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**A STUDY ON IMPACT OF UPI ON INDIAN DIGITAL PAYMENT**

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**ABSTRACT**

The rapid advancement of digital technology has significantly transformed global financial and payment systems, with National Payments Corporation of India (NPCI) playing a pivotal role in India's digital payment landscape. In recent years, digital payment platforms have gained substantial popularity due to their accessibility, speed, and convenience. Among these innovations, the Unified Payments Interface (UPI) represents a major milestone. UPI is a real-time payment system that enables users to transfer funds instantly between bank accounts through smartphone applications. Since its introduction, UPI has fundamentally transformed financial transactions in India by simplifying the payment process and facilitating secure, cashless transactions without reliance on traditional banking methods. The primary objective of this study is to examine the impact of UPI on India's digital payment ecosystem. Specifically, the study explores key aspects related to UPI usage, including user awareness, adoption patterns, frequency of use, perceived benefits, challenges encountered by users, and overall satisfaction with UPI services. Furthermore, the study analyzes how demographic variables such as age, gender, occupation, and residential location influence the adoption and utilization of UPI. By evaluating these factors, the research aims to provide a comprehensive understanding of UPI's role in driving the growth of digital payments in India. The findings of the study indicate that a majority of respondents are aware of UPI and actively utilize it for digital transactions, demonstrating its widespread acceptance. Additionally, many respondents have been using UPI for several years, suggesting that it has evolved into a reliable and well-established payment system. The results further reveal that UPI is extensively used for routine financial activities, including utility bill payments, purchasing goods and services, transferring money to individuals, and conducting online transactions. A significant proportion of respondents reported using UPI on a daily or weekly basis, highlighting its integral role in everyday financial practices.

**KEYWORDS:** UPI, Digital Payments, Financial Inclusion, Cashless Economy, Consumer Behavior, User Adoption, Transaction Efficiency, FinTech, Digital Transformation, Mobile Payments.

## INTRODUCTION

Over the past decade, India's financial and payment systems have undergone a significant transformation driven by the rapid advancement of digital technologies. The widespread adoption of smartphones, improved internet connectivity, and supportive government initiatives have accelerated the shift toward digital payment methods among individuals and businesses. Digital payments, defined as electronic transactions conducted without the use of physical cash, enable the secure and efficient transfer of funds between individuals, businesses, and financial institutions. These methods include debit and credit card transactions, online banking, mobile wallets, and mobile-based payment systems. The increasing adoption of such systems has enhanced the accessibility, transparency, and efficiency of financial transactions across the country.

A key development in India's digital payment ecosystem is the introduction of the Unified Payments Interface (UPI) by the National Payments Corporation of India in 2016. UPI was designed to provide a secure, simple, and real-time payment mechanism that enables users to transfer funds between bank accounts באמצעות mobile devices. Unlike traditional banking systems such as NEFT or RTGS, which are limited by processing times and operational hours, UPI facilitates instantaneous transactions on a 24/7 basis. The system utilizes a Virtual Payment Address (VPA), eliminating the need to share detailed bank account information during transactions, thereby enhancing user convenience and accessibility.

The implementation of UPI has fundamentally transformed the digital payment landscape in India by streamlining financial transactions. Through mobile applications, users can perform a wide range of activities, including sending and receiving money, paying utility bills, recharging mobile services, making online purchases, and completing retail transactions. The integration of UPI into platforms such as Google Pay, PhonePe, and Paytm has significantly increased its accessibility and user base. Furthermore, the adoption of QR code-based payments has enabled small businesses, street vendors, and local retailers to accept digital payments without requiring expensive infrastructure, thereby promoting wider participation in the digital economy.

Government initiatives have played a crucial role in promoting digital payments and supporting the expansion of UPI. Programs such as Digital India aim to enhance digital literacy and strengthen technological infrastructure across the country. Additionally, the Demonetization in

India 2016 significantly accelerated the adoption of digital payment methods by encouraging individuals and businesses to transition away from cash-based transactions. More recently, the COVID-19 pandemic further contributed to the growth of contactless payment systems, as concerns over hygiene and safety increased the demand for digital transactions.

