



International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Unified Payment Interface and its Affect on Indian Economy

Aniket Sharma , Mis Shweta Singh

UG Student ,School of Business, Galgotias University, Greater Noida, Uttar Pradesh

ABSTRACT

The Unified Payments Interface (UPI) was introduced by the National Payments Corporation of India (NPCI) in 2016. payments in India have experienced a revolution. With an emphasis on consumer behavior, digital infrastructure, financial inclusion, and small business operations, this study explores how UPI has transformed the Indian economy. UPI has significantly reduced transaction costs, enhanced real-time fund transfers, and increased access to financial services for of people, especially in rural and semi-urban areas The study emphasizes how UPI has aided in the formalization of the economy, encouraged transparency, and sparked growth in the fintech industry. It also looks at issues like digital literacy, cybersecurity, and the necessity of ongoing innovation. The results highlight the vital role UPI plays in creating a more resilient, effective, and inclusive digital

INRODUCTION

In 2016, the Unified Payments Interface (UPI) was launched by the National Payments Corporation of India (NPCI), and it has completely changed the financial scene in India. UPI has made digital transactions easier by allowing real-time money transfers via smartphones, greatly lowering reliance on cash. Its widespread adoption in both urban and rural areas can be attributed to its user-friendly interface and interoperability across banks and payment platforms. significantly impacted by UPI. It has brought millions of people into the official banking system, expanded financial inclusion, and sped up the transition to a cashless economy. UPI has been embraced by small companies, street sellers, and even private citizens for routine transactions, increasing transparency and decreasing the shadow economy. Better governance and data-driven policymaking have been made possible by the rise in digital footprints and improved tax compliance. Furthermore, UPI has supported India's fintech boom by enabling innovation in digital finance. It has also attracted global attention, with several countries expressing interest in adopting similar models. As UPI transactions continue to grow exponentially, the Indian economy benefits from greater efficiency, cost savings, and a robust digital infrastructure. Overall, UPI stands as a cornerstone in India's journey toward a modern, inclusive, and digitally empowered economy. The formalization of India's economy has also been significantly impacted by the quick adoption of UPI. UPI has helped to increase accountability and decrease dependence on the unofficial cash-based system by digitizing transactions at all levels, from big corporations to street vendors. Better credit access is supported by this shift because digital transaction records assist small businesses and individuals in establishing credit histories, which makes it easier for banks and fintech companies to provide loans. Additionally, UPI has reduced transaction costs for businesses and consumers alike. Conventional payment methods frequently included delays, infrastructure obstacles, or intermediary fees. Even in remote areas, UPI's 24/7 availability and zero or low transaction fees have made financial transactions easier and more accessible. This has improved financial literacy, empowered rural communities, With UPI, government programs like Direct Benefit Transfers (DBT) have also become more effective, guaranteeing that welfare payments and subsidies reach recipients directly with little corruption or leakage. Essentially, by increasing its transparency, inclusivity, and efficiency, UPI fortifies the economic ecosystem. Its success demonstrates India's capacity to use technology for the benefit of society and establishes the nation as a leader in financial innovation and digital payments worldwide.

LITERATURE REVIEW

The Unified Payments Interface (UPI) is a system that combines various banking functions, smooth fund routing, and merchant payments into a single mobile application (of any participating bank). The National Payments Corporation of India introduced UPI, which is based on the Immediate Payment Service (IMPS) he Reserve Bank of India (RBI), India's central bank, is the regulating and governing body.ensures financial stability and offers regulatory oversight for digital payments.System Operator is a 2008-founded non-proftioversees and runs UPI.oversees the technology infrastructure and establishes standards and protocols.Core Infrastructure NPCI's UPI Platform links users, payment apps, and banks.HandlesSwitching transactions in real time Bank settlement User authentication (through the use of UPI PINs, mobile numbers, etc.)

Benefits and Barriers:

Connectivity & Infrastructure Problems

- .. Poor internet and mobile connectivity are common problems in rural and isolated areas, which restricts UPI accessibility
- . Thedependability of UPI services is impacted by server delays and outages during peak hours.

. Fraud and Cybersecurity

Phishing, app cloning, and social engineering scams are examples of digital payment frauds that are increasing in frequency along with the use of UPI. Due to their ignorance of cyber hygiene, many users are susceptible to fraud.

