

FROM THEORY TO IMPACT: NEW VISIONS ACROSS DISCIPLINES

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Editor-in-Chief
Daniel James



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EMERGING TRENDS IN UNIFIED PAYMENTS INTERFACE IN INDIA

P ANBUOLI PARTHASARATHY

*Assistant Professor, Department of Business Administration,
Mannar Thirumalai Naicker College, Pasumalai, Madurai – 625004.*

ABSTRACT

Unified Payments Interface (UPI) has revolutionized digital transactions in India since its launch in 2016. With exponential growth in transaction volumes, user adoption, and innovations, UPI has transitioned from a peer-to-peer transfer tool to a powerful digital payment's ecosystem. This article explores the emerging trends reshaping UPI, such as UPI Lite, credit integration, cross-border payments, voice-enabled transactions, and the role of artificial intelligence in fraud detection. The study uses a descriptive research design supported by secondary data analysis to identify key growth drivers and challenges. Findings suggest a promising future, provided infrastructure, security, and awareness evolve alongside innovation.

Keywords: UPI, Digital Payments, FinTech, Financial Inclusion, Payment Innovation

INTRODUCTION

India's digital revolution has found a powerful enabler in the Unified Payments Interface (UPI)—a real-time payment system developed by the National Payments Corporation of India (NPCI). Since its inception in April 2016, UPI has seen unprecedented growth, processing over 10 billion transactions monthly as of 2025. UPI enables seamless interbank transactions via mobile apps, reducing dependence on cash and physical banking infrastructure.

Initially designed for person-to-person (P2P) transfers, UPI has evolved into a multi-dimensional tool that facilitates bill payments, merchant transactions, EMI collections, toll and fuel payments, and government subsidies. With growing smartphone penetration, financial literacy, and fintech innovations, the UPI ecosystem is witnessing several emerging trends that could redefine the future of digital payments in India and globally.

This article aims to identify and analyze these emerging trends to provide insights for policymakers, fintech entrepreneurs, banks, and users.

Objectives

1. To identify and analyze the emerging technological and operational trends in UPI in India.
2. To evaluate the impact of these trends on the adoption and usage patterns among Indian consumers and businesses.

LITERATURE REVIEW

RBI (2023) – Highlighted UPI as a cornerstone of India's digital public infrastructure, with focus on interoperability and affordability.

NPCI Annual Report (2024) – Discussed the role of UPI in enabling inclusive finance through features like UPI123Pay and UPI Lite.

Chatterjee & Srivastava (2021) – Found UPI adoption closely linked with smartphone penetration and mobile internet affordability.

KPMG India (2022) – Noted growing preference among small merchants for QR-based UPI payments over PoS terminals.

Bharadwaj & Singh (2023) – Studied the integration of AI in UPI fraud prevention systems and consumer risk perception.

Verma (2020) – Explained the psychological trust consumers place in UPI due to its association with banks and government regulation.

Singhal & Nair (2022) – Highlighted UPI's growing use in Tier 2 and Tier 3 cities due to language-based user interfaces.

Deloitte (2023) – Predicted the rise of UPI in B2B and recurring payments like rent, tuition, and EMI.

World Bank (2022) – Recognized UPI as a global model for real-time retail payment systems.

SBI Research (2024) – Cited the potential of UPI for international remittances and credit delivery in unbanked populations.

Methodology

- **Type of Research:** Descriptive and qualitative
- **Data Source:** Secondary data from RBI, NPCI reports, research journals, whitepapers, and fintech websites (2020–2025)
- **Scope:** Trends in UPI technology, user adoption, new use cases, and global expansion
- **Tools Used:** Content analysis, trend mapping, and comparative study

Detailed Analysis: Emerging Trends in UPI

1. UPI Lite

- Enables small-value offline payments (up to ₹500) without requiring real-time bank authentication.
- Addresses network issues in rural or crowded areas (e.g., public transport).