Beyond improving transactional efficiency, UPI has contributed substantially to financial inclusion by extending banking services to previously underserved populations. It enables individuals in rural and semi-urban areas to participate in digital financial activities on mobile devices. Additionally, the platform has empowered small businesses and merchants by facilitating the acceptance of digital payments, thereby expanding their customer base and improving transaction transparency. The minimal or negligible transaction costs associated with UPI further enhance its attractiveness as a cost-effective payment solution for both consumers and businesses.

The rapid growth in UPI transactions in recent years highlights its increasing importance within India's digital payment ecosystem. The system processes millions of transactions daily, reflecting its widespread acceptance among users. UPI has played a critical role in strengthening the digital economy, reducing reliance on cash, and enhancing financial transparency. As a result, it has emerged as one of the most significant financial innovations in India.

Understanding the impact of UPI on digital payments is essential for evaluating the ongoing transformation of India's financial ecosystem. This study aims to examine the influence of UPI on consumer payment behavior, its role in accelerating the adoption of digital payment systems, and its contribution to the development of an inclusive and efficient financial environment in India.

## Literature Review

**1. Joshi, Pathak, and Kulkarni (2024)** investigated user attitudes regarding digital payment systems and the uptake of Unified Payments Interface (UPI) applications in India. The researchers examined how UPI's ability to facilitate quick money transfers via smartphones has revolutionized traditional banking. The study emphasized that UPI offers a practical and effective payment option that enables consumers to make merchant and peer-to-peer payments without going to a bank. Due to their knowledge with technology and digital platforms, the results showed that young, educated customers are the main UPI adopters. However, the study also identified issues with fraud and cybersecurity risks, which would prevent elderly consumers from adopting. Despite these difficulties, the authors came to the

conclusion that UPI has boosted India's transition to a cashless economy and has aided in the expansion of digital payments in that nation.

**2. Kumar (2024)** investigated UPI acceptance and usage trends in Bihar's Bhagalpur district. In order to understand how digital payment systems are used in routine financial transactions, the study gathered data from respondents from various demographic categories. According to the study, UPI's speed and convenience make it popular for tasks like bill payment, money transfers, and online shopping. Young adults with smartphones and internet access made up the bulk of users. The study also highlighted how adoption is strongly influenced by digital literacy and technological trust. However, obstacles to wider adoption were noted, including problems with network connectivity, technological difficulties, and worries about fraud. The study came to the conclusion that enhancing digital awareness and fortifying security measures will contribute to a rise in UPI adoption and usage throughout India.

**3.** In a research on the evolution of digital payment systems in India, **Kumawat (2025)** concentrated on UPI's function in enabling electronic transactions. According to the study, the National Payments Corporation of India's launch of UPI transformed digital payments by offering a convenient, safe, and real-time payment system. According to the study, UPI has made financial transactions easier by allowing consumers to connect several bank accounts to a single mobile app. Without requiring bank information, this tool enables instantaneous money transfers for both people and corporations. The study also showed that more consumers are adopting digital payments due to UPI's affordability and accessibility. The author came to the conclusion that UPI has greatly aided in the development of a cashless economy and has grown to be a key part of India's digital payment ecosystem.

**4. Shetty, Yashaswini, Kumar, and Shashikanth (2024)** looked at how many microbusinesses in Mysore were using UPI. The study concentrated on small vendors who increasingly take digital payments from clients, such as street food vendors and neighbourhoods store owners. According to the study, retailers now find it simpler to accept payments via UPI apps due to the extensive use of smartphones and QR codes. Digital payments, according to some small business owners, have improved transaction transparency and helped them keep better financial records. The study did, however, also draw attention to some issues, including poor internet connectivity, a lack of digital literacy among older sellers, and sporadic transaction failures. Despite these challenges, the authors came to the conclusion that UPI has significantly contributed to the integration of small merchants into the digital

financial ecosystem and has increased the efficiency of business transactions.

**5. Sahun (2024)** looked at how UPI changed the way small and medium-sized businesses (SMEs) in India handled their finances. In order to determine how digital payment methods affect business performance, the study gathered comments from entrepreneurs in a variety of industries. The results showed that UPI has improved the efficiency and security of commercial transactions. Additionally, it lessens reliance on currency and streamlines the payment process for both consumers and businesses. According to the survey, companies can track sales, keep digital records, and increase financial transparency with the help of digital payment systems. But the study also found obstacles like poor digital infrastructure in some areas and a lack of technology expertise. The author came to the conclusion that, in spite of these difficulties, UPI has greatly increased financial accessibility and aided in the expansion of India's digital economy.

