International Journal of Education, Modern Management, Applied Science & Social Science (IJEMMASSS)
ISSN :2581-9925, Impact Factor (Cosmos: 7.555&I2OR: 5.105), Volume 08, No. 01(III) (Special Issue), January- March, 2026, pp. 201-208

Digital Payments as an Engine of Inclusive Growth: India's NPCI-LED Model and Global Policy Lessons

Dr. Anju Agarwal[1] | Pooja Soni[2*]

[1]Associate Professor, Department of Business Finance and Economics, Jai Narain Vyas University, Jodhpur, Rajasthan.
[2]Research Scholar, Department of Business Finance and Economics, Jai Narain Vyas University, Jodhpur, Rajasthan.

[*]Corresponding Author: hpsoni1998@gmail.com

Abstract

Digital payment systems are revolutionizing India's financial landscape, empowering millions and making economic transactions faster, easier, and more inclusive. Through an exploration of NPCI's digital payment mechanisms, this study uncovers their role in advancing financial inclusion and inclusive economic development in India. By enabling faster and more secure transactions, digital payment systems are at the forefront of India's economic modernization and inclusivity. The analysis indicates that digital transactions in India have grown rapidly, with UPI playing a decisive role in increasing the frequency and reach of cashless payments. With NPCI's platforms, payments are more straightforward, and formal financial participation has been widened for individuals, businesses, and marginalized populations. Through NPCI, payment procedures are easier, banking services are more widely available, and inclusion for all market participants—including the underserved—is expanded. The study highlights that digital payment infrastructure in India has evolved beyond a technological innovation into a foundational economic system that supports efficiency, transparency, and inclusion. The study's outcomes suggest that NPCI's system represents a durable and effective model for digital finance, offering meaningful guidance for developing economies interested in inclusive, technology-led expansion.

***Keywords**: NPCI, Digital Payment Systems, UPI, Financial Inclusion, Public Digital Infrastructure.*

Introduction

The rapid rise of digital innovation has significantly redefined financial systems and the mechanisms of economic transactions worldwide. India's digital payment evolution has not only sped up and simplified transactions but also extended formal financial services to more people. To appreciate the full impact of digital payments, it's important to study both their contributions to inclusive growth and the institutional frameworks that facilitate their development. Given this background, the upcoming sections will discuss the ties between digital payments and inclusive growth, examine NPCI's part in boosting the digital payment space, and assess the latest trends in digital transactions.

Digital Payments and Inclusive Growth

Digital payments are now central to modern economies, particularly in places like India, which were once dominated by cash-based transactions. Beyond economic growth, inclusivity demands that all societal groups benefit equally from financial services and opportunities. Digital payment solutions, in this context, help remove barriers for those without full banking access, promoting economic participation, enabling savings and investment, and linking marginalized communities to the formal financial sector.

[*]***A Special Issue for the papers accepted for publication in the International Multidisciplinary Conference on India's Foreign Policy and International Relations:A Future Roadmap (IFPIR-2026) (Hybrid Mode)(22-24 January 2026) Organized by Geo-Politics &Defence Study Research Cell, Faculty of Arts, Education and Social Sciences, Jai Narain Vyas University, Jodhpur, Rajasthan.***

India's swift move toward digital payment systems in the past decade has made it a world leader, clearly showing how technological infrastructure can drive economic inclusivity.

Digital Payments as Tools of Economic Inclusion

Digital payments do more than transfer funds; they empower economic inclusion by offering financial services that are accessible, cost-effective, and transparent. Mobile-based and immediate payment platforms give individuals and small businesses the ability to transact even in areas where physical bank branches are few and far between. UPI, India's pioneering real-time payment solution, has changed the landscape by supporting person-to-person and person-to-merchant transactions through user-friendly mobile apps. As a result, more people from various socio-economic backgrounds can now access financial services, leading to a decline in informal financial activities.

