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The Role of Fintech in Transformation of Traditional Banking System

[1]P. Hemanth [2]Ms. SHAINAZ BEGUM

[1]STUDENT, DEPARTMENT OF MANAGEMENT STUDIES, GEETHANJALI COLLEGE OF ENGINEERING AND TECHNOLOGY

[2]ASSISTANT PROFESSOR, DEPARTMENT OF MANAGEMENT STUDIES, GEETHANJALI COLLEGE OF ENGINEERING AND TECHNOLOGY

shainaz.mba@gcet.edu.in

ABSTRACT

Financial technology, or fintech, has fundamentally reshaped the delivery of banking services in India, shifting the industry from physical, branch-centred models toward mobile-first, real-time digital infrastructure. This article examines the role of fintech in the transformation of traditional banking systems, focusing on the growth of the Unified Payments Interface (UPI) between 2023 and 2025 and its comparative performance against other established payment modes — debit cards, credit cards, NEFT, IMPS, mobile-app-based payments, and internet banking. Using secondary data compiled from RBI and NPCI publications, month-wise UPI growth rates are computed for each year and UPI's volume and value are set against year-end figures for each competing payment method. The analysis shows that UPI volume rose from about 80,386 million transactions in January 2023 to over 216,347 million by December 2025, with transaction value crossing ₹2,796,713 crore by the end of the period, while debit and credit card transaction counts remained comparatively flat or declined. Digital payment activity consistently peaked in the October–December quarter of each year, coinciding with festive-season spending. The findings confirm that UPI has become the dominant and fastest-growing digital payment channel in India, reflecting a broader, fintech-driven transition toward a cashless economy, and the article closes with suggestions for sustaining this transformation through digital literacy, cybersecurity, infrastructure investment, and closer bank–fintech collaboration.

Keywords: fintech; UPI; digital payments; cashless economy; traditional banking; NEFT; IMPS; digital transformation

1. Introduction

The Indian financial system has been radically transformed by fintech. Developments in digital identity, verification methods, and online payment platforms have created conditions that support rapid technological innovation, and the introduction of the Unified Payments Interface (UPI) stands out as a defining example, allowing users to make instant transfers and accelerating the shift toward digital financial services. India's digital public infrastructure has helped both new fintech firms and established banks introduce technology-based solutions, and the Reserve Bank of India has noted a significant surge in digital transactions since 2018, alongside regulatory steps such as digital KYC, the account aggregator framework, and cybersecurity guidelines intended to balance innovation with financial stability.

The traditional banking system has historically served as the central institutional mechanism for mobilising savings, allocating credit, and facilitating payments, relying heavily on physical branches, face-to-face interactions, and paper-based processes. While this model created trust and stability, it also involved high operating costs, limited accessibility, and slow product innovation. Fintech firms have entered key banking segments — payments, consumer lending, remittances, advisory services, and customer onboarding — often delivering faster and more user-friendly services than conventional branch-centred banking, forcing incumbent banks to accelerate their own digital transformation and, increasingly, to collaborate with fintech firms rather than compete with them on legacy terms.

Among the various strands of this transformation, the growth of UPI has been the most visible. By offering a secure and convenient means of instant, real-time money transfer, UPI has transformed India's payment ecosystem, reducing dependence on cash and contributing to the development of a cashless economy. This article examines the growth of UPI between 2023 and 2025 and evaluates its performance relative to other established digital and card-based payment methods, in order to assess the extent to which fintech-driven payment innovation is displacing traditional transaction channels.

1.1 Objectives of the Study

1. To study the growth and trend of UPI transactions and analyse their role in promoting a cashless economy in India.

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Vol. 01, Issue 3, July2026, pp :722-733

2. To compare UPI transactions with other payment methods such as debit cards, credit cards, NEFT, IMPS, mobile payments, and internet banking.
3. To evaluate the changes in transaction volume and value and understand the growing consumer preference for digital payment systems.
4. To understand the role of technological advancement and digital payments infrastructure in the development of secure, efficient, and convenient financial transactions in India.

1.2 Scope and Methodology

The study explores the role of fintech in transforming traditional banking systems, focusing on the adoption of digital financial solutions — mobile banking, online payments, and digital lending platforms — within the Indian banking sector. It is based entirely on secondary data drawn from Reserve Bank of India reports and publications, National Payments Corporation of India (NPCI) product statistics, and related academic and industry sources; no primary data was collected. Month-wise UPI transaction volume and value for 2023, 2024, and 2025 are used to compute growth rates, and UPI figures are compared against debit card, credit card, NEFT, IMPS, mobile-app-based payment, and internet banking (net banking) transactions over the same years using trend analysis, growth-rate calculation, and comparative analysis.