2. UPI Credit on Rupay Cards

- UPI integration with credit cards (especially RuPay) allows users to make credit-based transactions through UPI.
- Promotes credit inclusion among new-to-credit segments.

3. UPI Autopay & Recurring Payments

- Facilitates automatic debits for subscriptions, EMIs, and utility bills.
- Supports microfinance institutions and insurance companies.

4. UPI for International Transactions

- Cross-border UPI payments now active with countries like Singapore, UAE, and Bhutan.
- Potential to reduce foreign remittance costs and increase financial linkages.

5. Voice-Based UPI (UPI 123Pay)

- Designed for feature phone users without internet access.
- Uses IVR technology to expand UPI's reach in low-literacy regions.

6. UPI in Government Schemes

- Increasing use in Direct Benefit Transfers (DBTs), PDS, MNREGA, and subsidy payments.
- Reduces leakage and ensures transparency.

7. UPI for Small and Informal Businesses

- QR code payments have become a lifeline for street vendors and kirana stores.
- Integrated accounting tools and GST compatibility gaining ground.

8. AI & ML for Fraud Detection

- Enhanced monitoring of transaction patterns, phishing attempts, and anomalies.
- Use of machine learning to detect and block fraud in real time.

9. UPI in Transit and Toll Payments

- Enabled through FASTag integration and NCMC (National Common Mobility Card).
- Encourages cashless transport systems.

10. Embedded UPI in Social and E-Commerce Apps

- Deep integration with WhatsApp, Amazon, Flipkart, and Swiggy allows contextual and conversational payments.
- Increases convenience and transaction frequency.

Pictorial Representation



The image presents a simple infographic summarizing emerging trends in the Unified Payments Interface (UPI) in India, broken down into four key areas:

1. UPI Goes Global

- Indicates the international expansion of UPI, enabling cross-border payments and acceptance in countries like Singapore, UAE, and France.

2. UPI 3.0: Smarter & More Inclusive

- Suggests the integration of features like voice-based payments and increased accessibility for diverse user groups (including rural and senior users).

3. Wearable & Offline Payments

- Shows the adoption of smart devices (e.g., smartwatches) and offline UPI solutions like UPI Lite for small-value transactions without internet.

4. Embedded Credit & Wallet Integration

- Reflects the linking of UPI with credit cards, digital wallets, and Buy-Now-Pay-Later (BNPL) features, enhancing financial flexibility and convenience.

Findings

- UPI is moving beyond retail payments to encompass **credit, microfinance, government services, and cross-border commerce**.
- **Rural and low-bandwidth innovations** like UPI Lite and voice-based payments are crucial for financial inclusion.

- UPI is becoming a **multi-modal platform**: supporting not just payments but also credit, identity, and loyalty services.
- Merchant acceptance has grown significantly due to **zero MDR (Merchant Discount Rate)** policy, although long-term sustainability is debated.
- Increasing adoption by **women, senior citizens, and non-English speakers** suggests inclusivity improvements.

Suggestions

1. **Enhance Cybersecurity & Consumer Awareness**
 - Regular campaigns on fraud prevention, password safety, and official app usage.
2. **Strengthen UPI for International Remittances**
 - Partner with more countries to reduce costs for Indian expatriates and NRIs.
3. **Incentivize Small Merchant Onboarding**
 - Provide tax rebates or loyalty schemes to encourage micro-businesses to adopt UPI QR.
4. **Integrate Digital Literacy into Government Programs**
 - Especially for UPI 123Pay and regional language interfaces in rural areas.
5. **Develop a Clear MDR Framework**
 - Ensure a balanced ecosystem where banks and fintech's are incentivized to innovate.

CONCLUSION

UPI has transformed from a basic payment system into a versatile and inclusive digital infrastructure. Its emerging trends reflect not only technological advancement but also a conscious push toward equity and accessibility in financial services. As India aspires to be a global fintech hub, UPI will play a pivotal role in shaping the future of real-time payments. Strategic policymaking, innovation, and public-private collaboration will be key to sustaining this momentum.

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