Structural Transition in Payment Systems: From Cash Dominance to Digital Architecture

The structure of payments in India has transformed, shifting away from cash-centric transactions toward digital solutions that allow for immediate settlements. In the early 2010s, most Indians relied on cash for transactions because of inadequate banking networks and limited financial awareness. However, the rise of affordable smartphones, greater internet access, and favorable policies have sped up the move to digital payments. The majority of retail payment activity in India, as of 2025, occurred through digital channels, underscoring the nation's move toward digital payments in daily life.

Digital Payments as Economic Infrastructure Rather Than Financial Instruments

India's digital payment systems act as common infrastructure for daily financial activities, setting themselves apart from private, profit-focused products through public, interoperable platforms that enable seamless banking and merchant transactions. Lowering costs and eliminating the drawbacks of cash, this infrastructure ensures user trust with its secure, fast, and accessible features. The broad spectrum of UPI's uses—from shopping to bill payments—demonstrates that digital payments are now at the heart of the digital economy.

Inclusive Growth as a Policy Objective in Contemporary Development Discourse

Ensuring equitable prosperity has made inclusive growth a top policy priority for governments, especially in developing countries. Financial inclusion, which means widespread availability of financial products and services, is central to this approach. Digital payments facilitate the integration of underserved populations into the formal economy by reducing transaction costs and overcoming geographic and demographic barriers. These platforms boost economic resilience through direct, efficient government benefit disbursement, minimizing leakages and promoting responsible management.

Positioning Digital Payments as a Transmission Channel of Inclusive Growth

By making economic exchanges more transparent, efficient, and faster, digital payments help foster inclusive growth. Integration with banks and government agencies ensures that funds, such as welfare, are transferred directly and securely with minimal administrative costs. Digital platforms working alongside DBT schemes have facilitated accurate and quick crediting of welfare payments and subsidies to recipients, reducing the role of intermediaries and preventing leakage. With these mechanisms, digital payments enable the direct transfer of economic benefits to intended citizens, improving overall governance and participation in the economy.

India's Digital Payment Transformation and the Role of NPCI

The transformation of India's payment ecosystem to digital has been enabled by a strong institutional base, with NPCI at the forefront. With a vision for a unified and inclusive retail payment system, the Reserve Bank of India and the Indian Banks' Association established NPCI as a not-for-profit organization. Functioning as a public utility instead of a profit-focused entity, NPCI guarantees that digital payments remain affordable, accessible, and stable, supporting broad adoption across different segments of society.

Through its work on multiple digital payment systems, NPCI has driven India's evolution from predominantly cash transactions to a digital payments architecture. Recognized as the flagship platform, UPI delivers real-time, low-fee, and universally compatible payments across banks for both personal and merchant transactions. The AePS also expands access to fundamental banking through biometric authentication, significantly supporting rural and marginalized groups and enhancing the financial inclusion framework.

NPCI has also developed card and utility payment systems to make retail transactions more efficient. RuPay offers an affordable digital card payment alternative within India, while BBPS provides an integrated and interoperable platform for recurring bill payments across diverse sectors. The introduction of NETC–FASTag has improved operational efficiency in transportation through seamless electronic toll transactions. These platforms, working within a shared institutional system, have made digital payments a form of public digital infrastructure, further establishing their role in supporting inclusive growth in India.

India as a Global Case of Payment-Led Financial Transformation

India's journey in digital payments stands out globally because of the scale and speed at which transformation has occurred. Under NPCI's management, UPI has emerged as one of the top real-time payment systems worldwide by volume. Recent figures indicate that in 2025, UPI made up nearly half of global real-time transactions—an outstanding result for a recently created platform. RuPay cardholders from India can access ATM and POS services in Bhutan, Nepal, Singapore, Maldives, Mauritius, and the UAE. Likewise, Bhutan and Mauritius issue RuPay cards that are accepted in India, supporting reciprocal use. This international expansion demonstrates the enhanced interoperability of India's payment systems and illustrates the NPCI's rising influence as a model for payment-driven financial reform worldwide (Reserve Bank of India, 2024). India's global leadership showcases how affordable, interoperable, and public digital payment infrastructure can achieve mass adoption and inspire other developing countries

Purpose and Scope: In light of significant financial and technological advancements, this research evaluates NPCI-led digital payment systems as mechanisms for inclusive growth in India.