**6. Lakshmi (2024)** examined how consumer behavior and financial inclusion were affected by the emergence of digital payment systems in India. The study highlighted how government programs like demonetization and Digital India hastened the uptake of digital payment systems. Because UPI enables instantaneous money transfers through mobile applications, it has become one of the most popular payment systems. The study also showed that urban and semi-urban residents now have greater financial accessibility thanks to digital wallets and UPI-based apps like PhonePe and Google Pay. Additionally, the COVID-19 pandemic greatly enhanced the adoption of contactless payment devices, which in turn made UPI transactions even more popular. The author came to the conclusion that by encouraging financial participation, convenience, and transparency among people and enterprises, digital payment platforms are revolutionizing India's financial system.

**7. A research by Baradwaj (2023)** examined Mumbai's small merchants' use of UPI. The goal of the study was to identify the variables affecting local vendors' and store owners' adoption of digital payment systems. The results demonstrated that a large number of businesses began taking UPI payments as a result of growing consumer demand and the ease of digital transactions. Merchants can now accept payments more easily without the need for costly point-of-sale devices thanks to the use of QR codes and mobile applications. Additionally, the study discovered that digital payments increased financial transparency and decreased the danger of handling cash. However, because to worries about transaction failures and cybersecurity dangers, some retailers continued to favor cash payments. According to the study's overall findings, UPI has significantly contributed to the growth of digital financial

services for small enterprises.

**8. Dev, Gupta, Dharmavaram, and Kumar (2024)** investigated how UPI payments affected Indian consumers' purchasing habits. To examine how digital payments impact financial practices, the researchers interviewed participants and administered a survey. The results showed that because digital transactions are rapid and simple, many respondents saw an increase in expenditure after using UPI. Digital payments, in contrast to cash payments, lessen the psychological awareness of expenditure, which could promote rash purchases. The study also emphasized the value of budgeting tools and financial literacy in assisting consumers in efficiently managing their spending. The authors stressed that UPI offers important benefits like convenience, transparency, and easier access to financial services despite the possibility of higher spending. The study came to the conclusion that in order to promote responsible financial conduct, digital payment apps should incorporate expense-tracking functions.

**9.** The distribution of transactions among several UPI applications in India was examined by **Hota, Kumar, Singh, Asudeh, Dey, and Chakraborty (2025)**. The study looked at the problem of market concentration in the digital payment environment, where most transactions are controlled by a small number of powerful apps. In order to preserve a balanced digital payment ecosystem, the researchers suggested a computational model that aids in distributing payment traffic among several platforms. The National Payments Corporation of India's regulatory measures to restrict the market share of any one application were also covered in the report. According to the findings, a balanced transaction distribution might boost innovation, increase competition, and lessen reliance on a select group of payment providers. The authors came to the conclusion that in order to guarantee the long-term sustainability and security of the UPI ecosystem, efficient regulation and technological innovation are crucial.

**10.** The goal of **Dahiphale et al. (2024)** was to increase confidence and security in digital payment systems like UPI. The study suggested using machine learning and artificial intelligence models to identify unusual financial activity and fraudulent transactions. The suggested technology can detect any fraud attempts and notify financial institutions instantly by examining user behavior and transaction patterns. The study showed that cutting-edge technology may greatly boost user confidence and enhance the security of digital payment platforms. The authors stressed that a key element affecting the uptake of digital payments is trust. Therefore, more consumers would be encouraged to adopt digital payment technologies if security infrastructure is strengthened and intelligent fraud detection systems are put in

place. According to the study's findings, using AI- based security solutions will improve digital financial systems' dependability and security.

## **Research Gap**

Despite the growing body of literature on digital payment systems, several important research gaps remain, particularly in the context of the Unified Payments Interface (UPI).