2. Review of Literature

Fintech has changed the structure of the financial sector by introducing digital innovations that improve efficiency and customer convenience, encouraging banks to redesign their traditional service models (Arner, Barberis, & Buckley, 2016, 2017). Technologies such as blockchain, digital payments, and artificial intelligence have reshaped banking operations, and banks need to adopt digital transformation strategies to remain competitive (Barroso & Laborda, 2022). A review of digital financial services found that the increasing use of technology has improved banking performance and profitability, with digital channels becoming essential for efficient service delivery (Abbasi & Weigand, 2017), while artificial intelligence and data science within fintech have been shown to enhance risk management, customer service, and personalised financial products (Cao, Yang, & Yu, 2020).

A bibliometric review found that digital transformation has become a major trend in banking, with banks increasingly relying on digital technologies to improve customer experience and operational efficiency (Osei, Cherkasova, & Oware, 2023), and fintech's contribution to financial inclusion has been shown to expand access to banking for underserved populations (Mittal & Singh, 2025). Technological innovation, changing customer expectations, and regulatory developments have been identified as key drivers of fintech disruption, with traditional banks transforming their business models in response (Ghani, 2024), and fintech adoption has been found to positively affect banking performance and customer satisfaction, with bank–fintech collaboration becoming increasingly common (Ghosh & Golder, 2026).

A review of fintech innovations found that technologies such as AI, blockchain, robo-advisors, and mobile banking have significantly altered traditional banking practices, improving efficiency and service quality (Anand et al., 2025), and an analysis of digital bank transformation found that banks are integrating digital strategies into their core operations, with fintech acting as a catalyst for innovation (Avianto et al., 2024). Digital transformation literature more broadly shows organisations, including banks, increasingly adopting digital technologies to enhance competitiveness (Egodawele, Sedera, & Bui, 2022), while studies of banking disruption note that fintech has created both challenges and opportunities, with innovation and strategic adaptation being crucial for sustainability (Gaviyau & Godi, 2025). Research on cybersecurity in digital banking has concluded that secure technologies and regulatory compliance are essential for maintaining customer trust (Waliullah et al., 2025), and fintech has more generally been shown to improve efficiency and reduce transaction costs in the financial system, increasing competition and encouraging banks to innovate (Philippon, 2019). Taken together, this literature establishes both the scale of fintech-driven change in banking and the specific relevance of UPI as the leading Indian example of this transformation, motivating the detailed comparative analysis undertaken here.

3. Data Analysis and Interpretation

Table 1 presents the year-end (December) snapshot of UPI transaction volume and value for 2023, 2024, and 2025,

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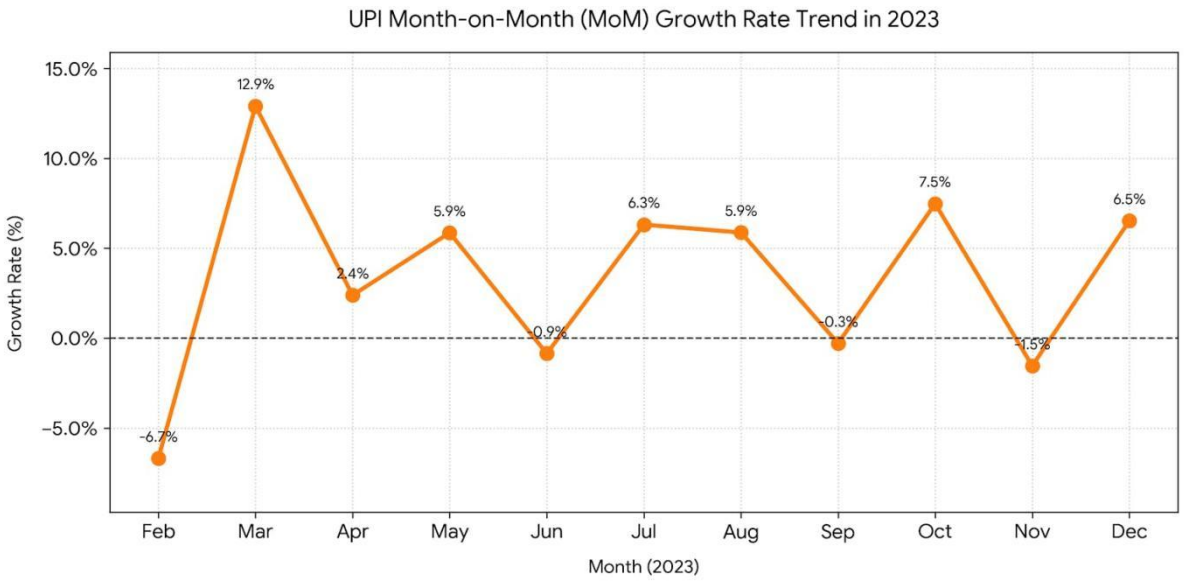
drawn from month-