Review of Literature

Haque et al. (2025) analysed rural UPI adoption in India with logistic regression and determined that UPI use greatly increases access to formal financial services among rural households. Their study highlights age, education, and income as demographic predictors and demonstrates UPI's potential to bridge rural–urban divides. They stress the necessity for targeted literacy and incentive efforts to foster inclusive financial behaviours in less connected areas, thereby strengthening the relationship between digital payments and financial inclusion. **K. Padma Kiran & Sailaja (2025)** used the Unified Theory of Acceptance and Use of Technology (UTAUT) to investigate how expectations of performance and effort, social influence, and facilitating conditions affect UPI adoption. The findings demonstrate these factors' significant effects on behavioural intentions, suggesting that users' perceptions of usefulness, simplicity, and trust are vital for the widespread, inclusive adoption of digital payments. **Bala & Sharma (2025)** found that demographic profiles, technology perceptions, and policy environments collectively affect digital payment adoption. They argue that inclusivity is enhanced when digital infrastructure, incentives, and awareness programs are strategically coordinated. **Agarwal & Khatri (2024)** analysed the growth curve of digital transactions in India and reported surge trends in UPI, mobile wallets, and other payment tools. Their analysis shows that ongoing digital payment growth aligns with increased engagement in formal banking and financial activities among various income groups, underscoring the pivotal role of digital payments in fostering inclusive economic transformation. **Kumar (2024)**explored patterns of UPI adoption and security perceptions among users in Bhagalpur, Bihar, and determined that the platform is accepted by a wide range of age and income groups. He points out that fostering trust and improving security are essential for encouraging inclusive uptake among financially underserved populations. **Shrimali et al. (2024)**analysed UPI's evolution from 2016, identifying policy support, interoperability, and simple interfaces as key drivers of adoption. They highlight how these technological developments have fostered greater participation in formal finance and advanced India's transition to a cashless society.**Rout & Ray (2024)** illustrated how digital payment solutions like UPI, AePS, and mobile wallets are redefining financial inclusion in India's semi-urban and rural regions. They argue these platforms transcend transactional efficiency, acting as powerful mechanisms for integrating marginalized groups into the formal financial sector. Their adoption helps diminish social and economic exclusion, thus playing a vital role in promoting inclusive growth and long-term economic resilience. **Sreeshavittala & Ravi (2024)**found that UPI not only improved financial documentation and reduced reliance on cash but also encouraged merchants to join formal financial channels, thereby supporting inclusive growth in retail. **Rastogi et al. (2021)**illustrates that the adoption of UPI has resulted in a surge in transaction volume while also making a significant contribution to financial inclusion and economic growth, especially for groups previously excluded from the financial ecosystem. Their research supports the view that innovative payment platforms can minimize access challenges and foster widespread economic involvement. **Baghla (2018)** explored adoption levels and public perceptions of digital payments in India.

The study identified the obstacles users encounter when shifting to digital payments and assessed their perspectives on moving away from cash. Using diverse data sources, the research revealed that while government efforts to promote a cashless economy were making progress, issues such as lack of trust, technological barriers, and security worries still limited widespread acceptance. The study concluded that, although India is progressing towards digital payments, achieving a fully cashless economy will take sustained effort and time due to ongoing structural and behavioural challenges. **Philip (2019)**assessed that UPI's launch brought about significant changes in financial behaviour, with its accessible interface and government backing driving users to engage more with digital transactions and reduce their reliance on informal finance.

