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## International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

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# Customer Satisfaction and Usage Patterns of UPI in India: An Empirical Study

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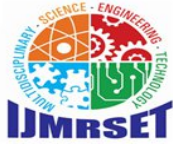
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**ABSTRACT:** The rapid evolution of digital payment systems has significantly transformed the financial landscape in India, positioning the Unified Payments Interface (UPI) as a cornerstone of the country's digital economy. Introduced by the National Payments Corporation of India (NPCI) in 2016, UPI has revolutionized the way financial transactions are conducted by enabling real-time, secure, and seamless fund transfers across banks using mobile platforms. Its widespread adoption has been driven by factors such as increasing smartphone penetration, affordable internet access, and strong policy support through initiatives like Digital India and financial inclusion programs. This study aims to examine customer satisfaction and usage patterns of UPI in India, with a particular focus on identifying the key determinants that influence user behavior and long-term adoption. The research investigates factors such as perceived ease of use, transaction speed, security, reliability, convenience, promotional incentives, and demographic characteristics. By integrating both behavioural and experiential dimensions, the study provides a comprehensive understanding of how users interact with UPI-based payment systems. The research adopts a quantitative methodology based on primary data collected from 100 respondents through a structured questionnaire. A five-point Likert scale was used to measure user perceptions and satisfaction levels. Statistical tools such as correlation analysis, regression analysis, Chi-square test, and ANOVA were employed to analyse the data and test hypotheses derived from theoretical frameworks such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). The findings reveal that UPI has achieved widespread adoption across different demographic groups, with particularly high usage among younger and digitally literate individuals. However, despite high overall satisfaction levels, concerns related to security, fraud risks, transaction failures, and technical glitches continue to affect user trust and experience. Furthermore, the study identifies significant relationships between demographic variables such as age, income, and education, and usage patterns of UPI. These findings highlight the presence of a digital divide, suggesting the need for targeted strategies to improve adoption among less digitally literate populations. The study contributes to existing literature by providing an integrated analysis of both customer satisfaction and usage behaviour in the context of UPI. It offers practical insights for policymakers, financial institutions, and fintech companies to enhance service quality, strengthen cybersecurity measures, and promote inclusive digital payment adoption. The study concludes that while UPI has successfully transformed India's payment ecosystem, continuous improvements in infrastructure, security, and digital literacy are essential for ensuring long-term sustainability and growth.

**KEYWORDS:** UPI, Digital Payments, Customer Satisfaction, Usage Patterns, FinTech, India, Technology Adoption, TAM, UTAUT, Digital Economy

## I. INTRODUCTION

The global financial ecosystem has undergone a significant transformation with the rapid advancement of digital technologies, particularly in the domain of payment systems. In recent years, the shift from cash-based transactions to digital payment methods has accelerated across the world, driven by technological innovation, changing consumer preferences, and the need for efficient and secure financial systems. In India, this transformation has been particularly remarkable, with digital payments emerging as a key driver of economic growth and financial inclusion. The introduction of the Unified Payments Interface (UPI) in 2016 marked a major milestone in India's digital payment journey. Developed by the National Payments Corporation of India (NPCI), UPI is a real-time payment system that enables users to transfer funds instantly between bank accounts using mobile applications. It eliminates the need for traditional banking details by allowing transactions through virtual payment addresses, thereby enhancing convenience and security. UPI offers several advantages over conventional payment systems, including real-time transaction processing, 24/7 availability, interoperability across banks, low transaction costs, and a user-friendly interface. These



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features have contributed to its rapid adoption among individuals, businesses, and financial institutions. UPI supports a wide range of transactions, including peer-to-peer transfers, merchant payments, bill payments, online shopping, and subscription services, making it an integral part of everyday financial activities. The growth of UPI has been further accelerated by supportive government initiatives such as Digital India, demonetization policies, and efforts to promote a cashless economy. Additionally, the proliferation of smartphones and affordable internet services has enabled greater access to digital payment platforms, particularly among urban and semi-urban populations. Moreover, usage patterns of UPI vary across different demographic segments. Younger users, who are more technologically adept, tend to adopt digital payment systems more readily, while older individuals may face challenges related to digital literacy and trust. Similarly, income level, education, and geographic location play an important role in shaping usage behaviour. In this context, the present study aims to analyze customer satisfaction and usage patterns of UPI in India. By examining both the behavioural and experiential aspects of UPI usage, the study seeks to identify key factors influencing adoption, satisfaction, and continued usage. The findings are expected to provide valuable insights for improving digital payment systems and enhancing user experience in the evolving financial landscape.

