
An Empirical Study on Determinants of Digital Payment Adoption and Its Impact on Consumer Behaviour in India

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Abstract

Digital payment systems have expanded rapidly in India, transforming the way individuals carry out financial transactions in their daily lives. The widespread adoption of technologies such as UPI, mobile wallets, and online banking has encouraged a shift from traditional cash-based methods to more efficient digital alternatives. This study aims to identify the key determinants influencing digital payment adoption and to examine their impact on consumer behaviour. Primary data were collected from 250 respondents using a structured questionnaire based on a five-point Likert scale. Statistical techniques, including descriptive statistics, reliability analysis, factor analysis, and regression analysis, were employed to analyse the data. The findings indicate that convenience is the most influential factor driving adoption, followed by trust and accessibility. Promotional benefits also contribute positively to usage behaviour. However, perceived security does not demonstrate a statistically significant impact, suggesting that users may already assume a baseline level of safety in digital transactions. Overall, the study highlights the increasing importance of digital payment systems in shaping consumer behaviour and emphasizes the need to enhance user experience and accessibility to support wider adoption.

Keywords: Digital payment adoption, consumer behaviour, determinants, UPI, fintech, India

1. Introduction

In recent years, India has witnessed a significant increase in the adoption of digital payment systems, leading to notable changes in the way financial transactions are carried out. Technological advancements such as Unified Payments Interface (UPI), mobile wallets, and internet banking have provided users with efficient and flexible payment options. In addition, policy initiatives promoting digital transactions have further accelerated this transition.

Digital payment systems simplify financial activities by enabling faster transactions and improving accessibility. Users are able to perform payments conveniently without relying on physical cash, which has contributed to the integration of digital payments into everyday activities such as shopping, bill payments, and fund transfers. Consequently, consumer behaviour has evolved, with individuals increasingly preferring digital modes of payment.

Despite these advantages, the adoption of digital payments is influenced by multiple factors. Elements such as ease of use, trust, accessibility, and promotional incentives play a critical role in shaping user decisions. At the same time, concerns related to privacy and security continue to affect adoption among certain groups.

Understanding these determinants is essential for analysing how digital payment systems influence consumer behaviour. Therefore, this study focuses on examining the key factors driving adoption and their impact on consumer behaviour in the Indian context.

2. Literature Review

Digital payment systems have become a significant aspect of financial innovation, particularly in emerging economies where technological advancements are rapidly transforming transaction practices. With increasing internet penetration and smartphone usage, consumers are gradually shifting from traditional cash-based transactions to digital

payment methods, thereby altering their financial behaviour and decision-making processes.

Existing literature identifies multiple factors influencing the adoption of digital payment systems. *Liébana-Cabanillas et al. (2020)* highlight that mobile payment technologies enhance transaction efficiency and improve user experience through ease of use and perceived usefulness. Similarly, *Dwivedi et al. (2021)* emphasize the importance of technological infrastructure, system quality, and social influence in shaping adoption behaviour.

Convenience is consistently recognised as a key determinant of adoption. *Pal et al. (2021)* note that consumers prefer payment systems that minimize effort and transaction time, thereby increasing usage frequency. Supporting this view, *Chawla and Joshi (2020)* observe that ease of use and convenience significantly influence mobile wallet adoption and user engagement.

Compatibility with users' lifestyles also plays an important role. *Chen et al. (2021)* argue that digital payment systems are more likely to be adopted when they align with users' daily routines and technological familiarity. This alignment enhances user comfort and reduces resistance to new technologies.

Trust is another critical factor influencing consumer behaviour. *Alalwan et al. (2020)* suggest that perceived reliability and transparency of digital payment platforms encourage adoption. Similarly, *Humbani and Wiese (2020)* find that trust developed through positive user experiences leads to continued usage of digital payment systems.

Perceived security has also been widely discussed in the literature. *Zhou (2020)* indicates that concerns related to privacy and fraud can negatively affect adoption, while the presence of secure systems enhances user confidence. However, as digital payment systems mature, users may increasingly assume a baseline level of security.

Financial literacy is an additional determinant affecting adoption behaviour. *Raza et al. (2021)* explain that individuals with higher financial knowledge are more likely to adopt fintech services,

as they better understand the associated benefits and risks.