Research Methodology

The research takes a descriptive approach to analyse the influence of NPCI-led digital payment systems on India's inclusive growth. The investigation relies solely on secondary data collected from authoritative and publicly available sources such as RBI, NPCI, and other official publications. The analysis emphasises recent developments to capture the evolving dynamics of digital payment adoption.

Key indicators analysed in this study include trends in overall digital payment transactions, the growth path of UPI, and the proportion of UPI within all digital payments. These measures help determine the overall scale, progression, and enhanced relevance of digital payments within India's economic framework. Owing to its prominence, UPI's transaction figures are utilized as key measures of digital payment expansion within NPCI's offerings.

Through an assessment of aggregate trends and comparative distributions, the study demonstrates how digital payment system growth has boosted accessibility, lowered transaction hurdles, and supported broader engagement with formal financial services. he analysis enhances understanding of NPCI's role in advancing inclusive economic progress offer valuable insights for policymaking in developing countries.

Empirical Analysis and Trends

- **Progression of Digital Payment Transactions in India from 2019 to 2024**

Reference Year	Transaction Volume (crore)	Transaction Value (₹ lakh crore)
CY-2019 (Base Year)	3,140	1,695
CY-2024(Terminal Year)	20,787	2,759

Source: Author's compilation based on Reserve Bank of India (2024), Payment and Settlement Systems Report.

Between CY-2019 and CY-2024, digital payments in India grew considerably. The transaction count rose from 3,140 crore to 20,787 crore, reflecting a sharp rise in activity, while the total value moved from ₹1,695 lakh crore to ₹2,759 lakh crore, indicating moderate value growth.A sharper rise in transaction numbers than value implies increasing adoption of low-value digital payments on a frequent basis, mostly driven by UPI, pointing to digital payments' integration into routine economic activity.

With a 45.9% CAGR in transaction volume compared to a 10.2% CAGR in value, the data reveal that digital payment growth has been driven more by increased transaction activity than by a corresponding rise in value(RBI, 2024).

- **UPI Transaction Patterns Over Time**

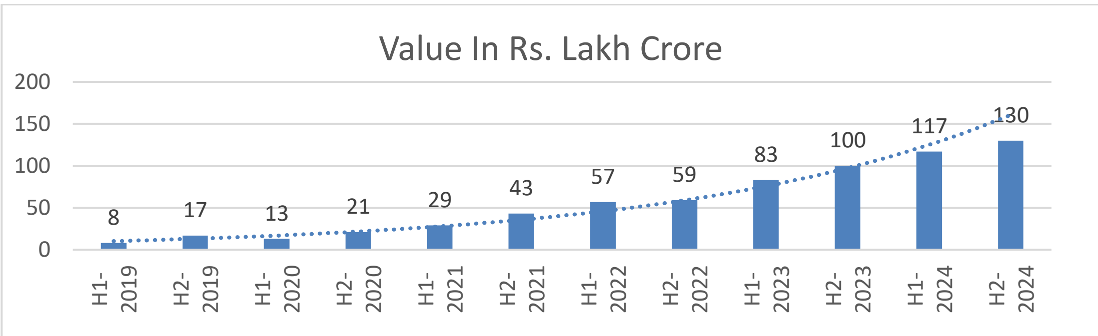

Figure 2.1: UPI Transaction Patterns Over Time (in value)

Source: Author's compilation based on RBI (2024).