TABLE -3.1 MONTH WISE CALCULATION OF UPI GROWTH RATE (2023)

MONTH	UPI VOLUME (mn)	UPI VALUE (CR)	Growth rate of upi
2023-jan	80385.88	1299059	-
2023-feb	75347.57	1235847	-0.06687
2023-mar	86516.34	1404951	0.129094
2023-Apr	88632.6	1415505	0.023877
2023-may	94151.85	1489145	0.058621
2023-jun	93350.61	1475464	-0.00858
2023-jul	99642.56	1533536	0.063145
2023-aug	105860.2	1576537	0.058734
2023-sep	105556.1	1579144	-0.00288
2023-oct	114087.9	1715768	0.074783
2023-nov	112352.9	17139741	-0.01544
2023-dec	120202.3	1822949	0.065301

SOURCE: secondary data

CHART NO: 3.1



INTERPRETATION

UPI transactions generally increased throughout 2023, though a few months showed small declines. Overall, the rising trend shows that more people are using UPI and moving towards digital payments.

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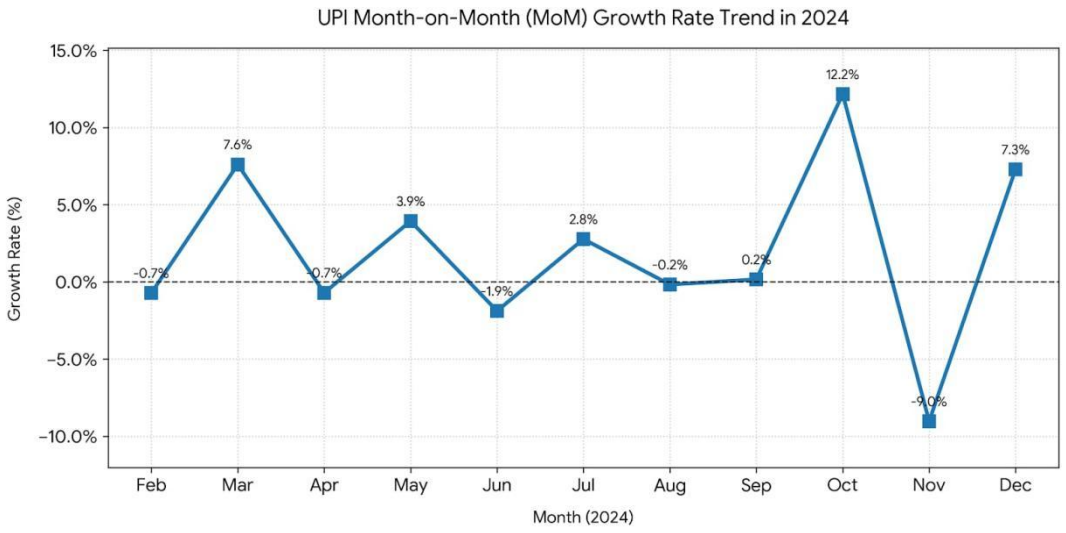
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TABLE -3.2 MONTH WISE CALCULATION OF UPI GROWTH RATE (2024)

MONTH	UPI VOLUMEIN (MN)	UPI VALUE IN (CR)	GROWTH RATE IN UPI
2024-jan	122030.81	1841083	-
2024-feb	121026.73	1827869	-0.007229183
2024-mar	134400.04	1978353	0.076065293
2024-apr	133039.94	1964465	-0.007069609
2024-may	140358.43	2044937	0.039351824
2024-jun	138851.42	2007081	-0.018861222
2024-jul	144355.54	2064292	0.027714587
2024-aug	149630.47	2060736	-0.001725597
2024-sep	1450417.47	2063995	0.001578977
2024-0ct	165849.66	2349821	0.12163735
2024-nov	154820.21	2155187	-0.090309565
2024-dec	167300.09	2324700	0.072918226

SOURCE: secondary data

CHART NO: 3.2



INTERPRETATION

UPI transactions generally increased throughout 2023, though a few months showed small declines. Overall, the rising trend shows that more people are using UPI and moving towards digital payments.