### II. REVIEW OF LITERATURE

The existing body of literature on digital payment systems in India highlights the rapid growth and widespread acceptance of UPI as a preferred mode of transaction. Several studies emphasize that the simplicity and user-friendly nature of UPI applications have been key drivers of its adoption. Research indicates that perceived ease of use and convenience significantly influence user behaviour, especially among younger and digitally literate populations. Studies also reveal that UPI has contributed to financial inclusion by enabling easy access to banking services for individuals in remote and underserved areas. However, literature also highlights certain challenges. Security concerns, including fraud, phishing attacks, and data privacy issues, remain significant barriers to complete trust in digital payment systems. Additionally, technical issues such as transaction failures and delayed refunds can negatively impact customer satisfaction. Another important insight from previous studies is that while cashback offers and promotional incentives may encourage initial adoption, long-term usage depends primarily on service quality, reliability, and trust. Overall, the literature suggests that UPI adoption is high, but sustained usage is closely linked to customer satisfaction and experience.

### III. IDENTIFICATION OF RESEARCH GAPS

Although several studies have explored digital payment systems and UPI adoption, certain gaps remain in the existing literature. Firstly, most studies focus primarily on adoption trends and transaction growth, without providing a comprehensive analysis of customer satisfaction alongside usage patterns. Secondly, there is limited empirical research examining how demographic factors such as age, income, and education influence both satisfaction and usage behaviour simultaneously. Furthermore, there is insufficient focus on post-adoption behaviour, particularly in understanding whether users continue to use UPI due to genuine satisfaction or external incentives such as cashback offers. Additionally, while security concerns are frequently mentioned, there is a lack of systematic analysis measuring their direct impact on user trust and continued usage. This study aims to address these gaps by providing an integrated analysis of customer satisfaction, usage patterns, and influencing factors within a single research framework.

### IV. RESEARCH OBJECTIVES

The primary objective of this study is to analyse customer satisfaction and usage patterns of UPI payments in India in a comprehensive manner.

The specific objectives include:

- To evaluate the level of customer satisfaction by examining factors such as ease of use, transaction speed, security, and reliability
- To analyse usage patterns in terms of frequency and purpose of transactions
- To examine the influence of demographic variables such as age, income, and education on usage behaviour
- To identify key factors influencing continued usage and customer loyalty
- To assess challenges faced by users, including technical issues and security concerns



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### V. FRAMING OF THE RESEARCH HYPOTHESES

#### Hypothesis 1: Ease of Use and Satisfaction

H<sub>0</sub>: There is no significant relationship between ease of use and customer satisfaction

H<sub>1</sub>: Ease of use has a significant positive impact on customer satisfaction

#### Hypothesis 2: Security and Usage

H<sub>0</sub>: Security does not influence usage behaviour

H<sub>1</sub>: Security significantly influences usage behaviour

#### Hypothesis 3: Demographics and Usage

H<sub>0</sub>: There is no association between demographic variables and usage patterns

H<sub>1</sub>: Demographic variables significantly influence usage patterns

#### Hypothesis 4: Satisfaction and Loyalty

H<sub>0</sub>: Customer satisfaction does not influence continued usage

H<sub>1</sub>: Customer satisfaction positively influences continued usage

### RESEARCH DESIGN

The study adopts a descriptive research design, which is appropriate for analysing and describing user behaviour, satisfaction levels, and usage patterns without manipulating any variables. A quantitative research approach is used to ensure objective measurement and statistical analysis of data. The study follows a deductive approach, where hypotheses are formulated based on existing theories and tested using empirical data. The research is conducted using a survey method, where data is collected through structured questionnaires. A cross-sectional time horizon is adopted, meaning that data is collected at a single point in time to capture current trends and perceptions.