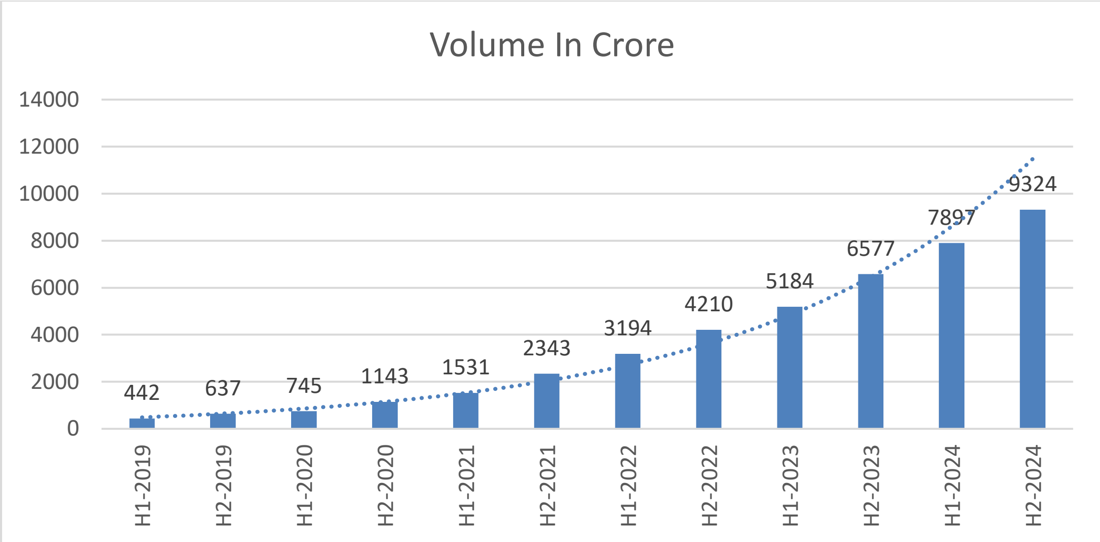

Figure 2.2: UPI Transaction Patterns Over Time (in volume)

Source: Author's compilation based on RBI (2024).

From 2019 to 2024, UPI recorded remarkable increases in transaction numbers and value, climbing from 1,078.75 crore to 17,220.80 crore and from ₹18.37 lakh crore to ₹246.83 lakh crore. CAGRs of 74.03% (volume) and 68.14% (value) point to widespread and deepening UPI adoption. The impressive growth figures underline UPI's foundational role in the digital payment system of India. Its growing adoption by consumers and merchants showcases its real-time, efficient, and user-friendly nature(RBI, 2024).

