

Digital Payment System in India: Trends, Issues and Challenges

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Abstract

India's digital payment scenario has gone through a transformational development, mainly inspired by government initiatives such as Unified Payments Interfaces (UPI) and JAM trilogy (Jan Dhan, Aadhaar and mobile). The research paper analyzes the major trends shaping the sector by 2025, including explosive increase in the amount of transactions and integration of emerging technologies such as biometrics and AI. However, cyber security defense is constantly obstructing challenges such as system, lack of digital literacy and infrastructure boundaries. Based on information received from sources such as Reserve Bank of India (RBI), National Payments Corporation of India (NPCI) and industry analysis, the study emphasizes the need for balanced regulatory structure and inclusive strategies to maintain speed. Conclusions underline India's ability to lead in global digital economies, while ensuring equal development by addressing weaknesses

Keywords: Digital Payments, UPI, India, Trends, Cyber security, Financial Inclusion

1. Introduction

India's journey towards a cashless economy has moved forward rapidly from the 2016 demonetisation, which has established the country as a global leader in digital transactions. By 2025, digital payments have not only made daily commerce revolutionary but have strengthened financial inclusion for more than one billion people. RBI's Payments Vision 2025, which is based on "e-payments for everywhere, everyone, every time", imagines a spontaneous ecosystem that integrates real-time payments, boundary-papers and new fintech solutions. The UPI, launched by NPCI in 2016, is the leading, which processes monthly billions of transactions and overtakes traditional methods such as cards and cash.

This paper aims to analyze the current trends in India's digital payment systems, identify pressing issues, and delineate challenges for stakeholders. It employs a qualitative synthesis of recent literature and quantitative data from 2024-2025 to provide actionable insights. The paper organisation is a literature review, trends analysis, issues and challenges, discussion, and concluding & recommendations.

Literature Review

Both academic and industry research on digital payments in India have increased significantly, showing rapid changes in the sector. These studies cover development, trends, opportunities and cyber security,

rules and challenges like inclusion.

Digital payments in India began in the 1990s with systems such as Electronic Clearing Service (ECS), National Electronic Fund Transfer (NEFT) and Real-Time Gross Settlement (RTGS). These were for transfer of wholesale and high-value. RBI and NPCI played a big role, UPI launch in 2016 as an important point for real -time mobile transfer. In 2016, demonetisation accelerated adopting cash due to lack of cash and schemes like Digital India and PMJDY promoted Aadhaar payment BHIM app. As per a report, this is a mix of tech innovation, rule support, and socio-economic plans, shifting India from cash to digital [4]. Another study stresses post-demonetisation speed, where UPI changed P2P and P2M [7].