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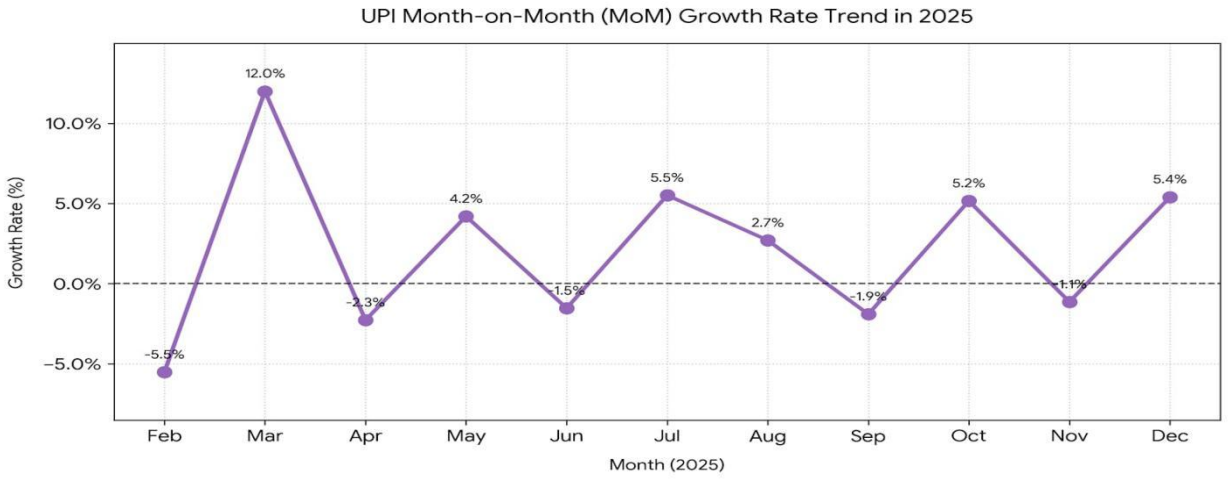
Vol. 01, Issue 3, July2026, pp :722-733

TABLE -3.3 MONTH WISE CALCULATION OF UPI GROWTH RATE (2025)

MONTH	UPI VOLUMEIN (MN)	UPI VALUE IN (CR)	GROWTH RATE IN UPI
2024-jan	122030.81	1841083	-
2024-feb	121026.73	1827869	-0.007229183
2024-mar	134400.04	1978353	0.076065293
2024-apr	133039.94	1964465	-0.007069609
2024-may	140358.43	2044937	0.039351824
2024-jun	138851.42	2007081	-0.018861222
2024-jul	144355.54	2064292	0.027714587
2024-aug	149630.47	2060736	-0.001725597
2024-sep	1450417.47	2063995	0.001578977
2024-0ct	165849.66	2349821	0.12163735
2024-nov	154820.21	2155187	-0.090309565
2024-dec	167300.09	2324700	0.072918226

SOURCE: SECONDARY DATA

CHART NO: 3.3



INTERPRETATION

UPI transactions in 2024 showed fluctuations, with some months recording declines and others showing strong growth. Overall, the trend remained positive, indicating continued growth in digital payment usage and increasing adoption of UPI.

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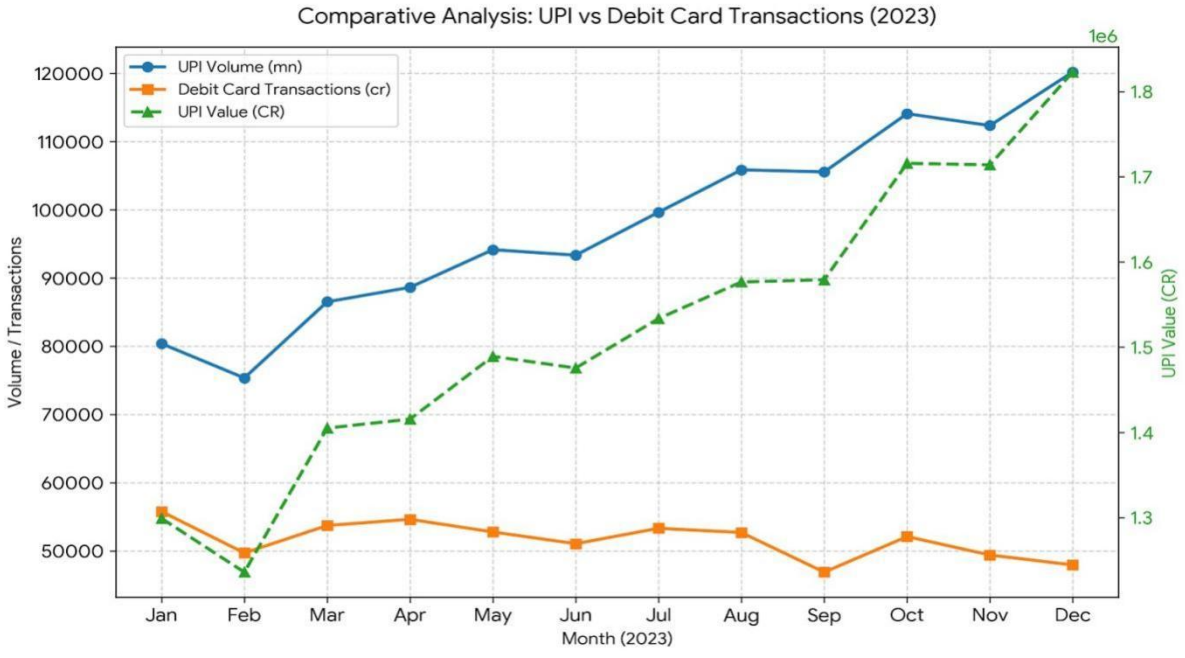
Vol. 01, Issue 3, July2026, pp :722-733