- **UPI's Proportion in Total Digital Payments**

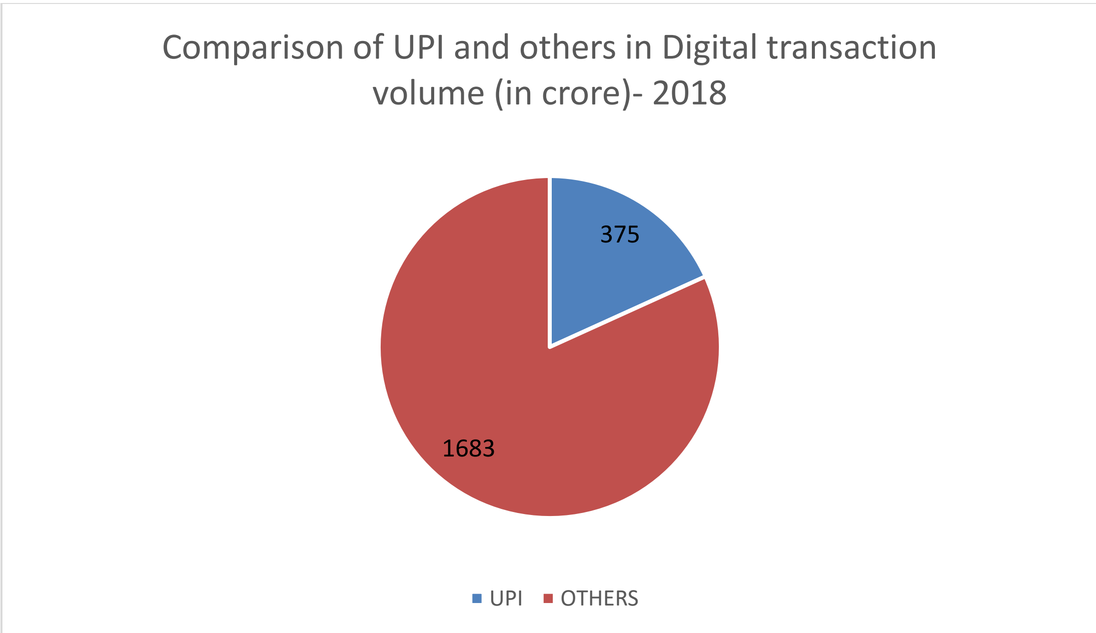

Figure 3.1: UPI's Proportion in Total Digital Payments (2018)

Source: Author's compilation based on RBI (2024).

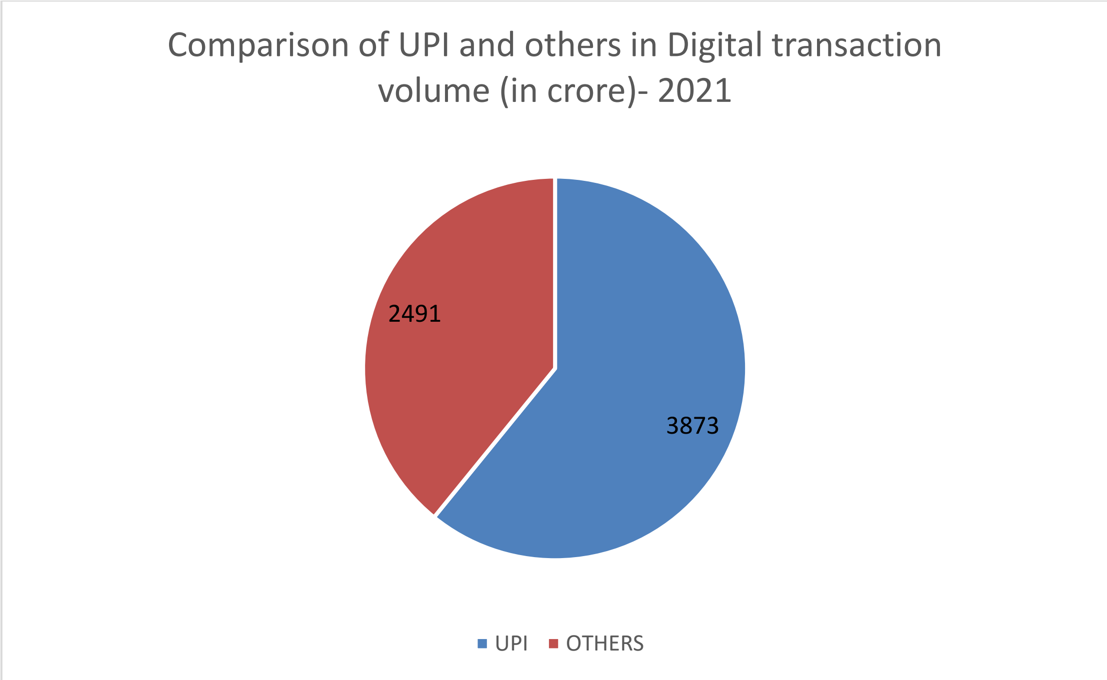

Figure 3.2: UPI's Proportion in Total Digital Payments (2021)

Source: Author's compilation based on RBI (2024).