Promotional incentives have also been found to influence consumer behaviour. *Aji et al. (2020)* highlight that cashback offers, discounts, and rewards act as motivating factors that encourage adoption, particularly among new users.

Several studies also emphasise the broader technological and behavioural context of adoption. *Baabdullah et al. (2021)* underline the role of perceived benefits and technological readiness, while *Shaikh et al. (2020)* identify trust and technological preparedness as critical factors across different regions. *Apanasevic (2021)* further highlights that user experience and system integration significantly influence adoption in retail settings.

Behavioural theories have also been applied to understand digital payment usage. *Sivathanu (2021)* suggests that attitudes, subjective norms, and perceived behavioural control significantly shape user intention towards digital payments.

In addition to adoption determinants, digital payment systems have been found to influence consumer behaviour. *Soman (2020)* explains that digital payments reduce the psychological "pain of paying," leading to increased spending behaviour. Similarly, Yan and Yang (2022) observe that the ease and speed of digital transactions can encourage impulsive purchasing decisions.

Demographic factors have also been examined in several studies. *Singh et al. (2020)* find that younger and more educated individuals are more likely to adopt digital payment systems. However, *Malik et al. (2021)* emphasize that digital literacy and access to technology are equally important in determining adoption levels.

Furthermore, digital payment systems play a crucial role in promoting financial inclusion. *Kumar et al. (2020)* highlight that digital platforms provide easier access to financial services, particularly for underserved populations. This is further supported by *Kumar et al. (2021)*, who note that digital payments contribute to inclusive economic growth by improving accessibility.

Hassan et al. (2022) also emphasize that fintech development has significantly transformed consumer financial behaviour by enhancing accessibility and efficiency in financial services.

Overall, the literature indicates that digital payment adoption is influenced by a combination of technological, behavioural, and contextual factors. While variables such as convenience, trust, accessibility, and promotional incentives positively influence adoption, factors such as security concerns and financial literacy may affect user perceptions. Despite extensive research, there remains a need for integrated empirical studies that examine both the determinants of adoption and their impact on consumer behaviour within a unified framework.

3. Objectives of the Study

- To identify the key determinants influencing digital payment adoption
- To examine the impact of convenience, security, trust, accessibility, and promotional factors on consumer behaviour
- To analyse the relationship between digital payment usage and consumer behaviour
- To evaluate whether demographic factors influence digital payment behaviour

4. Hypothesis Development

The hypotheses proposed in this study are derived from existing literature on digital payment adoption and consumer behaviour. The study examines key determinants that influence consumer behaviour in the context of digital payment systems, including convenience, perceived security, trust, accessibility, and promotional benefits. Each hypothesis is formulated based on theoretical insights and empirical evidence discussed in prior research.

Convenience

Convenience reflects the extent to which digital payment systems enable users to complete transactions quickly and effortlessly. Technologies such as UPI and mobile wallets simplify the payment process by reducing transaction time and eliminating the need for physical cash. Systems that are easy to use and efficient are more likely to enhance user satisfaction and encourage repeated

usage. As a result, convenience is expected to positively influence consumer behaviour.

H1: Convenience has a significant positive impact on consumer behaviour.

Perceived Security

Perceived security refers to the degree to which users believe that digital payment systems are safe and capable of protecting their financial and personal information. Concerns related to fraud, privacy, and data breaches can affect user adoption. When users perceive digital payment platforms as secure and reliable, their confidence in using such systems increases, leading to higher acceptance and usage.

H2: Perceived security has a significant positive impact on consumer behaviour.

Trust

Trust represents the level of confidence consumers place in digital payment platforms and service providers. It reflects perceptions of reliability, transparency, and credibility. Higher levels of trust reduce perceived risk and uncertainty, thereby encouraging users to adopt and continue using digital payment systems. Consequently, trust is expected to play a significant role in shaping consumer behaviour.

H3: Trust has a significant positive impact on consumer behaviour.

Accessibility

Accessibility refers to the availability and ease with which users can access digital payment systems across different platforms and locations. The widespread penetration of smartphones and internet connectivity has increased the accessibility of digital payments. Systems that can be used anytime and anywhere enhance user convenience and promote adoption.

H4: Accessibility has a significant positive impact on consumer behaviour.