TABLE-3.4 COMPARATIVE ANALYSIS: UPI VS DEBIT CARD TRANSACTIONS (2023)

MONTH	UPI VOLUME (mn)	UPI VALUE (CR)	DEBIT CARD TRANSACTIONS(cr)
2023-jan	80385.88	1299059	55778
2023-feb	75347.57	1235847	49693
2023-mar	86516.34	1404951	53724
2023-Apr	88632.6	1415505	54627
2023-may	94151.85	1489145	52776
2023-jun	93350.61	1475464	51049
2023-jul	99642.56	1533536	53313
2023-aug	105860.16	1576537	52690
2023-sep	105556.07	1579144	46880
2023-oct	114087.9	1715768	52101
2023-nov	112352.92	17139741	49394
2023-dec	120202.26	1822949	47939

SOURCE: SECONDARY DATA

CHART NO :3.4



INTERPRETATION

UPI transaction volume and value increased continuously throughout 2023, showing strong growth in digital payments.

Debit card transactions remained relatively stable and showed a slight decline during the year.

The trend indicates that consumers increasingly preferred UPI over debit cards because of its convenience and ease of use.

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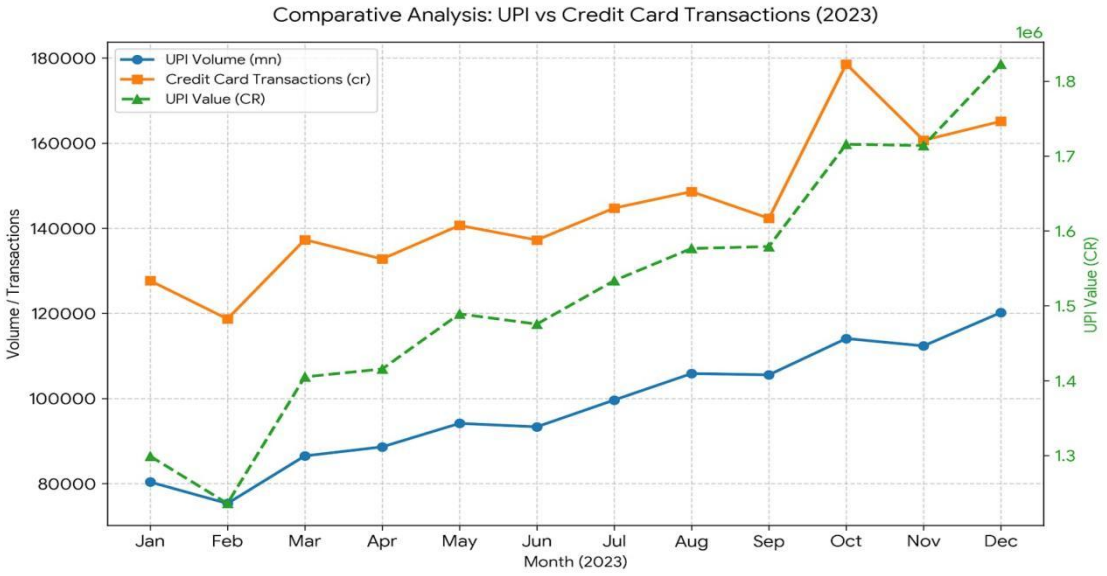
Vol. 01, Issue 3, July2026, pp :722-733

TABLE-3.5 COMPARATIVE ANALYSIS: UPI VS CREDIT CARD TRANSACTIONS (2023)

MONTH	UPI VOLUME (MN)	UPI VALUE (CR)	CREDIT CARD TRANSACTIONS (CR)
2023-jan	80385.88	1299059	127682
2023-feb	75347.57	1235847	118684
2023-mar	86516.34	1404951	137311
2023-Apr	88632.6	1415505	132769
2023-may	94151.85	1489145	140660
2023-jun	93350.61	1475464	137234
2023-jul	99642.56	1533536	144734
2023-aug	105860.2	1576537	148602
2023-sep	105556.1	1579144	142320
2023-oct	114087.9	1715768	178569
2023-nov	112352.9	17139741	160644
2023-dec	120202.3	1822949	165119

SOURCE: SECONDARY DATA

CHART NO: 3.5



INTERPRETATION:

Both UPI transaction volume and value showed a steady increase throughout 2023, reflecting strong growth in digital payments.