Trends analysis & Growth

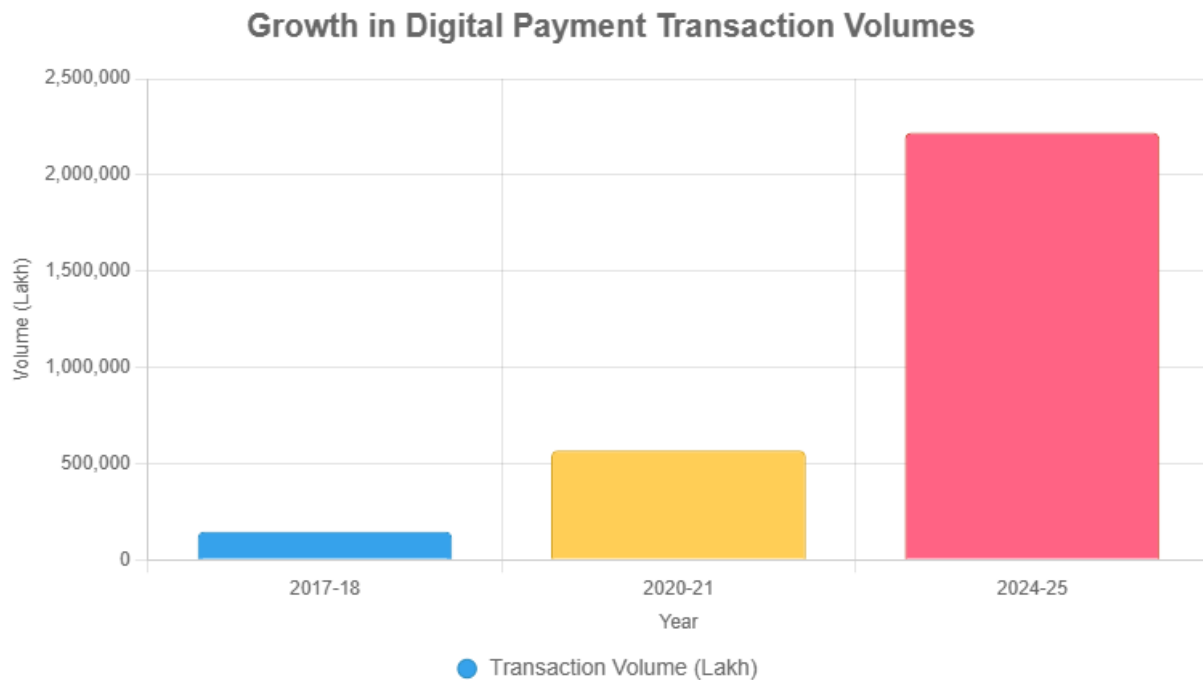
Digital payments have achieved unprecedented growth rates. From the financial year 2017-18 to 2024-25, the amount of transactions increased from 1,45,902 lakh to 22,19,814.63 lakhs, which is 15.2 times the increase, while the price increased from ₹ 13,69,86,734 crore to ₹ 28,62,00,103 crore. The RBI's Digital Payment Index increased from 100 in 2017-18 to 493.22 in 2024-25, which is an increase of 393%. The rate of adoption of the fintech is 87%, which is more than 64% of the global average. According to the Human Resource Journal (2025), the volume increase (1,521% trend rate) is ahead of the price increase (209%), which mainly indicates a change of small, high-existent transactions operated by UPI [4]. IMF Studies (2025) highlights the role of interoperability in retail digital payments, credits UPI for rapid disposal but the closed loop system warns risks [2]. A study published by Sciencedirect (2025) examines the relationship between digital payments and GDP growth integrating practical approaches. It finds that the growth of 1% in digital adoption can increase GDP growth from 6% to 8% of its current rate, affected by factors such as status quo bias, behavioral push and financial literacy [3]. The study underlines UPI's dominance, transactions increase transparency and economic contribution, as well as trends such as QR code and mobile wallet between Millennials and Zen-Z [7]. The EY report (2025) discusses fintech's role, projecting digital lending as the largest revenue source by 2030, with the market reaching \$180-200 billion by 2029 [19].

The table below summarizes key growth statistics:

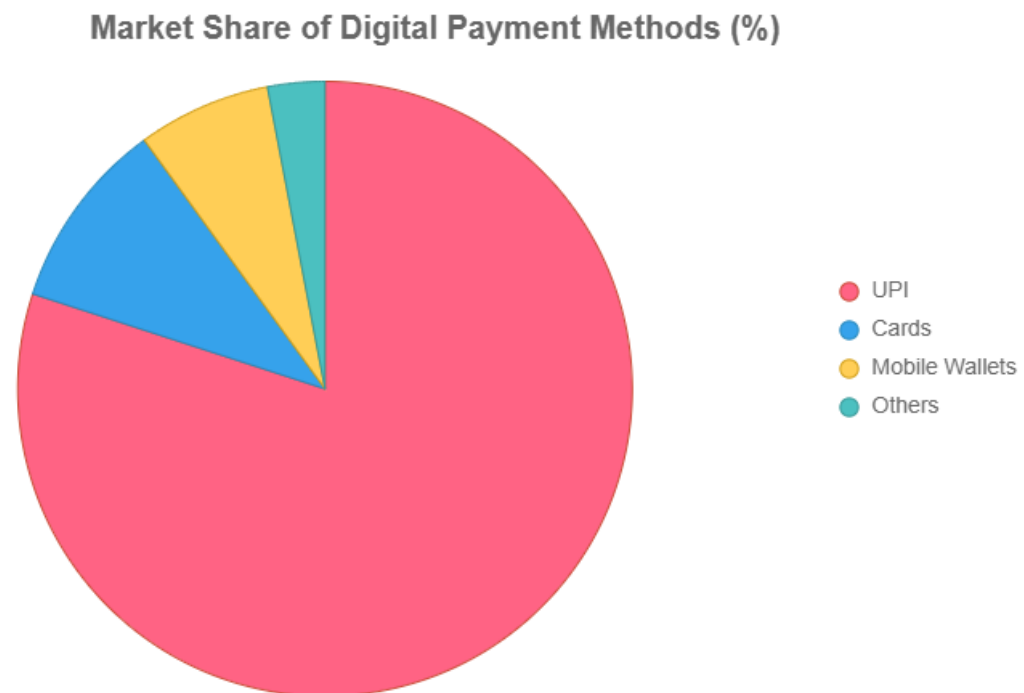
Table 1: Digital Payment Growth Statistics [4]