### VI. METHODS FOR DATA COLLECTION AND VARIABLES OF THE STUDY

#### Method of Data Collection

Primary data is collected through a structured questionnaire consisting of close-ended and Likert-scale questions to measure user perceptions and satisfaction levels. This allows for standardized responses and facilitates statistical analysis. Secondary data is collected from academic journals, RBI reports, industry publications, and online sources to support the theoretical framework and provide background information.

#### Variables Under Study

##### Dependent Variables

- Customer Satisfaction (measured through user ratings and perceptions)
- Usage Behaviour (frequency and intention to continue usage)

##### Independent Variables

- Ease of Use
- Security
- Reliability
- Convenience
- Promotional Incentives

##### Demographic Variables

- Age
- Gender
- Income
- Education

### TECHNIQUES FOR DATA ANALYSIS

The study uses a combination of descriptive and inferential statistical techniques. Descriptive statistics such as percentages and averages are used to summarize the data. Correlation analysis is used to identify relationships between variables, while regression analysis determines the impact of independent variables on customer satisfaction. Chi-square tests are used to examine associations between demographic variables and usage patterns, and ANOVA is applied to compare differences in satisfaction levels across different groups.

### DATA ANALYSIS



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The data analysis for this study was conducted using both descriptive and inferential statistical techniques to examine customer satisfaction and usage patterns of UPI in India. Primary data collected from 100 respondents through structured questionnaires was systematically analyzed to derive meaningful insights regarding user behaviour, preferences, and influencing factors. Initially, descriptive statistics such as percentages, averages, and frequency distributions were used to summarize the demographic profile and usage characteristics of respondents. The analysis revealed that a majority of users belong to the younger age group (18–25 years), indicating higher adoption among digitally literate individuals. Most respondents reported frequent usage of UPI, with daily transactions being common, highlighting its integration into routine financial activities. UPI is widely used for various purposes such as peer-to-peer transfers, merchant payments, and bill payments, demonstrating its versatility and convenience. To understand the relationship between variables, correlation analysis was performed. The results indicated a strong positive correlation between ease of use and customer satisfaction, suggesting that users prefer platforms that are simple and user-friendly. Similarly, convenience and transaction speed were also positively associated with satisfaction levels. However, security concerns showed a moderate negative relationship with usage behaviour, implying that issues related to fraud risks and data privacy can reduce user trust. Further, regression analysis was employed to determine the impact of independent variables on customer satisfaction. The findings revealed that ease of use is the most significant predictor of satisfaction, followed by convenience and reliability. Transaction speed also contributes positively, though to a lesser extent. These results confirm that functional efficiency and user experience are critical drivers of satisfaction in digital payment systems. The results indicated a significant relationship between age, income, and usage frequency. Additionally, ANOVA was conducted to compare satisfaction levels across different demographic groups. The analysis showed statistically significant differences in satisfaction based on age and education level, suggesting that user perception varies across segments. Educated users tend to report higher satisfaction due to better understanding and familiarity with digital platforms. Despite high overall satisfaction levels, the analysis also highlighted certain challenges. Overall, the data analysis indicates that while UPI has achieved widespread adoption and high satisfaction levels, continuous improvements in security, system reliability, and user awareness are essential. The results also emphasize that customer satisfaction plays a crucial role in influencing continued usage and long-term adoption of UPI services.

### RESEARCH OUTCOME AND FINDINGS

The study reveals several important findings regarding UPI usage and customer satisfaction.

Firstly, UPI adoption is highest among younger users, particularly those in the 18–25 age group, indicating that digital literacy plays a key role in adoption. Secondly, the majority of users engage in daily transactions, demonstrating that UPI has become an integral part of routine financial activities. Ease of use emerges as the most significant factor influencing customer satisfaction, supported by both correlation and regression analysis. Users prefer UPI due to its simplicity and convenience. While overall satisfaction levels are high, security concerns remain a critical issue affecting user trust. Additionally, transaction failures and technical glitches negatively impact the user experience. The study also finds that demographic factors such as age and income significantly influence usage patterns. UPI is used for a wide range of purposes, including peer-to-peer transfers, merchant payments, and bill payments, highlighting its versatility. Finally, customer satisfaction is found to have a strong positive impact on continued usage, indicating that improving user experience is essential for long-term adoption.