Credit card transactions also increased during the year, but UPI continued to grow rapidly and remained a widely used payment method.

The overall trend indicates increasing adoption of cashless transactions and a shift toward digital payment platforms

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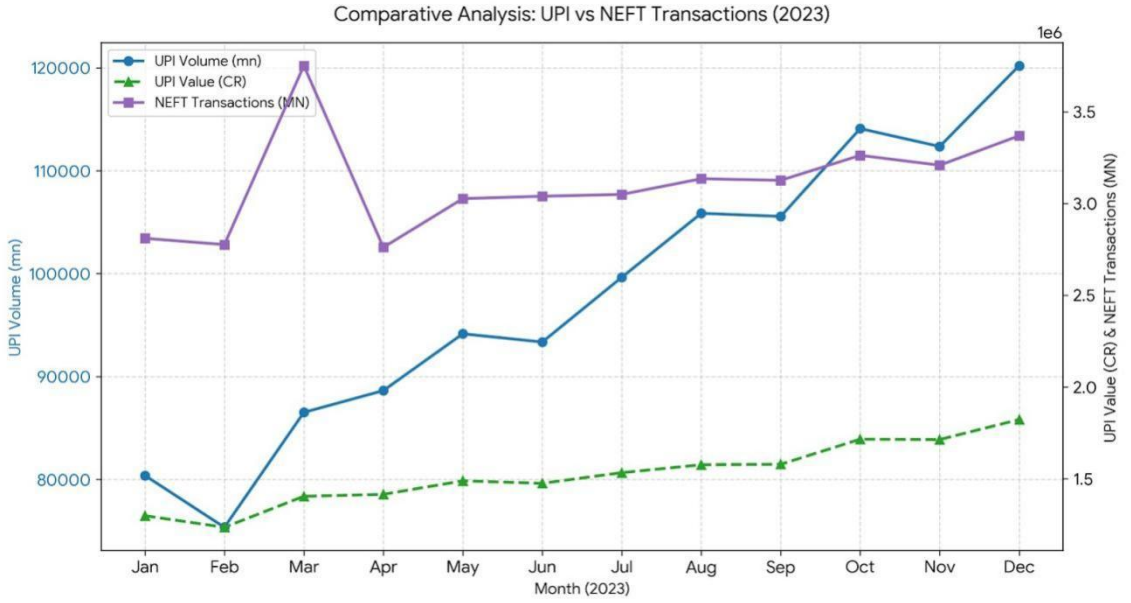
Vol. 01, Issue 3, July2026, pp :722-733

TABLE-3.6 COMPARATIVE ANALYSIS: UPI VS NEFT(2023)

SOURCE: SECONDARY DATA

MONTH	UPI VOLUME (mn)	UPI VALUE (CR)	NEFT TRANSACTIONS (MN)
2023-jan	80385.88	1299059	2810180
2023-feb	75347.57	1235847	2775972
2023-mar	86516.34	1404951	3750569
2023-Apr	88632.6	1415505	2761038
2023-may	94151.85	1489145	3026331
2023-jun	93350.61	1475464	3039491
2023-jul	99642.56	1533536	3049364
2023-aug	105860.2	1576537	3134602
2023-sep	105556.1	1579144	3126190
2023-oct	114087.9	1715768	3262015
2023-nov	112352.9	17139741	3208491
2023-dec	120202.3	1822949	3368836

CHART NO: 3.6



INTERPRETATION

UPI transaction volume and value showed continuous growth throughout 2023, indicating increasing adoption of digital payment systems.

NEFT transactions remained relatively stable with moderate growth, showing that it continues to be an important fund transfer system, especially for larger bank-to-bank transactions.

Compared to NEFT, UPI experienced faster growth and higher usage, reflecting the growing preference for instant and convenient digital payments.

