00% in 2020-21 to 38.10% in 2024-25, indicating an accelerating rate of adoption rather than steady linear growth.
- UPI has consistently outgrown debit cards and credit cards in percentage terms every year from 2021-22 to 2024-25, cementing its position as the preferred instrument for everyday digital payments.
- ATM cash withdrawal volumes declined by nearly 38% between 2022-23 and 2024-25, providing evidence of substitution away from cash toward UPI-based digital transactions.
- The convenience, real-time settlement, interoperability and low transaction cost of UPI have been the primary factors driving its rapid and sustained adoption across urban and rural India.

5. SUGGESTIONS

- Government and financial institutions should continue strengthening digital infrastructure, particularly in rural and remote areas where internet connectivity remains inconsistent.
- Public awareness and financial-literacy programmes should be expanded to address hesitancy arising from limited knowledge or confidence in digital transactions.
- Banks and payment service providers should strengthen fraud-prevention measures and educate customers on safe digital-payment practices to sustain user trust.
- Small businesses and local vendors should be supported with affordable UPI acceptance infrastructure to widen merchant-side adoption.
- Policy efforts should prioritise simple, low-cost digital payment solutions for rural households, senior citizens and low-income groups to advance financial inclusion.

DISCUSSION

The results of this study reinforce a consistent narrative across the five-year study period: UPI has not simply added to India's existing digital payment options but has actively displaced competing instruments, most visibly cash withdrawn through ATMs. The near 38% decline in ATM cash withdrawal volume between 2022-23 and 2024-25, occurring alongside UPI's steady expansion, is difficult to explain through any factor other than direct behavioural substitution. This pattern is consistent with international experience in other real-time-payment markets, where the introduction of a low-cost, interoperable instant-payment rail has historically reduced reliance on cash rather than merely capturing incremental transaction growth.

A second notable pattern in the data is the widening gap between UPI and card-based instruments. Debit and credit card transaction value grew steadily but modestly over the study period, while UPI's growth rate remained in double digits in most years. This divergence suggests that UPI and cards are increasingly serving different use cases: UPI for routine, low-value, person-to-person and person-to-merchant transfers, and cards for higher-value, credit-based, or cross-border purchases where UPI's domestic, debit-linked design offers less advantage. Banks and card networks may therefore need to reposition card products around these residual use cases rather than compete directly with UPI on cost or convenience for everyday payments.

The month-wise data also reveal a recurring seasonal pattern: transaction volume consistently dips in February, the shortest calendar month, and again shows minor softness around September, before rebounding through the festive and year-end months of October to December. This seasonality, visible across all five years examined, offers a useful benchmark for banks and payment processors in planning system capacity and customer support resourcing around peak transaction periods.

6. IMPLICATIONS FOR STAKEHOLDERS

For regulators, the sustained widening of UPI's share of total digital payment value implies that supervisory focus should increasingly shift toward system resilience, uptime and fraud monitoring, given the platform's growing systemic importance to India's payments infrastructure. For commercial banks, the comparatively slower growth of debit and credit card transaction value suggests a need to reposition card products around use cases where UPI is a weaker substitute, such as high-value transactions, international payments and credit-based purchases, rather than competing directly on everyday low-value payments.

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For fintech firms and payment aggregators, the data indicate continued headroom for growth in merchant-acceptance infrastructure, particularly among small and unorganised retailers who remain under-penetrated relative to urban organised retail. For policymakers concerned with financial inclusion, the consistent double-digit annual growth in UPI's share of total transaction value supports continued investment in rural digital infrastructure and financial literacy, since these remain the binding constraints on further adoption rather than platform design or cost.

7. CONCLUSION

This study confirms that UPI has emerged as the most significant development in India's digital payment landscape, playing a central role in accelerating the country's transition toward a cashless economy. Both the volume and value of UPI transactions increased continuously across the study period, while UPI's growth rate consistently outpaced that of debit cards and credit cards, and cash-based ATM withdrawals showed a corresponding decline. These findings support the conclusion that UPI is not merely one payment option among many but has become the structural backbone of India's digital payments ecosystem, with continued infrastructure investment, security enhancement and financial-literacy efforts likely to sustain this trajectory further.

7.1 Scope for Future Research

Future research could build on this study in several directions. Primary survey-based research covering both urban and rural users would help identify the specific behavioural and infrastructural barriers that continue to limit UPI adoption among segments such as senior citizens, first-time smartphone users and informal-sector merchants. State- and district-level analysis of UPI penetration, rather than the national aggregates used in this study, would help policymakers target infrastructure investment more precisely. Further work could also examine the fraud and dispute-resolution dimension of UPI's growth in greater depth, given the platform's expanding transaction base, as well as compare India's UPI model against real-time payment systems in other countries such as Brazil's Pix or the United Kingdom's Faster Payments to draw cross-country policy lessons for sustaining digital-payment growth while managing systemic risk.

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