Year	Transaction Volume (Lakh)	Value (₹ Crore)	Digital Payments Index	Fintech Adoption Rate (%)
2017-18	1,45,902	13,69,86,734	100	50
2020-21	5,67,890	18,45,67,890	250	70
2024-25	22,19,814.63	28,62,00,103	493.22	87

The following bar chart illustrates the annual growth in transaction volumes:



The following pie chart shows the market share of digital payment methods (based on 2024-25 data, with UPI holding 80%):



Current trends include contactless payments, embedded finance and AI-managed fraud ascertain. IFSA Network believes that innovations such as Greentech Finance, Blockchain and Regtech are new to market, and the Regtech region will increase from 2024 to 2025 to 17% CAGR to reach \$ 18.92 billion

[10]. The BIS report credits UPI success to ease of development, purpose, data security, private sector partnership and efficient regulation, which is likely to be 15 billion monthly transactions by 2024 [13].

Recent Growth data: -

UPI handles over 18 billion monthly, 84% of digital payments. Over 20 billion in Aug 2025, ₹24.85 lakh crore. FY25: 18,587 crore from 92 crore in 2017-18, 114% growth. Daily average Rs 90,000 crore in Aug.

Table 2: Key UPI Growth Statistics

Metric	FY 2017-18	FY 2024-25	Growth Rate
UPI Transactions (Crore)	92	18,587	114%
Value (₹ Lakh Crore, Aug 2025)	N/A	24.85	40% YoY
Banks on UPI (May 2025)	N/A	673	+12% YoY

Issues and Challenges

Despite the development, many challenges remain. It discusses the rise of UPI and the fall of cash but highlights emerging issues such as cyber security, technical failures, digital literacy intervals, poor internet and privacy concerns [15]. This letter recognizes digital division, boundaries of rural infrastructure, lack of trust and cyber risks as major obstacles [4]. A study emphasizes cyber hazards such as fishing, ransomware and data violations, as well as the viscosity of innovation resistance and cash adopting [7]. BIS (2025) indicates technical disturbances, outage and interpreting intervals as UPI challenges IFSA (2025) Cyber fraud (2023) and social engineering scam reports increased by 46%, RBI recommends Cyber Security structure and DPDP Act 2023 [10].

The table below shows major challenges and their impacts:

Table 3: Major Challenges and Impacts [4, 10, 15, 19]

Challenge	Impact (%)
Cyber security Risks	46
Digital Literacy Gaps	30
Infrastructure Limitations	40 (Rural)
Regulatory Barriers	25

These studies collectively confirm the revolutionary role of UPI, but emphasize the need for flexible infrastructure, strong regulation and inclusive strategies. Future research may be focused on behavioral insight and emerging technologies.

Discussion

The findings of this study highlight the rapidly changing digital payment scenario in India, where more than 18 billion monthly transactions will be done by the UPI by the middle of 2025, which will increase inclusion and efficiency. It coincides with the trend of 130 billion transactions by the end of the year, faster than the end of the year, thanks to schemes like Digital India. New technologies such as embedded finance and AI, as well as cross-border relations (eg, Singapore), indicate real progress.

But challenges such as 20% increase in fraud, challenges such as rural net gap (40% area), and low literacy (30% affected) are threats to trust and development. These are the resonance of reports on the burden of the Fishing and DPDP Act, which have become worse by the income difference in the use of UPI. Like global issues, close loop risks also need to be cured.

Conclusion and Recommendations

India's digital payment system is a vivid example of innovation and rapid growth, at the center of which UPI is operating more than 18 billion monthly transactions and leading the region to a 1 trillion market by 2025. Technical integration, such as AI and biometrics, and financial inclusion trends through Jam Trinity have changed everyday trade and empower millions of people, especially in rural and deprived areas. Nevertheless, as it reflects this paper, challenges such as rising cyber fraud (up to 20%), poor rural connectivity (40% intervals), and low digital literacy (affecting 30%) have been large obstacles in the way of equal progress. Taking dealing with them will ensure that the speed creates a flexible, inclusive ecosystem that corresponds to the RBI payment vision 2025.

The following recommendations are proposed:

- I. Strengthening RBI-NPCI collaborations for real-time fraud alerts.
- II. Expanding rural broadband via Digital India 2.0.
- III. Mandating fintech literacy modules in schools and HEIs.
- IV. Streamline Regulations

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