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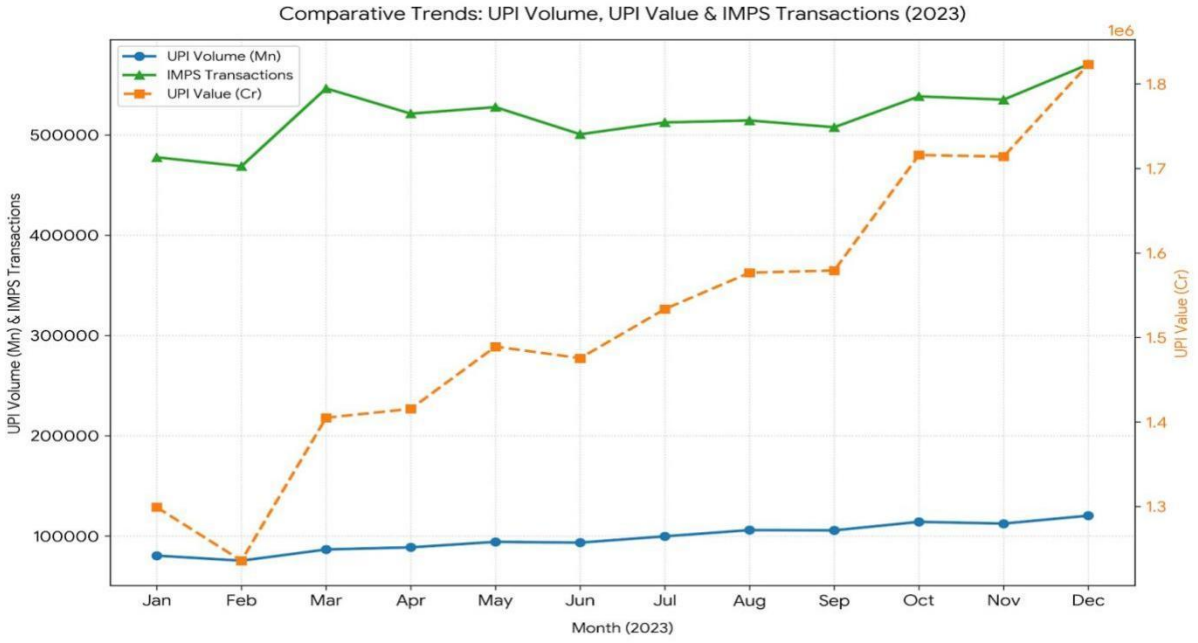
Vol. 01, Issue 3, July2026, pp :722-733

TABLE-3.7 COMPARATIVE ANALYSIS: UPI AND IMPS (IMMEDIATE PAYMENT SERVICE) 2023

MONTH	UPI VOLUME (mn)	UPI VALUE (CR)	IMPS TRANSACTIONS(MN)
2023-jan	80385.88	1299059	477491
2023-feb	75347.57	1235847	468647
2023-mar	86516.34	1404951	546235
2023-Apr	88632.6	1415505	521050
2023-may	94151.85	1489145	527558
2023-jun	93350.61	1475464	500482
2023-jul	99642.56	1533536	512312
2023-aug	105860.2	1576537	514280
2023-sep	105556.1	1579144	507497
2023-oct	114087.9	1715768	538239
2023-nov	112352.9	17139741	535002
2023-dec	120202.3	1822949	570126

SOURCE: SECONDARY DATA

CHART NO: 3.7



INTERPRETATION

UPI showed strong growth throughout 2023 in both transaction volume and value, indicating increasing adoption of digital payments.

IMPS transactions remained relatively stable with minor fluctuations, showing consistent usage but slower growth compared to UPI.

Overall, the trend highlights the growing dominance of UPI in India's digital payment ecosystem.

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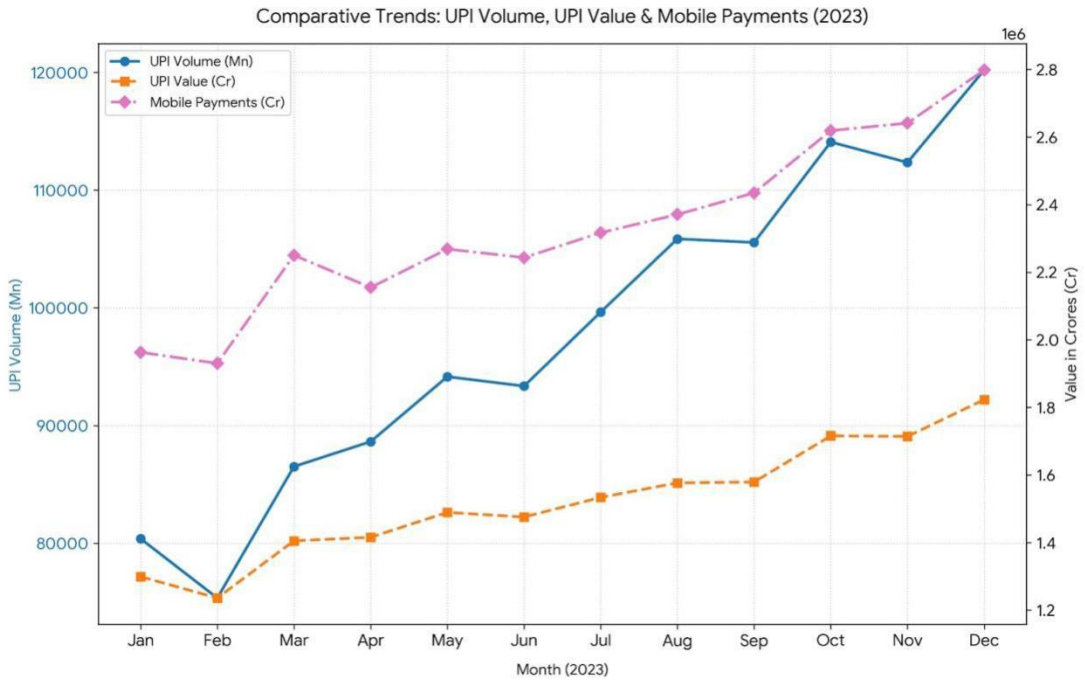
Vol. 01, Issue 3, July2026, pp :722-733

