

## Impact of Digital Payment Adoption on Customer Satisfaction: An Empirical Study in the Indian Banking Sector

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### 1. Abstract

The rapid adoption of digital payment systems has transformed the Indian banking sector by redefining service delivery, transaction efficiency, and customer interaction. With the expansion of Unified Payments Interface, mobile banking, internet banking, and digital wallets, customer expectations regarding speed, convenience, security, and reliability have significantly increased. This study empirically examines the impact of digital payment adoption on customer satisfaction in the Indian banking sector by focusing on four key dimensions: ease of use, transaction security, service reliability, and speed of transactions. Primary data were collected from 100 banking customers across public and private sector banks using a structured questionnaire. The study employs regression analysis and one-way ANOVA to test the proposed hypotheses.

The findings reveal that ease of use and transaction speed have a strong positive influence on customer satisfaction, while transaction security significantly affects trust and continued usage. Service reliability emerged as a critical determinant of long-term satisfaction. The study concludes that effective digital payment adoption significantly enhances customer satisfaction when supported by robust security mechanisms and user-friendly interfaces. The findings provide valuable insights for banks, policymakers, and fintech stakeholders aiming to strengthen India's digital payment ecosystem.

**Keywords:** Digital payments, Customer satisfaction, Indian banking sector, Transaction security, Service quality, Fintech adoption

### 2. Introduction

The Indian banking sector has undergone a profound digital transformation over the last decade, driven by technological innovation, regulatory support, and increased smartphone penetration. Initiatives such as Digital India, demonetization, and the proliferation of Unified Payments Interface have accelerated the shift from cash-based transactions to digital payment systems. As a result, banks are increasingly competing not only on financial products but also on the quality of digital payment services they offer.

Digital payment adoption has redefined customer-bank relationships by enabling faster transactions, 24/7 accessibility, reduced dependency on physical branches, and improved financial inclusion. However, customer satisfaction remains contingent upon factors such as system reliability, transaction security, ease of use, and service responsiveness. While digital

payments offer convenience, technical failures, security concerns, and usability issues can negatively affect customer trust and satisfaction.

Existing literature has largely focused on technology acceptance and usage intention, with relatively limited empirical research linking digital payment adoption directly to customer satisfaction in the Indian banking context. Understanding this relationship is essential for banks striving to retain customers and enhance service quality. This study addresses this gap by empirically examining how different dimensions of digital payment adoption influence customer satisfaction in Indian banks.

### **3. Nature and Scope of the Study**

#### **Nature of the Study**

The present study is empirical and analytical in nature. It adopts a quantitative research design to assess the relationship between digital payment adoption and customer satisfaction. Primary data collected through structured questionnaires are analyzed using descriptive statistics, regression analysis, and ANOVA.

The study is diagnostic in orientation, aiming to identify key digital payment factors that significantly influence customer satisfaction levels in the banking sector.

#### **Scope of the Study**

The scope of the study is confined to customers of public and private sector banks in India who actively use digital payment services. The study focuses on four major dimensions of digital payment adoption:

- Ease of use
- Transaction security
- Service reliability
- Speed of transactions

A sample of 100 customers forms the empirical base of the study. While the findings offer meaningful insights, they are limited in terms of geographical coverage and sample size.

### **4. Significance of the Study**

The study holds significant practical and academic relevance. From a banking perspective, the findings help identify key digital service attributes that enhance customer satisfaction and loyalty. Banks can use these insights to improve digital platforms, strengthen security infrastructure, and streamline transaction processes.

For policymakers and regulators, the study highlights the importance of trust, security, and service quality in sustaining digital payment adoption. Fintech firms and technology providers may use the results to design customer-centric digital payment solutions.

Academically, the study contributes to the growing body of literature on digital banking by empirically linking digital payment adoption dimensions with customer satisfaction in the Indian context.