Promotional Benefits

Promotional benefits include incentives such as cashback offers, discounts, and reward programs provided by digital payment platforms. These

incentives act as motivating factors that encourage both initial adoption and continued usage. Additionally, promotional strategies can influence consumer spending patterns and increase transaction frequency.

H5: Promotional benefits have a significant positive impact on consumer behaviour.

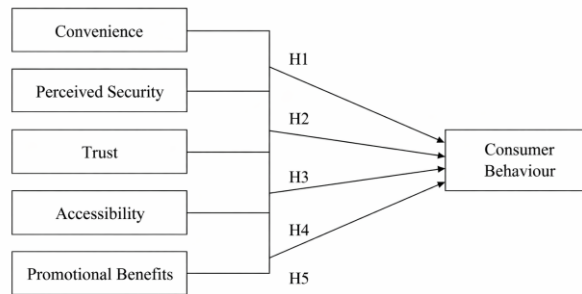


Figure 1: Conceptual Model of the Study

The conceptual framework illustrates the relationship between the independent variables—convenience, perceived security, trust, accessibility, and promotional benefits—and the dependent variable, consumer behaviour. Based on existing literature, the framework assumes that these determinants have a direct influence on consumer behaviour in the context of digital payment systems and form the basis for hypothesis testing using regression analysis.

5. Research Methodology

This study adopts a quantitative research approach to examine the factors influencing digital payment adoption and their impact on consumer behaviour. The research is both descriptive and analytical in nature, as it aims to describe consumer usage patterns while also analysing the relationships between key influencing variables.

A cross-sectional research design was employed, wherein data were collected from respondents at a single point in time. This approach is suitable for understanding current behavioural trends and identifying significant determinants affecting digital payment usage.

The study is based on primary data collected through a structured questionnaire. The questionnaire was designed using a five-point Likert scale ranging from strongly disagree to strongly agree, enabling

the measurement of respondents’ perceptions regarding various factors. The key variables considered in this study include convenience, perceived security, trust, accessibility, and promotional benefits as independent variables, while consumer behaviour is treated as the dependent variable.

A total of 250 respondents were selected using a convenience sampling technique. The study is confined to Tamil Nadu, India, and includes individuals who actively use digital payment methods such as UPI, mobile wallets, and card-based transactions.

To ensure the reliability of the measurement instrument, Cronbach’s Alpha was applied, with a threshold value of 0.70 considered acceptable. Factor analysis using Principal Component Analysis (PCA) with Varimax rotation was conducted to identify underlying dimensions and to reduce data complexity.

Further, correlation analysis was performed to examine the relationships among variables. Statistical techniques such as t-test and analysis of variance (ANOVA) were used to analyse differences across demographic groups. Cross-tabulation and Chi-square tests were applied to assess associations between categorical variables.

Finally, multiple regression analysis was conducted to evaluate the impact of independent variables on

consumer behaviour. This helped in identifying the most influential factors affecting digital payment adoption.

All statistical analyses were carried out using SPSS software, and the results were interpreted using appropriate statistical measures.

6.1 Descriptive Statistics

Table 6.1 Summary Statistics of Latent Constructs Used in the Study

Variable	Mean	SD
Convenience	3.781	0.628
Security	3.884	0.642
Trust	3.788	0.614
Accessibility	3.761	0.689
Promotion	3.711	0.655
Behaviour	3.758	0.401

The results indicate that all variables have mean values above the midpoint, reflecting a generally positive perception toward digital payment systems. Among the constructs, perceived security records the highest mean value, suggesting that respondents

6. Results and Discussions

This section presents the results of the statistical analyses conducted to examine the determinants of digital payment adoption and their impact on consumer behaviour.

feel relatively confident about the safety of digital transactions. The moderate standard deviation values indicate a reasonable level of agreement among respondents, suggesting consistency in their perceptions.