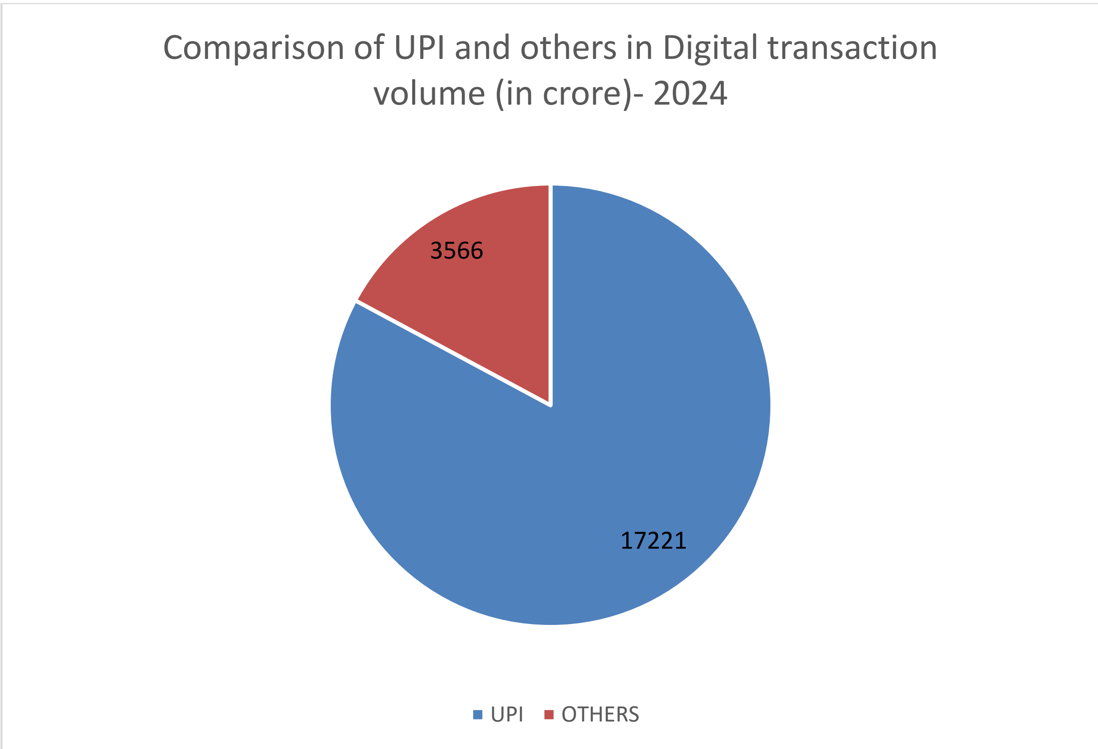

Figure 3.3: UPI's Proportion in Total Digital Payments (2024)

Source: Author's compilation based on RBI (2024).

The visual data clearly illustrates UPI's fast-growing dominance in digital transactions**.** Initially smaller in 2018, UPI overtook other payment platforms by 2021 and dominated by 2024, with over 17,000 crore transactions. This reflects UPI's widespread integration, real-time efficiency, vital part in advancing financial inclusion and cashless transactions(RBI, 2024).

UPI's Worldwide Presence and Acceptance

The growing global uptake of UPI signals the international relevance of India's integrated digital payment platform. Countries including Singapore, the United Arab Emirates, Bhutan, Nepal, France, Sri Lanka, Mauritius, and Qatar have implemented or connected to UPI through bilateral partnerships **(PIB, 2025).** These international UPI arrangements ease remittance sending, tourist spending, and merchant operations, spreading the advantages of real-time digital transactions beyond India. The worldwide interest in UPI reflects the adaptability of India's economical, scalable, and interoperable payment framework, marking it as a guiding example for nations wanting inclusive and efficient digital payments. Recent reports further affirm the global prominence of UPI: according to the IMF, it leads globally as the largest retail fast-payment system by transaction volume **(IMF, 2025)**, and industry figures suggest it accounts for close to 49% of real-time payment transactions worldwide **(ACI Worldwide, 2024)**.

Conclusion

The study shows the substantial impact of NPCI-driven digital payment solutions on India's payment system. There has been a considerable increase in digital transaction volumes, with UPI emerging as the leading method. This trend in rising numbers and UPI's expanding share signifies an essential change in payment habits and points to the increasing presence of digital finance in everyday transactions.