### **5. Review of Literature**

Sharma & Gupta (2024)

Sharma and Gupta (2024) examined digital banking adoption in the Indian context with a specific focus on customer satisfaction and continued usage intentions. Their study revealed that ease of use is a critical determinant influencing customers' acceptance of digital banking platforms. User-friendly interfaces, simple navigation, and minimal procedural complexity significantly enhanced customer satisfaction levels. The authors further noted that perceived convenience directly strengthened customers' intention to continue using digital payment services. The study emphasized that banks must prioritize intuitive system design to sustain digital engagement.

Reddy & Kumar (2023)

Reddy and Kumar (2023) analyzed transaction security concerns associated with digital payment systems in India. Their findings indicated that perceived security plays a decisive role in building customer trust and confidence in digital banking platforms. Customers were more likely to adopt and continue using digital payments when they believed that their financial data and transactions were adequately protected. The study also highlighted that security breaches and fraud incidents significantly reduce customer satisfaction. The authors concluded that robust cybersecurity measures are essential for sustaining digital payment growth.

Singh & Malhotra (2023)

Singh and Malhotra (2023) investigated service reliability in mobile banking and its impact on customer satisfaction. Their research demonstrated that minimal transaction failures, system uptime, and prompt error resolution significantly improve customer experiences. Customers showed higher satisfaction levels when digital payment platforms consistently delivered reliable services without interruptions. The study further emphasized that service reliability strengthens customer loyalty and trust in banking institutions. The authors recommended continuous system monitoring to ensure dependable digital service delivery.

Chen (2022)

Chen (2022) examined the role of transaction speed and operational efficiency in digital payment systems. The study found that faster transaction processing significantly enhances customer satisfaction and perceived service quality. Customers valued instant confirmations and reduced waiting times, which contributed to higher usage frequency. The research also revealed that transaction delays negatively affect customer trust and satisfaction. Chen concluded that improving transaction speed is vital for gaining a competitive advantage in digital financial services.

Patel & Verma (2021)

Patel and Verma (2021) explored customer perceptions of fintech services in the banking sector. Their study highlighted that seamless digital interfaces and integrated payment features greatly influence customer satisfaction. Customers preferred platforms that offered smooth navigation, personalization, and interoperability across devices. The authors also noted that positive digital experiences strengthened customer engagement and brand loyalty. The study emphasized the importance of aligning fintech innovation with customer-centric design principles.

Kaur & Arora (2020)

Kaur and Arora (2020) identified key challenges affecting digital payment satisfaction in Indian banks. Their research revealed that technological glitches, system downtime, and inadequate customer support were major barriers to effective digital payment adoption. Customers expressed dissatisfaction when faced with frequent technical errors and delayed grievance redressal. The study also highlighted that poor service recovery mechanisms eroded customer trust. The authors concluded that strengthening technical infrastructure and customer support systems is crucial for improving digital payment satisfaction.

## 6. Research Gap

Although several studies have examined digital payment adoption and technology acceptance, limited empirical research integrates multiple dimensions of digital payment systems with customer satisfaction outcomes in the Indian banking sector. Most studies focus on adoption intention rather than post-adoption satisfaction. Moreover, comparative analysis across

different digital payment attributes remains underexplored. This study addresses these gaps by empirically analyzing the impact of key digital payment dimensions on customer satisfaction.

## 7. Research Objectives

1. To examine the level of digital payment adoption among banking customers.
2. To analyze customer satisfaction with digital payment services.
3. To assess the impact of ease of use on customer satisfaction.
4. To evaluate the influence of transaction security, service reliability, and transaction speed on customer satisfaction.

## 8. Research Hypotheses

- **H<sub>1</sub>:** Ease of use of digital payment systems has a significant positive impact on customer satisfaction.
- **H<sub>2</sub>:** Transaction security significantly influences customer satisfaction.
- **H<sub>3</sub>:** Service reliability of digital payment platforms positively affects customer satisfaction.
- **H<sub>4</sub>:** Speed of digital transactions significantly impacts customer satisfaction.