6.2 Reliability Analysis

Table 6.2 Internal Consistency Reliability of Measurement Scales

Construct	No. of Items	Cronbach's Alpha
Convenience	3	0.796
Security	3	0.822
Trust	3	0.806
Accessibility	3	0.826
Promotion	3	0.821
Consumer Behaviour	4	0.726

The reliability analysis indicates that all constructs exhibit Cronbach's alpha values above the recommended threshold of 0.70, confirming

satisfactory internal consistency. This suggests that the measurement scales are reliable and suitable for further statistical analysis

6.3 Factor Analysis

Table 6.3 Assessment of Sampling Adequacy and Sphericity for Factor Analysis

Measure	Value
KMO	0.793
Bartlett's Chi-Square	1872.437
df	171
Sig.	< 0.001

The KMO value of 0.793 indicates adequate sampling adequacy, while the significant Bartlett's

test ($p < 0.001$) confirms that the variables are sufficiently correlated. This validates the suitability

of the dataset for factor analysis and supports the structural validity of the constructs.

6.4 Correlation Analysis

Table 6.4 Bivariate Correlation Coefficients Among Study Variables

Variables	Conv	Sec	Trust	Access	Promo	Behaviour
Convenience	1	-0.029	0.085	0.076	-0.045	0.494*
Security	-0.029	1	-0.059	-0.011	0.027	-0.064
Trust	0.085	-0.059	1	0.073	0.091	0.509*
Accessibility	0.076	-0.011	0.073	1	0.074	0.436*
Promotion	-0.045	0.027	0.091	0.074	1	0.385*
Behaviour	0.494*	-0.064	0.509*	0.436*	0.385*	1

(Note: Correlation is significant at $p < 0.01$.)

The results show that convenience, trust, accessibility, and promotional benefits are positively associated with consumer behaviour, indicating that improvements in these factors enhance digital payment usage. Trust demonstrates the strongest

relationship, highlighting its critical role in influencing behaviour. In contrast, perceived security shows a weak and negative relationship, suggesting that it does not significantly influence behavioural outcomes in this study.

6.5 Regression Analysis

Table 6.5 Estimated Coefficients from Multiple Linear Regression Model

Variable	B	Beta	t	Sig.
Constant	0.201	—	1.166	0.245
Convenience	0.285	0.447	12.978	<0.001
Security	-0.020	-0.032	-0.936	0.350
Trust	0.269	0.413	11.947	<0.001
Accessibility	0.202	0.347	10.075	<0.001
Promotion	0.210	0.343	9.960	<0.001

The regression results indicate that convenience ($\beta = 0.447$, $p < 0.001$) is the most influential predictor of consumer behaviour, followed by trust ($\beta = 0.413$, $p < 0.001$), accessibility ($\beta = 0.347$, $p < 0.001$), and promotional benefits ($\beta = 0.343$, $p < 0.001$). These

variables have a statistically significant positive impact.

In contrast, perceived security ($\beta = -0.032$, $p > 0.05$) does not show a significant effect. The model explains 71.6% of the variance ($R^2 = 0.716$), indicating strong explanatory power.

6.6 Model Summary

Table 6.6 Overall Fit Statistics of the Regression Model

R	R ²	Adjusted R ²	F	Sig.
0.846	0.716	0.710	122.883	<0.001

The model explains 71.6% of the variance in consumer behaviour, indicating strong explanatory

power. The significant F-value confirms that the regression model is statistically valid and provides a good fit for the data.

6.7 Cross-tabulation

Table 6.7 Cross-tabulation of Gender and Digital Payment Usage Frequency

Gender	Daily	Weekly	Monthly	Rarely	Total
Male	24	25	28	35	112
Female	36	36	29	37	138
Total	60	61	57	72	250

The distribution indicates similar usage patterns across male and female respondents. There is no

meaningful variation, suggesting that gender does not significantly influence digital payment usage frequency.

6.8 Chi-Square

Table 6.8 Association Between Gender and Digital Payment Usage Frequency (Chi-Square Test)

Test	Value	df	Sig.
Pearson Chi-Square	1.772	3	0.621

The Chi-square test indicates that there is no statistically significant association between gender and digital payment usage frequency ($p > 0.05$).

6.9 ANOVA Analysis

Table 6.9 Comparison of Consumer Behaviour Across Age Groups (One-Way ANOVA Results)

Source	F	Sig.
Between Groups	1.870	0.135

The results indicate that there is no statistically significant difference in consumer behaviour across

age groups ($p > 0.05$), suggesting that age does not significantly influence digital payment behaviour

6.10 Independent Samples t-Test

Table 6.10 Gender-Based Differences in Consumer Behaviour (Independent Samples t-Test)

Variable	t	df	Sig. (2-tailed)
Behaviour (Male vs Female)	1.304	248	0.193

The results indicate no significant difference between male and female respondents in terms of consumer behaviour. This suggests that gender does not play a decisive role in influencing digital payment usage.

adoption. Users are more likely to engage with systems that simplify transactions and reduce effort.