### **1. Limited Focus on User Experience and Behavioral Aspects**

A substantial proportion of existing studies primarily emphasize the technological infrastructure and transactional growth of digital payment systems. However, relatively fewer studies have explored user-centric factors such as consumer behavior, satisfaction levels, and overall user experience. Critical dimensions—including frequency of UPI usage, user satisfaction with services, ease of use for first-time users, and perceptions of security—remain underexplored. Understanding these aspects is essential for evaluating the effectiveness and sustainability of UPI adoption.

### **2. Insufficient Examination of Rural Adoption**

Although UPI has achieved widespread adoption in urban areas, its penetration in rural and semi-urban regions remains comparatively limited. Existing research predominantly focuses on urban usage patterns, often overlooking the unique challenges faced by rural users. These challenges include limited internet connectivity, lack of access to smartphones, low levels of digital literacy, and insufficient awareness regarding the security of digital payment systems. Addressing these issues is crucial for achieving inclusive digital financial growth.

### **3. Lack of Emphasis on Challenges and Risks**

The majority of studies highlight the advantages of UPI, such as cost-effectiveness, speed, and convenience. However, there is a relative lack of research examining the risks and challenges associated with its usage. Issues such as transaction failures, network disruptions, exposure to fraud and scams, and technical difficulties are not sufficiently addressed in existing literature. A comprehensive understanding of these risks is necessary to improve system reliability and user trust.

### **4. Limited Use of Primary Data**

A considerable portion of current research relies on secondary data sources, including transaction statistics, banking reports, and government publications. While such data is valuable for identifying macro-level trends, it does not fully capture the perceptions, experiences, and behavioral patterns of individual users. There is a need for more studies based on primary data to provide deeper insights into user perspectives and real- world usage

of UPI.

## **OBJECTIVE**

The present study is designed to examine the role and impact of the Unified Payments Interface (UPI) within India's evolving digital payment ecosystem. The specific objectives of the study are as follows:

1. To analyze the growth trajectory of UPI and evaluate its contribution to the transformation of the digital payment system in India.
2. To assess the impact of UPI on consumer payment behavior, with particular emphasis on the transition from cash-based transactions to digital payment methods.
3. To examine the role of UPI in promoting financial inclusion by facilitating accessible, efficient, and low-cost digital payment solutions across both urban and rural regions.
4. To identify and evaluate the key benefits and challenges associated with the adoption of UPI within the Indian digital payments landscape.

## **Collection of Data**

### **Research Method**

The study employed a structured questionnaire consisting of multiple types of questions to ensure comprehensive data collection. The questionnaire included:

- Multiple-choice questions to gather general demographic information and details regarding respondents' UPI usage.
- Closed-ended questions to obtain specific and quantifiable responses for statistical analysis.
- Likert scale questions to measure respondents' levels of agreement and satisfaction with UPI services.

This combination of question types facilitated both descriptive and analytical evaluation of the collected data.

### **Sampling Method**

The study utilized a convenience sampling method, wherein respondents were selected based on their accessibility, availability, and willingness to participate in the research. This non-probability sampling technique enabled efficient data collection within a limited timeframe.

Data were collected באמצעות an online questionnaire distributed through various digital platforms, including WhatsApp, email, and social media channels. Participation was

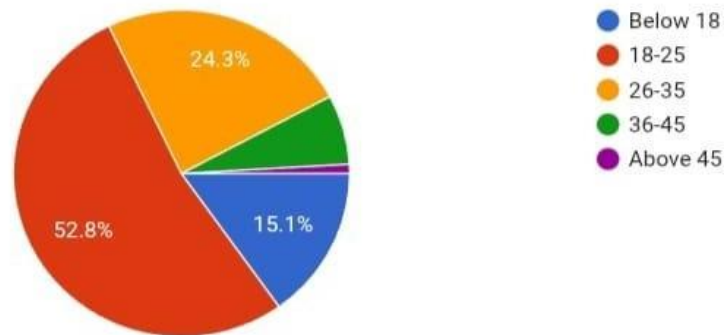
voluntary, and respondents who received the survey link and consented to participate completed the questionnaire.

A total of 218 responses were collected through this method, forming the basis for subsequent analysis.