. The Policy of Zero Merchant Discount Rate (MDR)

There is currently no MDR for UPI transactions, so there are no fees for merchants.

. PSP and TPAP Revenue Model

Although they rely on UPI, third-party apps like PhonePe and Google Pay do not receive payment for transactions. This has

COUNTRY RELATIONS

INDIA In 2016, the Unified Payments Interface (UPI), a ground-breaking digital payment system, was developed by the National Payments Corporation of India (NPCI). It enables safe, efficient, and compatible financial transactions between bank accounts on mobile devices. UPI has become a vital part of India's digital economy because it facilitates easy peer-to-peer (P2P) and person-to-merchant (P2M) payments.

FRANCE NPCI International and Lyra, a significant French payment provider, partnered to introduce UPI in France. With the help of apps like Paytm, PhonePe, and Google Pay, Indian tourists can use UPI to make direct payments from their Indian bank accounts at popular tourist destinations like the Eiffel Tower and Galeries Lafayette. UPI lessens reliance on foreign exchange transactions (such as credit card payments in USD/EUR) by facilitating direct rupee payments overseas.

Germany The latest country to adopt UPI, following successful implementations in nations such as the UAE, Singapore, and France. This expansion was highlighted during the visit of German Minister Volker Wissing to India, where he experienced firsthand the convenience of UPI by making a digital payment at a local vegetable market in Delhi. His reaction underscored the simplicity and efficiency of India's digital payment system.

Singapore Connecting, There are several ramifications between Singapore's PayNow system and India's Unified Payments Interface (UPI), particularly with regard to digital payments and cross-border transactions and remittances. Launched in February 2023, this connection allows for quick and inexpensive money transfers between the two nations using UPI IDs or mobile numbers.

METHODOLOGY

The impact and user perception of the Unified Payments Interface (UPI) in standards. This study uses a descriptive and analytical research methodology to evaluate India. The study uses a mixed-methods approach, combining quantitative data from structured questionnaires with qualitative insights from interviews and secondary sources. Stratified random sampling is used to target UPI users in urban, semi-urban, and rural areas. Primary data is gathered through online and offline surveys, while secondary data is obtained from government publications, the RBI, and the NPCI. The data is analyzed using descriptive statistics in Excel/SPSS, and voluntary participation and data confidentiality are guaranteed to respect ethical standards.

DATA SOURCES Primary Sources of Information

directly gathered during fieldwork by the researcher

Questionnaires and surveys

conducted between banking experts, merchants, and UPI users.

Focus groups and interviews

With rural users, small business contexts (such as marketplaces and kirana shops)

SECONDARY SOURCES India's UPI (Unified Payments Interface) workforce Do you want to know how many people work for organizations like NPCI, banks, and fintech companies that create or maintain UPI infrastructure?

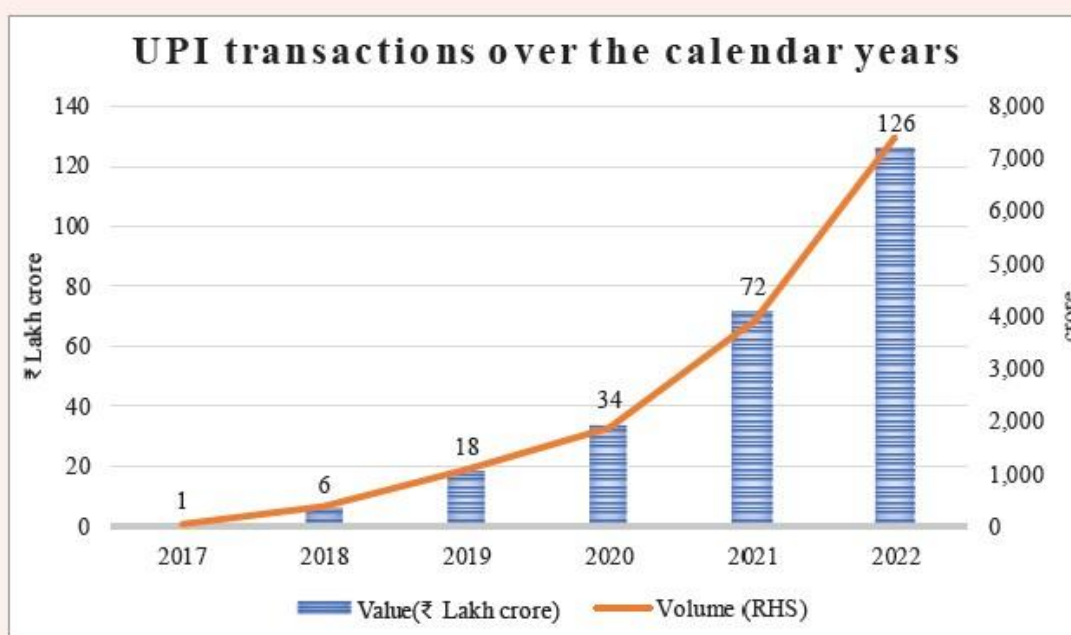
UPI-related jobs Do you mean job openings in the UPI ecosystem, such as those for backend developers, cybersecurity, and customer service?