7. Findings

The analysis of the data provides important insights into the factors influencing digital payment behaviour. The key findings of the study are summarized as follows:

Trust emerges as another significant determinant, highlighting that consumers prefer digital payment platforms that are reliable and dependable. Higher levels of trust encourage continued usage and strengthen user confidence in digital transactions.

Convenience is found to have a strong and statistically significant influence on consumer behaviour, indicating that ease, speed, and efficiency are the primary drivers of digital payment

Accessibility also plays a crucial role in influencing behaviour. The widespread availability of digital payment systems across devices and locations enhances user convenience and promotes adoption.

Promotional benefits, such as cashback offers, discounts, and rewards, are observed to positively influence consumer behaviour. These incentives act

as motivating factors that encourage both initial adoption and repeated usage.

In contrast, perceived security does not exhibit a statistically significant impact on consumer behaviour. This suggests that users may already assume a basic level of security in digital payment systems and therefore do not consider it a primary influencing factor.

The demographic analysis indicates that there are no significant differences in digital payment behaviour across gender and age groups. This finding suggests that digital payment adoption is relatively uniform across different demographic segments.

8. Conclusion

The present study examines the key determinants influencing digital payment adoption and their impact on consumer behaviour in India. The findings indicate that digital payment usage is primarily driven by functional and experiential factors rather than demographic characteristics. Among the variables analysed, convenience emerges as the most influential determinant, highlighting the importance of ease, speed, and efficiency in shaping consumer preferences.

Trust, accessibility, and promotional benefits are also found to have a significant positive impact on consumer behaviour. These factors collectively enhance user engagement by ensuring reliability, improving access, and providing additional incentives for usage. The results suggest that consumers are more inclined to adopt and continue using digital payment systems when they perceive them as convenient, trustworthy, and beneficial.

Interestingly, perceived security does not exhibit a statistically significant impact on consumer behaviour. This finding implies that users may already assume a baseline level of security in digital transactions and therefore do not consider it a primary decision-making factor. This reflects the growing maturity and acceptance of digital payment systems among users.

The study also reveals that demographic factors such as gender and age do not significantly influence digital payment behaviour, indicating that adoption patterns are relatively consistent across different

population groups. This suggests that digital payment systems have achieved a broad level of acceptance across diverse segments of society.

From a theoretical perspective, the study contributes to the existing literature by providing empirical evidence on the combined influence of multiple determinants on consumer behaviour within a unified framework. From a practical standpoint, the findings offer valuable insights for digital payment service providers, policymakers, and financial institutions to design strategies that enhance user experience, strengthen trust, and improve accessibility.

Overall, the study underscores the importance of user-centric design and value-driven services in promoting the sustained adoption of digital payment systems. Future efforts should focus on continuous innovation, improved infrastructure, and inclusive strategies to ensure wider adoption and long-term sustainability of digital financial services.

9. Recommendations

In light of the findings, the following recommendations are proposed:

- Digital payment service providers should focus on **improving user interface and transaction speed** to enhance convenience.
- Efforts should be made to **strengthen user trust** through transparent policies, reliable services, and consistent performance.
- Expanding infrastructure and ensuring **wider accessibility**, especially in underserved areas, can significantly increase adoption.
- Introducing and maintaining **attractive promotional schemes**, such as cashback and reward programs, can encourage frequent usage.
- Although security was not found to be significant, it is essential to **continuously upgrade security measures** to maintain user confidence and prevent potential risks.

10. Limitations of the Study

This study is subject to certain limitations. The data was collected from a specific sample, which may not

fully represent the broader population. Additionally, the study focused on selected variables, and other potential factors influencing digital payment behaviour were not examined.

11. Scope for Future Research

Future research can expand this study by including a larger and more diverse sample. Additional variables such as digital literacy, technological awareness, and cultural influences may also be explored to gain a more comprehensive understanding of consumer behaviour in digital payment systems

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