### SCOPE OF THE STUDY

The scope of this study is designed to provide a comprehensive understanding of customer satisfaction and usage patterns of Unified Payments Interface (UPI) in India. It focuses on both behavioural and perceptual aspects of users to evaluate the effectiveness and acceptance of UPI as a digital payment system.

#### 1. Geographical Scope:

The study is confined to users within India, where UPI has gained widespread adoption across urban, semi-urban, and rural regions. It captures diverse user experiences influenced by varying levels of digital literacy and access to financial services.

#### 2. Demographic Scope:

The research considers users from different demographic backgrounds, including variations in age, gender, income levels, and educational qualifications. This allows for a deeper understanding of how different segments of the population perceive and utilize UPI services.



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### 3. Functional Scope:

The study examines multiple dimensions of UPI usage, including:

- Peer-to-peer (P2P) transactions
- Merchant payments (online and offline)
- Bill payments and recharges
- Subscription-based digital payments

It also evaluates key factors influencing user experience such as ease of use, transaction speed, security, reliability, and convenience.

### 4. Analytical Scope:

The research employs quantitative methods to analyze data collected through structured questionnaires. Statistical tools such as correlation, regression, Chi-square, and ANOVA are used to identify relationships and test hypotheses related to customer satisfaction and usage behaviour.

### 5. Temporal Scope:

The study follows a cross-sectional design, capturing user perceptions and behaviours at a specific point in time. It reflects current trends in UPI adoption rather than long-term behavioural changes.

### 6. Conceptual Scope:

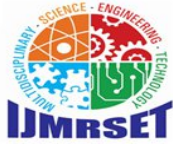
The study is limited to examining customer satisfaction and usage patterns and does not include technical or backend analysis of UPI infrastructure. It also does not compare UPI extensively with other digital payment systems such as wallets or credit cards. Overall, the study provides valuable insights into how UPI is perceived and used by customers, helping to understand its strengths, challenges, and areas for improvement within the Indian digital payment ecosystem.

## VII. CONCLUSION

The findings of this study clearly indicate that the Unified Payments Interface (UPI) has transformed the digital payment landscape in India, emerging as one of the most efficient, accessible, and widely adopted financial technologies. Its ability to provide seamless, real-time transactions with minimal effort has made it an integral part of everyday financial activities for millions of users. One of the most significant conclusions of this research is that **ease of use and convenience are the primary drivers of customer satisfaction**, making UPI highly attractive across various user groups. The platform's simplicity, combined with its interoperability and 24/7 availability, has played a crucial role in accelerating its adoption. At the same time, the study highlights that **customer satisfaction is not solely dependent on functionality**, but also on trust and reliability. Another important insight is the influence of demographic factors on usage behaviour. Younger users tend to adopt and utilize UPI more frequently due to higher digital literacy, while older users may face barriers related to technology adoption. This suggests the need for greater awareness programs and user education initiatives to bridge the digital divide. Furthermore, the study confirms that **customer satisfaction directly influences continued usage and loyalty**, emphasizing the importance of delivering a consistent and positive user experience. While promotional incentives such as cashback may drive initial adoption, long-term engagement depends on service quality and reliability. In a broader context, UPI has significantly contributed to India's transition toward a cashless economy by promoting financial inclusion and reducing dependency on physical cash. It has empowered individuals and businesses by providing a fast, secure, and cost-effective payment solution. In conclusion, while UPI has achieved remarkable success, its future growth depends on continuous innovation, improved security frameworks, and enhanced user experience. By addressing existing challenges and focusing on customer-centric improvements, UPI has the potential to not only strengthen India's digital economy but also serve as a global benchmark for real-time payment systems.

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