TABLE-3.8 COMPARATIVE ANALYSIS: UPI AND MOBILE PAYMENTS APP (2023)

MONTH	UPI VOLUME (mn)	UPI VALUE (CR)	MOBILE PAYMENTS (MOBILE APP BASED (CR)
2023-jan	80385.88	1299059	1962893
2023-feb	75347.57	1235847	1930127
2023-mar	86516.34	1404951	2250091
2023-Apr	88632.6	1415505	2154811
2023-may	94151.85	1489145	2268476
2023-jun	93350.61	1475464	2243149
2023-jul	99642.56	1533536	2316947
2023-aug	105860.2	1576537	2370838
2023-sep	105556.1	1579144	2434721
2023-oct	114087.9	1715768	2619059
2023-nov	112352.9	17139741	2641046
2023-dec	120202.3	1822949	2798250

SOURCE: SECONDARY DATA

CHART NO: 3.8



INTERPRETATION

UPI transaction volume, UPI value, and mobile payments all showed a steady upward trend during 2023, indicating increased adoption of digital payment services.

Mobile payments recorded the highest transaction values throughout the year, reflecting growing reliance on smartphones for financial transactions.Overall, the graph highlights the rapid growth of digital payments and the increasing importance of UPI and mobile-based payment systems in India

4. Findings

1. UPI transactions recorded consistent growth throughout the study period, with both volume and value rising steadily from 2023 to 2025 despite minor month-to-month fluctuations.

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Vol. 01, Issue 3, July2026, pp :722-733

2. Consumers increasingly preferred UPI over traditional payment methods: compared with debit cards, credit cards, NEFT, and IMPS, UPI showed much faster growth and wider adoption.
3. Digital payment channels more broadly witnessed significant expansion, with mobile payments and internet banking also recording growth alongside UPI.
4. Transaction values increased along with transaction volumes, indicating that users are both transacting more often and transferring higher amounts through UPI.
5. Higher digital payment activity was observed during the final quarter of each year, with volume and value generally peaking between October and December.
6. The study confirms India's gradual transition towards a cashless economy, with the continuous growth of UPI alongside the expansion of mobile payments, internet banking, and other digital channels.

5. Suggestions

1. Enhance digital awareness and financial literacy among users, particularly in rural and semi-urban areas, through coordinated programmes led by banks, payment providers, and government agencies.
2. Strengthen cybersecurity and fraud prevention measures as digital transaction volumes continue to grow, with regularly updated security systems and greater customer awareness of online fraud.
3. Improve digital infrastructure and internet connectivity, particularly in remote areas, to support uninterrupted and efficient digital transaction experiences.
4. Promote wider acceptance of digital payments among merchants and small businesses through QR-code-based payment systems, reducing dependence on cash.
5. Introduce innovative and customer-friendly digital payment solutions, with banks continuing to develop user-friendly applications that meet changing customer expectations.
6. Strengthen collaboration between the Reserve Bank of India, commercial banks, and fintech companies to support a secure, inclusive, and efficient digital payment ecosystem.

6. Conclusion

This study concludes that the rapid growth of fintech has significantly transformed India’s payment ecosystem and accelerated the transition toward a cashless economy. The analysis of UPI transactions from 2023 to 2025 reveals a continuous increase in both transaction volume and value, highlighting the growing acceptance of digital payment systems among consumers and businesses, while UPI has emerged as the most preferred mode of payment when compared with debit cards, credit cards, NEFT, and IMPS.

Although other payment systems continue to play an important role in the banking sector, UPI has become the major driver of digital transactions in India, with growth in digital payment activity particularly pronounced during festive and year-end periods, reflecting increasing consumer trust and confidence in cashless modes of payment. Overall, the combined efforts of the Reserve Bank of India, banks, fintech companies, and continuing technological advancement have strengthened the digital payment infrastructure and promoted financial inclusion, and with continued innovation, improved cybersecurity, and enhanced digital awareness, digital payment systems are expected to play an even greater role in India’s transition to a secure, efficient, and digitally empowered economy.

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Declarations

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Conflict of Interest: The author declares no conflict of interest.

Data Availability: The data used in this study were drawn from secondary sources, namely Reserve Bank of India (RBI) publications and National Payments Corporation of India (NPCI) product statistics for 2023–2025.