### Analysis of Data

#### 1. Age group

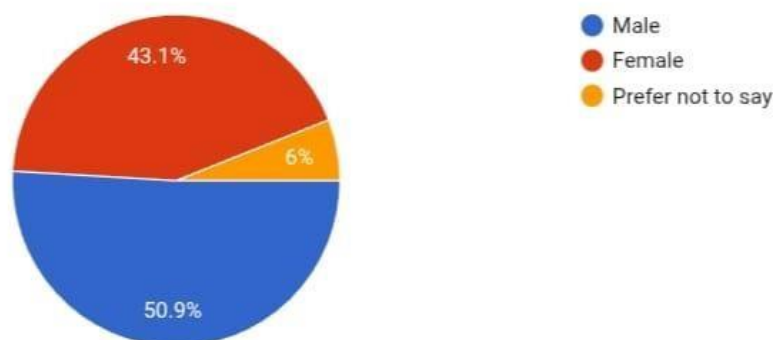
218 responses



The survey results show that the majority of respondents belong to the 18–25 age group (52.8%), indicating strong participation from young adults. This is followed by the 26–35 age group (24.3%), suggesting moderate representation of early working-age individuals. Respondents below 18 years (15.1%) also form a notable portion, while participation from the 36–45 age group is relatively low, and those above 45 years are minimal.

#### 2. Gender

218 responses

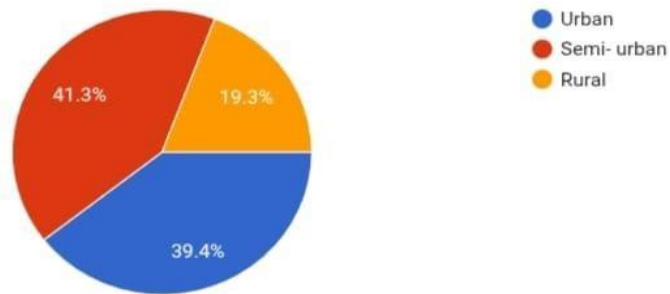


The gender distribution of respondents is fairly balanced, with male participants forming a slight majority (50.9%) and female participants closely following (43.1%). A small proportion of respondents (6%) preferred not to disclose their gender. Overall, the data indicates good

gender representation, suggesting that the survey results are not heavily biased toward a single gender and reflect diverse perspectives.

### 3. Area of residence

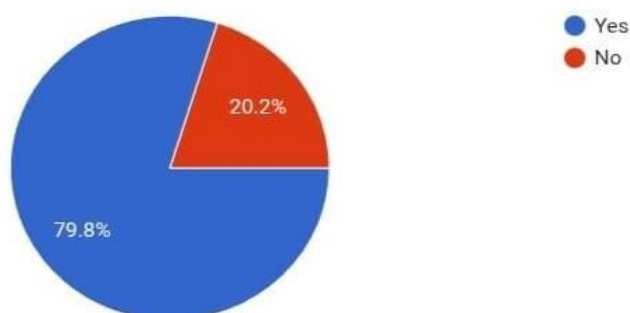
218 responses



The area-wise distribution of respondents shows a diverse residential representation. A large proportion of participants belong to semi-urban areas (41.3%), followed closely by those from urban areas (39.4%), while rural respondents account for 19.3% of the total. This indicates that the survey findings largely reflect the perspectives of urban and semi-urban populations, with comparatively lower but still significant input from rural areas. As a result, the conclusions drawn are more representative of regions with better access to infrastructure and services, while rural viewpoints may be slightly underrepresented.

### 4. Are you aware of UPI service

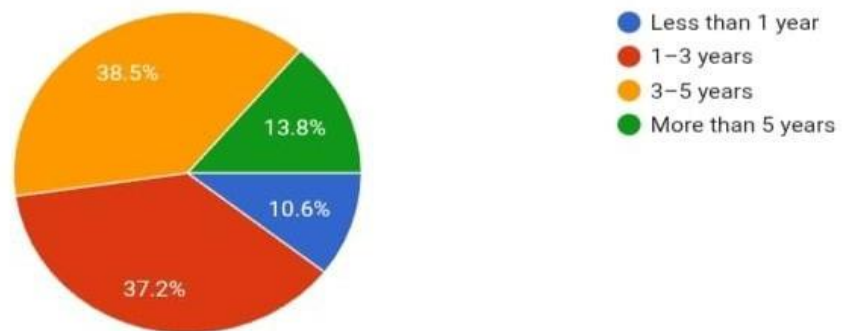
218 responses



The findings reveal a high level of awareness about UPI services, with 79.8% of respondents indicating that they are aware of UPI, while 20.2% are not aware. This demonstrates that UPI has achieved wide recognition among the population, reflecting its strong penetration in India's digital payment ecosystem.