RESULT

The alternative hypothesis is strongly supported by the examination of secondary data, which shows that the integration of UPI services in India and other countries has significantly improved Payment accessibility. The results show how digital payments greatly enhance outreach, particularly in underprivileged and rural areas, when it is backed by funding, technology, and legislation.

UPI Growth in India

From smartphone users in cities to owners of feature phones in rural areas, UPI has democratized digital payments and made them available to everyone. More transactions in India are handled by UPI as of 2025. More people are using UPI this even in the rural and urban area the growth is super and street vendors also carry the qr scanners with them now the rate of UPI payment is very high in India.



Source: NPCI

Figure showing the upi effect in over the years numbers of rapid upi transaction over the years 2017-2025

1. **Time Frame:**

The graph covers UPI transaction data from **2017 to 2022**.

2. **Two Metrics Shown:**

- **Blue bars** represent the **value of transactions in ₹ Lakh Crore** (on the left Y-axis).
- **Orange line** represents the **volume (number) of transactions in crore** (on the right Y-axis).

3. **Exponential Growth:**

Both value and volume of transactions have grown exponentially over the years.

4. **Transaction Value Growth (₹ Lakh Crore):**

- 2017: ₹1 Lakh Crore
- 2018: ₹6 Lakh Crore
- 2019: ₹18 Lakh Crore
- 2020: ₹34 Lakh Crore
- 2021: ₹72 Lakh Crore
- 2022: ₹126 Lakh Crore

5. **Transaction Volume Growth (in Crore Transactions):**

- 2017: ~100 crore
- 2018: ~500 crore
- 2019: ~1,300 crore
- 2020: ~2,300 crore
- 2021: ~4,500 crore
- 2022: ~7,800 crore

6. **Steepest Growth:**

- The **highest growth jump** in both value and volume occurred between **2021 and 2022**, indicating massive adoption during this period.

7. **Source Credibility:**

The data is sourced from the **NPCI (National Payments Corporation of India)**, ensuring official and reliable figures.

8. **Implication:**

This growth reflects UPI's increasing importance in digital payments, replacing traditional cash and card-based transactions in India.

Chapter10: Conclusion

This comparative study demonstrates that upi has been a powerful catalyst forexpandingaccesstocareacrossallfourcountriestexamined.India scaled to hundreds of millions of consults, the Germany . established near- universal payment adoption, France legalized and rapidly expanded digital , and Singapore launched digital upi system.

Yet, inequities persist along digital and infrastructural divides upi uptake remains highest among well-served populations. To overcome this, we propose a super fast model that partners payments latforms with zero percent commission

- India:
- Singapore
- France
- Germany

Policy Recommendations

1. **Invest in Rural Connectivity:** Subsidize broadband and create upi based Wi-Fi hubs.
2. **Integrate CHWs:** Provide training and devices so local coustmers to use the upi
3. **Open bank accounts for use of digital payments** cross border and rural and urban
4. **Implement Feedback Loops:** Track coustmers toutcomes and satisfaction to continually refine protocols.

By combining robust infrastructure, supportive regulation, and localized human facilitation, upi can transition from a country stopgap to a core pillar of universal digital platform

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