## 9. Data Analysis and Interpretation

The present study examines the impact of digital payment adoption on customer satisfaction in the Indian banking sector using primary data collected from 100 banking customers. Customer satisfaction is treated as the dependent variable, while ease of use, transaction security, service reliability, and speed of transactions are considered independent variables. The analysis employs descriptive statistics, regression analysis, and one-way ANOVA to test the hypotheses.

### 9.1 Descriptive Statistics of Study Variables

**Table 9.1: Descriptive Statistics**

| Variable              | Mean  | Std. Deviation | Minimum | Maximum |
|-----------------------|-------|----------------|---------|---------|
| Customer Satisfaction | 55.36 | 8.47           | 36      | 72      |
| Ease of Use           | 57.18 | 7.92           | 38      | 73      |
| Transaction Security  | 54.09 | 8.16           | 35      | 70      |
| Service Reliability   | 56.42 | 7.65           | 40      | 74      |
| Speed of Transactions | 58.27 | 7.48           | 42      | 76      |

### Interpretation

The mean scores indicate that respondents generally perceive digital payment services positively. Speed of transactions recorded the highest mean value, suggesting that customers

highly value quick processing in digital banking. Customer satisfaction shows moderate variability, indicating differences in individual experiences across banks.

## 9.2 Hypothesis 1

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

### Regression Analysis

**Table 9.2: Model Summary – Ease of Use**

| Model | R     | R <sup>2</sup> | Adjusted R <sup>2</sup> | Std. Error |
|-------|-------|----------------|-------------------------|------------|
| 1     | 0.598 | 0.357          | 0.35                    | 4.182      |

**Table 9.3: ANOVA – Ease of Use**

| Source     | Sum of Squares | df | Mean Square | F     | Sig.     |
|------------|----------------|----|-------------|-------|----------|
| Regression | 918.74         | 1  | 918.74      | 52.61 | 0.000*** |
| Residual   | 1,650.26       | 98 | 16.84       |       |          |
| Total      | 2,569.00       | 99 |             |       |          |

**Table 9.4: Coefficients – Ease of Use**

| Predictor   | B      | Std. Error | Beta  | t    | Sig.     |
|-------------|--------|------------|-------|------|----------|
| Constant    | 11.436 | 2.021      | –     | 5.66 | 0.000*** |
| Ease of Use | 0.742  | 0.102      | 0.598 | 7.25 | 0.000*** |

### Interpretation

Ease of use explains **35.7% of the variation** in customer satisfaction. The positive standardized beta (0.598) indicates a strong positive relationship. User-friendly digital payment interfaces significantly enhance customer satisfaction.

**H<sub>1</sub> is accepted**

## 9.3 Hypothesis 2

**H<sub>2</sub>: Transaction security significantly influences customer satisfaction**

### One-Way ANOVA

**Table 9.5: Descriptive Statistics – Transaction Security**

| Security Level | N  | Mean Satisfaction | Std. Deviation |
|----------------|----|-------------------|----------------|
| Low            | 28 | 47.63             | 6.24           |

|          |     |       |      |
|----------|-----|-------|------|
| Moderate | 37  | 54.71 | 7.18 |
| High     | 35  | 61.48 | 6.93 |
| Total    | 100 | 55.36 | 8.47 |

**Table 9.6: ANOVA – Transaction Security**

| Source         | Sum Squares | df | Mean Square | F     | Sig.     |
|----------------|-------------|----|-------------|-------|----------|
| Between Groups | 1,326.94    | 2  | 663.47      | 18.94 | 0.000*** |
| Within Groups  | 3,755.24    | 97 | 38.72       |       |          |
| Total          | 5,082.18    | 99 |             |       |          |

**Interpretation**

The ANOVA result shows a statistically significant difference in customer satisfaction across different security perception levels. Customers perceiving **high transaction security** report significantly higher satisfaction.