### 5. How long have you been using UPI

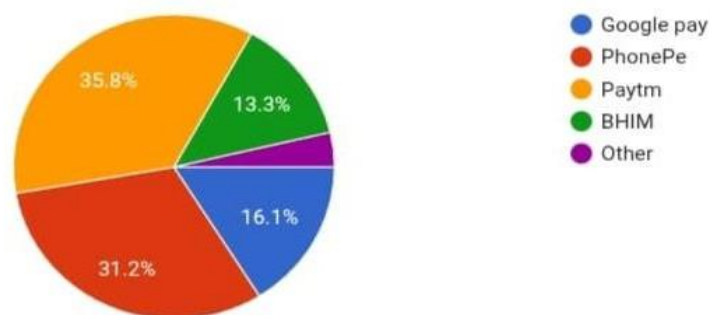
218 responses



The data indicates that most respondents have substantial experience using UPI. A large proportion have been using UPI for 3–5 years (38.5%), followed closely by those using it for 1–3 years (37.2%), reflecting sustained and consistent adoption over time. Only 10.6% of users are relatively new adopters with less than one year of usage, while 13.8% have been using UPI for more than five years.

### 6. which UPI app do you are use most?

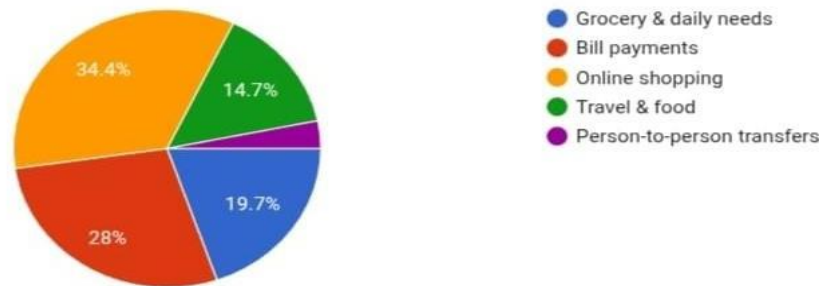
218 responses



The survey identifies Paytm as the most popular UPI app, used by 35.8% of respondents. It is followed closely by PhonePe (31.2%), making these two apps the clear favorites for over two-thirds of the group. While Google Pay and BHIM maintain a respectable presence, they trail significantly behind the market leaders, and "Other" apps remain largely irrelevant to this specific audience.

7. For which transaction do you mostly use UPI?

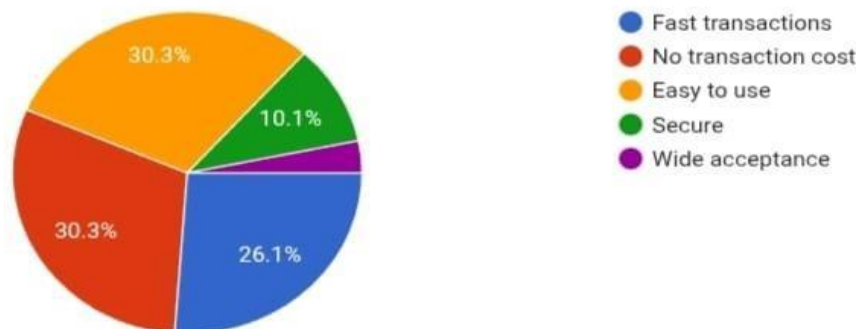
218 responses



The survey proves that UPI has become a cornerstone of daily financial life, primarily driven by Online shopping (34.4%) and Bill payments (28%). This high utility has directly resulted in a significant shift away from physical currency, with 77.9% of respondents confirming a reduction in their cash usage. While 44% of users have experienced a moderate change, a substantial 33.9% have moved toward a near-total cashless lifestyle. Ultimately, the data shows that as UPI expands into daily needs like groceries and travel, it is successfully transitioning the consumer base toward a digital-first economy.

