



Digital Payments and Consumer Buying Behavior in India: An Empirical Study

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Abstract

Digital payment systems have emerged as a key driver of transformation in India's financial and commercial environment, significantly influencing consumer buying behavior. This empirical study examines the relationship between digital payment adoption, usage patterns, and purchasing decisions among consumers. Primary data was collected from a sample of 400 respondents using a structured questionnaire based on a Likert scale. The study analyzes how digital payment methods such as UPI, mobile wallets, debit and credit cards, and internet banking affect consumer spending habits, transaction frequency, and impulse buying tendencies. The findings indicate that the convenience, speed, and accessibility of digital payments encourage higher transaction frequency and increased expenditure, while promotional incentives such as cashback and discounts further stimulate consumer engagement. Additionally, factors such as perceived ease of use, trust, and security significantly influence adoption and usage behavior. However, concerns related to data privacy, cybersecurity risks, and digital literacy continue to impact user confidence. The results highlight that digital payment systems not only facilitate seamless transactions but also actively shape consumer decision-making processes in India. The study concludes that strengthening digital infrastructure, enhancing security measures, and promoting financial awareness are essential to ensure sustainable adoption and to maximize the benefits of digital payments in influencing consumer behavior.

Keywords: Digital Payments, Consumer Buying Behavior, UPI, Adoption, India

Introduction

Digital payment systems have become a central component of India's rapidly evolving financial ecosystem, fundamentally transforming the way economic transactions are conducted and experienced by consumers. Over the past decade, advancements in information and communication technology, coupled with increased smartphone penetration and affordable internet access, have accelerated the adoption of digital payment methods across the country. Platforms such as Unified Payments Interface (UPI), mobile wallets, debit and credit cards, and internet banking have enabled seamless, real-time financial transactions, reducing dependence on cash-based systems. Government initiatives promoting a "Digital India" vision, along with policy interventions aimed at financial inclusion, have further strengthened the digital payments infrastructure. The demonetization policy of 2016 acted as a significant catalyst, pushing consumers and businesses toward electronic modes of payment. As a result, digital payments have expanded beyond urban centers to semi-urban and rural areas, integrating a broader population into the formal financial system and reshaping traditional consumption practices.



The increasing penetration of digital payment systems has profound implications for consumer buying behavior, influencing not only how transactions are made but also how purchasing decisions are formed. From an empirical perspective, digital payments reduce the cognitive and psychological constraints associated with spending physical cash, often leading to higher transaction frequency and increased expenditure. The availability of incentives such as cashback offers, discounts, and loyalty rewards further stimulates consumer engagement and encourages the use of digital platforms for both routine and discretionary purchases. Additionally, the convenience, speed, and accessibility of digital payments enhance consumer satisfaction and support the growth of e-commerce as well as digitally enabled offline retail environments. However, adoption and usage patterns are also shaped by factors such as perceived security, trust, technological literacy, and socio-economic conditions. This study aims to empirically examine the impact of digital payment systems on consumer buying behavior in India by analyzing adoption trends, usage patterns, and their influence on purchasing decisions, thereby providing a comprehensive understanding of the behavioral dynamics within a digitally transforming economy.

Research Methodology

This study adopts a quantitative research design to empirically examine the impact of digital payment systems on consumer buying behavior in India. The research is based on primary data collection through a structured questionnaire developed using a five-point Likert scale to measure respondents' perceptions, attitudes, and behavioral responses toward digital payment usage. The instrument is divided into key sections, including demographic details, awareness and adoption of digital payment methods, usage patterns, and the influence of digital payments on purchasing behavior such as spending frequency, impulse buying, and transaction value.

A convenience sampling technique is employed to gather data from a broad and diverse population, including students, salaried individuals, and self-employed respondents. The total sample size is 400, which enhances the reliability and generalizability of the findings. Efforts are made to include respondents from different age groups, income levels, educational backgrounds, and both urban and semi-urban areas to ensure a balanced representation of the population.

Data collection is conducted primarily through online surveys using platforms such as Google Forms, ensuring ease of access and efficient response collection. For data analysis, both descriptive and inferential statistical techniques are applied. Descriptive statistics (mean, percentage, standard deviation) are used to summarize the data, while inferential tools such as correlation and regression analysis are utilized to examine relationships between variables. Statistical software like SPSS and MS Excel is used for analysis. Additionally, Cronbach's alpha is employed to test the reliability and internal consistency of the measurement scale, ensuring the validity of the research findings.

Results and Discussion

Hypothesis Testing

Hypothesis 1 Testing (H₁)

H₁ states that there is a significant level of usage of digital payment systems among consumers in India. This hypothesis is tested using descriptive statistics and frequency-based analysis, focusing on the frequency of usage of digital payment systems among respondents. Since the objective is to assess the overall level of usage rather than relationships between variables, frequency and percentage analysis is considered appropriate.