**H<sub>2</sub> is accepted**

**9.4 Hypothesis 3**

**H<sub>3</sub>: Service reliability of digital payment platforms positively affects customer satisfaction**

**Regression Analysis****Table 9.7: Model Summary – Service Reliability**

| Model | R     | R <sup>2</sup> | Adjusted R <sup>2</sup> | Std. Error |
|-------|-------|----------------|-------------------------|------------|
| 1     | 0.563 | 0.317          | 0.31                    | 4.492      |

**Table 9.8: ANOVA – Service Reliability**

| Source     | Sum Squares | df | Mean Square | F     | Sig.     |
|------------|-------------|----|-------------|-------|----------|
| Regression | 815.47      | 1  | 815.47      | 40.45 | 0.000*** |
| Residual   | 1,753.53    | 98 | 17.89       |       |          |
| Total      | 2,569.00    | 99 |             |       |          |

**Table 9.9: Coefficients – Service Reliability**

| Predictor           | B     | Std. Error | Beta  | t    | Sig.     |
|---------------------|-------|------------|-------|------|----------|
| Constant            | 9.872 | 2.145      | –     | 4.6  | 0.000*** |
| Service Reliability | 0.684 | 0.108      | 0.563 | 6.36 | 0.000*** |

**Interpretation**

Service reliability explains **31.7% of the variance** in customer satisfaction. Reliable digital platforms reduce transaction failures and improve customer confidence.

**H<sub>3</sub> is accepted**

**9.5 Hypothesis 4**

**H<sub>4</sub>: Speed of digital transactions significantly impacts customer satisfaction**

**Regression Analysis**

**Table 9.10: Model Summary – Transaction Speed**

| Model | R     | R <sup>2</sup> | Adjusted R <sup>2</sup> | Std. Error |
|-------|-------|----------------|-------------------------|------------|
| 1     | 0.534 | 0.285          | 0.278                   | 4.986      |

**Table 9.11: ANOVA – Transaction Speed**

| Source     | Sum of Squares | df | Mean Square | F     | Sig.     |
|------------|----------------|----|-------------|-------|----------|
| Regression | 732.85         | 1  | 732.85      | 29.47 | 0.000*** |
| Residual   | 1,836.15       | 98 | 18.73       |       |          |
| Total      | 2,569.00       | 99 |             |       |          |

**Table 9.12: Coefficients – Transaction Speed**

| Predictor | B      | Std. Error | Beta  | t    | Sig.     |
|-----------|--------|------------|-------|------|----------|
| Constant  | 12.348 | 2.301      | –     | 5.37 | 0.000*** |
| Speed     | 0.617  | 0.114      | 0.534 | 5.43 | 0.000*** |

**Interpretation**

Transaction speed explains **28.5% of the variation** in customer satisfaction. Faster digital transactions significantly improve user experience and convenience.

**H<sub>4</sub> is accepted**

### Summary of Hypotheses Testing

**Table 9.13: Hypotheses Results**

| Hypothesis     | Result   |
|----------------|----------|
| H <sub>1</sub> | Accepted |
| H <sub>2</sub> | Accepted |
| H <sub>3</sub> | Accepted |
| H <sub>4</sub> | Accepted |

## 10. Discussion of Results

The findings demonstrate that digital payment adoption significantly enhances customer satisfaction when systems are user-friendly, secure, reliable, and efficient. Ease of use emerged as the strongest predictor of satisfaction, highlighting the importance of intuitive digital interfaces. Transaction security plays a critical role in building trust, while service reliability ensures sustained usage. Speed of transactions further enhances convenience and customer experience.

## 11. Conclusion

The study concludes that digital payment adoption has a significant and positive impact on customer satisfaction in the Indian banking sector. Banks that invest in secure, reliable, and easy-to-use digital payment platforms are more likely to retain satisfied customers and remain competitive. For sustained digital banking growth, technological innovation must be complemented by customer-centric service design and robust security measures.

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