8. What are the main benefit of UPI?

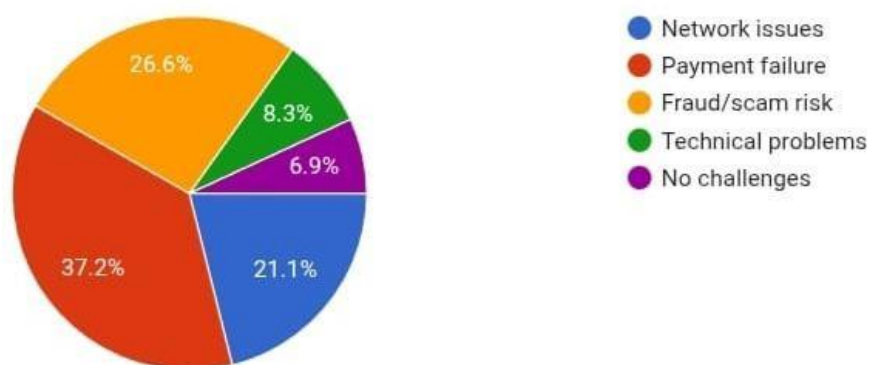
218 responses



The responses highlight that users perceive multiple strong benefits of UPI, with ease of use (30.3%) and no transaction cost (30.3%) emerging as the most significant advantages. This is followed by fast transactions (26.1%), emphasizing UPI's efficiency and time-saving nature. A smaller proportion of respondents identify security (10.1%) as the main benefit, while wide acceptance accounts for a minimal share.

## 9. What challenges have you faced while using UPI?

218 responses



The survey results indicate that users do face notable challenges while using UPI, with payment failures (37.2%) emerging as the most common issue. This is followed by fraud or scam risks (26.6%), highlighting concerns related to security and misuse. Network issues (21.1%) also affect a significant number of users, particularly in areas with poor internet connectivity. In contrast, technical problems (8.3%) are reported by fewer respondents, and only 6.9% state that they face no challenges at all.

### Findings of the Study

The findings of the study highlight several key insights regarding the adoption and usage of the Unified Payments Interface (UPI) in India.

#### 1. High Level of Awareness

The results indicate that a vast majority of respondents are aware of UPI services. This reflects the widespread reach of digital payment platforms and suggests that UPI has successfully penetrated a large segment of the population. Promotional initiatives undertaken by the National Payments Corporation of India and banking institutions have significantly contributed to increasing awareness.

#### 2. Widespread Usage of UPI

The majority of respondents reported actively using UPI for making payments, while only a small proportion indicated non-usage. This finding demonstrates that UPI has emerged as one of the most widely adopted digital payment methods in India.

#### 3. Sustained Long-Term Adoption

A considerable number of respondents have been using UPI for a period ranging from one to five years. This suggests a high level of user trust and continued reliance on the platform for

routine financial transactions.

#### **4. Frequent Usage Patterns**

The study reveals that a large proportion of respondents use UPI on a daily or weekly basis. This indicates that UPI has become an integral part of everyday financial activities, including grocery purchases, online shopping, mobile recharges, and peer-to-peer money transfers.

#### **5. Perceived Ease of Use**

Most respondents agreed that UPI is user-friendly and easy to operate, even for first-time users. The simplicity of the interface and the speed of transactions contribute significantly to its widespread acceptance across different age groups.

### **CONCLUSION**

This study examines the impact of the Unified Payments Interface (UPI) on India's digital payment ecosystem and highlights its transformative role. The findings indicate that UPI has become one of the most preferred digital payment methods due to its convenience, speed, affordability, and ease of use.

The analysis of primary data reveals that a majority of respondents are both aware of and actively engaged in using UPI for financial transactions. The platform is widely adopted across diverse demographic groups, including students, salaried employees, self-employed individuals, and homemakers. The frequency of usage—ranging from daily to weekly—demonstrates that UPI has become an essential component of routine financial activities.