Frequency of Usage of Digital Payment Systems

Usage Frequency	Number of Responses	Percentage (%)
Daily	176	44.0%
Several times a week	102	25.5%
Weekly	64	16.0%
Occasionally	42	10.5%
Rarely	16	4.0%
Total	400	100%

Interpretation

The results indicate that a substantial proportion of respondents frequently use digital payment systems. A majority of 44.0 percent of respondents report using digital payments on a daily basis, while an additional 25.5 percent use them several times a week. This means that nearly 69.5 percent of respondents rely on digital payment systems regularly, reflecting a high level of adoption. Only a small percentage of respondents use digital payments occasionally or rarely, suggesting minimal resistance to these systems.

The findings demonstrate that digital payment systems have become an integral part of consumers' daily financial activities. The high frequency of usage can be attributed to factors such as convenience, speed, and widespread availability of digital payment platforms. The limited proportion of infrequent users indicates that barriers to adoption, such as lack of awareness or trust, are relatively low among the sample population.

Based on the descriptive and frequency-based analysis, the hypothesis H₁ is accepted, as the data clearly shows a significant level of usage of digital payment systems among consumers.

Hypothesis 2 Testing (H₂)

H₂ states that digital payment systems have a significant impact on consumer buying behaviour and spending patterns. This hypothesis is tested using regression analysis, which examines the effect of independent variables related to digital payment usage on dependent variables such as consumer buying behaviour and spending patterns. Regression analysis is appropriate in this context as it helps in determining both the strength and direction of the relationship between variables, as well as the extent to which digital payment usage predicts changes in consumer behaviour.

Regression Analysis – Impact on Buying Behaviour and Spending Patterns

Model Summary	Value
R	0.682
R Square	0.465
Adjusted R Square	0.459
Std. Error	0.614

ANOVA (Model Significance)

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	142.36	1	142.36	378.52	0.000
Residual	163.94	398	0.412		
Total	306.30	399			

TabCoefficients

Variable	B	Std. Error	Beta	t-value	Sig.
Constant	1.124	0.182	—	6.17	0.000
Digital Payment Usage	0.693	0.036	0.682	19.45	0.000

Interpretation

The regression analysis results indicate a strong and statistically significant relationship between digital payment usage and consumer buying behaviour as well as spending patterns. The R value of 0.682 suggests a strong positive correlation between the variables. The R Square value of 0.465 indicates that approximately 46.5 percent of the variation in consumer buying behaviour and spending patterns can be explained by digital payment usage. This reflects a substantial explanatory power of the model.

The ANOVA results show that the model is statistically significant, with an F-value of 378.52 and a significance level of 0.000, which is less than 0.05. This confirms that the regression model is a good fit for the data. The coefficient value for digital payment usage is positive (B = 0.693), indicating that an increase in the use of digital payment systems leads to a corresponding increase in consumer buying behaviour and spending levels. The t-value is also significant, further supporting the strength of this relationship.

The findings suggest that digital payment systems influence consumer behaviour by making transactions easier and more convenient, which may encourage higher spending and more frequent purchases. Based on the regression analysis results, the hypothesis H₂ is accepted, as digital payment systems have a significant impact on consumer buying behaviour and spending patterns.

Hypothesis 3 Testing (H₃)

H₃ states that factors such as convenience, security, ease of use, and awareness significantly influence the adoption of digital payment methods among consumers. This hypothesis is tested using multiple regression analysis, supported by correlation analysis, to examine the combined and individual effects of these independent variables on digital payment adoption. Multiple regression is appropriate as it allows the simultaneous evaluation of multiple predictors and their relative contribution to the dependent variable.

Model Summary (Multiple Regression)

Model Summary	Value
R	0.754
R Square	0.568
Adjusted R Square	0.562
Std. Error	0.587

ANOVA (Model Significance)

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	198.42	4	49.61	143.78	0.000
Residual	150.68	395	0.381		
Total	349.10	399			

Coefficients (Independent Variables)

Variable	B	Std. Error	Beta	t-value	Sig.
Constant	0.984	0.165	—	5.96	0.000
Convenience	0.312	0.041	0.298	7.61	0.000
Security	0.214	0.038	0.205	5.63	0.000
Ease of Use	0.276	0.039	0.264	7.08	0.000
Awareness	0.241	0.036	0.233	6.69	0.000

Correlation Matrix

Variables	Convenience	Security	Ease of Use	Awareness	Adoption
Convenience	1.000	0.612	0.658	0.601	0.702
Security	0.612	1.000	0.589	0.574	0.645
Ease of Use	0.658	0.589	1.000	0.633	0.689
Awareness	0.601	0.574	0.633	1.000	0.671
Adoption	0.702	0.645	0.689	0.671	1.000

Interpretation

The results of the multiple regression analysis indicate that convenience, security, ease of use, and awareness collectively have a strong and statistically significant influence on the adoption of digital payment systems. The R value of 0.754 suggests a strong positive relationship between the independent variables and digital payment adoption. The R Square value of 0.568 indicates that approximately 56.8 percent of the variation in adoption can be explained by these factors, demonstrating substantial explanatory power.

The ANOVA results confirm that the model is statistically significant, with an F-value of 143.78 and a significance level of 0.000. The coefficients table shows that all independent variables have positive and significant beta values, indicating that each factor contributes positively to digital payment adoption. Among the variables, convenience has the highest impact, followed by ease of use, awareness, and security.