The findings emphasize NPCI's central role in shaping India's digital payments infrastructure. Through the creation of interoperable and cost-effective systems, NPCI has built a strong foundation for smooth interbank transactions and extensive user inclusion. This institutional structure has boosted confidence, secured operational reliability, and encouraged broad adoption of digital payments.

By enhancing access to formal banking and improving transaction efficiency, digital payment systems have supported inclusive economic progress. The widespread use of UPI and NPCI platforms demonstrates the expansion of financial participation and the solidification of the digital economy. The evidence points to digital payment infrastructure acting as more than just technology, but as a vital facilitator of economic inclusion.

The adoption of NPCI-driven digital payments in India delivers valuable global policy lessons. The analysis indicates that with interoperability, scalability, and a public-oriented focus, digital payment systems—supported by effective regulation—can accelerate digital advancement in developing countries. India's experience offers a practical guide for nations wanting to establish resilient and inclusive digital financial systems. The study concludes that the NPCI model is a sustainable path for fostering inclusive, technology-driven economic growth.

References

1. ACI Worldwide. (2024). *Prime time for real-time*. ACI Worldwide
2. Agarwal, M., & Khatri, M. (2024). Digital Transactions in India− Unveiling the Growth Curve. *Academy of Marketing Studies Journal*, *28*(1).
3. Baghla, A. (2018). A study on the future of digital payments in India. *International Journal of Research and Analytical Reviews*, *5*(4), 85-89.
4. Bala, K., & Sharma, S. (2025). Factors Influencing Digital Payment Adoption among Indian Consumers: A Review. *Research Review Journal of Social Science*, *5*(1), 24-33.
5. Haque, M. I., NP, A. A., & Akhtar, S. J. (2025). UPI and financial inclusion in rural India: A case study. *Development and Sustainability in Economics and Finance*, *6*, 100056.
6. International Monetary Fund. (2025). *Growing retail digital payments: The value of interoperability*. International Monetary Fund.
7. Kumar, A. (2024). Digital payment dynamics: Analyzing UPI adoption, usage, and security concerns in Bhagalpur, Bihar. *RESEARCH REVIEW International Journal of Multidisciplinary*, *9*(4), 272-278.

8. Philip, B. (2019). Unified payment interface–impact of UPI in customer satisfaction. *Research Guru*, *12*(4), 124-129.
9. Press Information Bureau. (2025). *Advancing cashless India: UPI's global expansion*. Government of India.
10. Rastogi, S., Panse, C., Sharma, A., & Bhimavarapu, V. M. (2021). Unified Payment Interface (UPI): A digital innovation and its impact on financial inclusion and economic development. *Universal Journal of Accounting and Finance*, *9*(3), 518-530.
11. Reserve Bank of India. (2024). *Payment and settlement systems report*.
12. Reserve Bank of India. (2024).*Payment system report 2024*. Reserve Bank of India. https://www.rbi.org.in
13. Rout, M., & Ray, R. (2024). Analytical study of digital payment system for financial inclusion in India. *ShodhKosh: Journal of Visual and Performing Arts*, *5*(2), 1491-1497.
14. Shrimali, M., AGRAWAL, S., JAGAWAT, L., & PATIL, V. (2024). A Research Paper on 'Unified Payments Interface: Emergence, Growth and Where It Is Headed.'. *ShodhKosh: Journal of Visual and Performing Arts*, *5*(6).
15. Sreeshavittala, D. (2024). A Study on UPI Adoption among Marchant Outlets in Kalyana Karnataka. *South India Journal of Social Sciences*, *22*(1), 28-38.
16. Vedala, N. S. (2025). Assessing Unified Payments Interface (UPI) adoption and usage through the interplay of UTAUT factors. *Humanities and Social Sciences Communications*, *12*(1), 1-12.

❑❑❑