Furthermore, UPI is highly valued for its rapid transaction processing, minimal or negligible transaction costs, user-friendly interface, and secure payment mechanism. These factors have significantly contributed to the shift from cash-based transactions to digital payments. In addition, UPI has played a vital role in promoting financial inclusion by enabling individuals to participate in digital financial activities using basic mobile devices without requiring complex banking procedures.

### **Suggestions and Recommendations**

Based on the findings, the following recommendations are proposed to enhance the effectiveness and adoption of UPI:

#### **1. Improvement of Network Infrastructure**

Network-related issues remain a significant challenge, often leading to transaction failures. It is recommended that the government, banking institutions, and service providers invest in strengthening internet connectivity and server capacity, particularly in rural and semi-urban

areas, to ensure seamless transactions.

## **2. Strengthening Security Measures**

Although UPI is generally perceived as secure, concerns related to fraud and cyber scams persist. Enhancing security features—such as robust authentication mechanisms, real-time fraud detection systems, and efficient grievance redressal processes—is essential. Additionally, users should be regularly educated about safe digital payment practices.

## **3. Promotion of Digital Literacy and Awareness**

Despite high awareness levels, certain population segments, especially in rural areas, lack adequate knowledge and confidence in using UPI. Conducting digital literacy programs, awareness campaigns, and training workshops can help improve user confidence and encourage wider adoption.

## **4. Faster Resolution of Transaction Failures**

Delays in resolving failed transactions and processing refunds negatively impact user trust. Banks and UPI service providers should ensure prompt resolution of such issues and maintain transparency regarding refund timelines.

## **5. Encouraging Merchant Adoption**

The continued growth of UPI depends significantly on merchant participation. Providing incentives such as simplified onboarding processes, reduced compliance requirements, and technical support can encourage small and medium-sized enterprises, particularly in rural markets, to adopt UPI-based payment systems.

## **REFERENCES APA format**

1. Pathak, A. C., Joshi, N., and Kulkarni, V. (2024). An economic analysis of UPI app usage and security perceptions in order to comprehend the acceptance of digital payments. Vidya: The Gujarat University Journal.  
URL: <https://vidyajournal.org/index.php/vidya/article/view/534>
2. Kumar (2024). Digital payment dynamics: Examining UPI usage, adoption, and security issues in Bhagalpur, Bihar. International Journal of Multidisciplinary Research Review.  
<https://www.rjournals.com/index.php/rrijm/article/view/1498>
3. R. Kumawat (2025). a thorough analysis of India's digital payment system. International Journal of Science, Engineering, and Technology Research.  
URL: <https://ijsrset.com/index.php/home/article/view/IJSRSET251241>
4. Yashaswini, M., Shetty, N. K., Kumar, S., and Shashikanth (2024). Cash to digital: Mysore's microbusinesses are using UPI. Journal of Research and Education in

Informatics.

<https://jier.org/index.php/journal/article/view/1745>

5. N. Sahun (2024). Adoption of digital payments in the Indian economy: Role of UPI in automating SMEs. *International Journal of Management and Information Technology*.  
<https://ignited.in/index.php/ijitm/article/view/15924>
6. S. K. Lakshmi (2024). An analysis of consumer behavior and financial inclusion about the growth of digital payments in India. *Journal of International Education and Research*.  
URL: <https://ierj.in/journal/index.php/ierj/article/view/4542>
7. V. Baradwaj (2023). A study on small merchants' adoption and usage of UPI. *The Rising Scholars Research Archive*.  
<https://research-archive.org/index.php/rars/preprint/view/545>
8. Dev, H., Kumar, D., Gupta, R., and Dharmavaram, S. (2024). The impact of UPI on Indian users' spending habits: from cash to cashless. arXiv:  
<https://arxiv.org/abs/2401.09937>
9. Asudeh, A., Dey, P., Hota, A., Kumar, S., Singh, D. D., and Chakraborty, A. (2025). Digital payments should be distributed fairly, with transaction flows balanced for legal compliance. arXiv: <https://arxiv.org/abs/2601.02369>
10. Agrawal, M., Dahiphale, D., Madiraju, N., Lin, J., Karve, R., Modwal, A., & Merchant, A. (2024). An LLM-powered strategy to improve digital payment security and confidence. arXiv: <https://arxiv.org/abs/2410.19845>