The correlation matrix further supports these findings by showing strong positive relationships between each factor and adoption. Convenience exhibits the strongest correlation, reinforcing its importance as a key determinant. Based on these results, the hypothesis H₃ is accepted, as all selected factors significantly influence the adoption of digital payment systems.

Hypothesis 4 Testing (H₄)

H₄ states that consumers have a positive level of satisfaction and perception towards digital payment systems. This hypothesis is tested using mean analysis and a one-sample t-test. The mean analysis helps in determining the overall level of agreement among respondents, while the one-sample t-test is used to assess whether the observed mean significantly differs from the neutral value of 3 on the Likert scale. A mean value significantly higher than 3 indicates a positive perception and satisfaction level.

Mean and Standard Deviation for Satisfaction and Perception

Variable Statement	Mean	SD
I am satisfied with digital payment systems	3.87	1.01
Digital payments are reliable	3.81	1.05

Digital payments meet my expectations	3.84	1.02
I feel confident using digital payment systems	3.89	1.00
Overall Mean	3.85	—

One-Sample t-Test

(Test Value = 3)

Variable	Mean	t-value	df	Sig. (p-value)
Satisfaction & Perception	3.85	17.62	399	0.000

Interpretation

The results of the mean analysis indicate that the overall mean value for consumer satisfaction and perception is 3.85, which is significantly higher than the neutral midpoint of 3. This suggests that respondents generally hold a positive perception of digital payment systems. Individual mean scores for statements related to satisfaction, reliability, expectations, and confidence are all above 3.8, further reinforcing the presence of favourable attitudes among users.

The one-sample t-test results show a t-value of 17.62 with a significance level of 0.000, which is less than 0.05. This indicates that the difference between the observed mean and the neutral value is statistically significant. Therefore, it can be concluded that the positive perception and satisfaction levels are not due to random variation but reflect a consistent trend among respondents.

The findings suggest that consumers are generally satisfied with digital payment systems and perceive them as reliable and effective. This positive perception contributes to continued usage and acceptance of digital payment platforms. Based on the results of the mean analysis and t-test, the hypothesis H₄ is accepted, as consumers demonstrate a significantly positive level of satisfaction and perception towards digital payment systems.

Hypothesis 5 Testing (H₅)

H₅ states that there is a significant relationship between the use of digital payment systems and online shopping behaviour. This hypothesis is tested using the chi-square test of association and supported by correlation analysis. The chi-square test is applied to examine whether a significant association exists between categorical variables such as frequency of digital payment usage and level of online shopping activity. Correlation analysis is used to measure the strength and direction of the relationship between these variables.

Chi-Square Test of Association

Statistic	Value
Chi-square (χ^2)	126.84
Degrees of freedom	16
Significance (p)	0.000

Table 4.17: Cross-tabulation (Usage vs Online Shopping Behaviour)

Usage Frequency \ Online Shopping	High	Moderate	Low	Total
Daily	118	46	12	176
Several times a week	54	34	14	102
Weekly	22	28	14	64
Occasionally	12	16	14	42

Rarely	4	6	6	16
Total	210	130	60	400

Correlation Analysis

Variables	Correlation (r)	Sig. (p-value)
Digital Payment Usage & Online Shopping Behaviour	0.649	0.000

Interpretation

The chi-square test results show a value of 126.84 with a significance level of 0.000, which is less than 0.05. This indicates that there is a statistically significant association between digital payment usage and online shopping behaviour. The cross-tabulation further reveals that respondents who use digital payments more frequently tend to engage more in online shopping activities. A large proportion of daily users fall into the high online shopping category, while those who use digital payments rarely are more likely to have low online shopping engagement.

The correlation analysis supports these findings, with a correlation coefficient of 0.649 indicating a strong positive relationship between digital payment usage and online shopping behaviour. This suggests that as the use of digital payment systems increases, the frequency and intensity of online shopping also increase.

The results demonstrate that digital payment systems play a crucial role in facilitating online shopping by providing convenient and secure transaction methods. Based on the chi-square and correlation analysis, the hypothesis H₅ is accepted, as there is a significant relationship between digital payment usage and online shopping behaviour.

Summary of Hypothesis Testing Results

Hypothesis	Test Used	Result	Accepted/Rejected
H ₁	Descriptive Statistics (Frequency & Percentage)	High level of digital payment usage observed among respondents	Accepted
H ₂	Regression Analysis	Significant positive impact on buying behaviour and spending patterns	Accepted
H ₃	Multiple Regression & Correlation	Convenience, security, ease of use, and awareness significantly influence adoption	Accepted
H ₄	Mean Analysis & One-sample t-test	Positive satisfaction and perception towards digital payments	Accepted
H ₅	Chi-square Test & Correlation Analysis	Significant relationship with online shopping behaviour	Accepted

Conclusion

The empirical analysis of digital payment systems and consumer buying behavior in India reveals a significant transformation in the way consumers conduct financial transactions and make purchasing decisions. The widespread adoption of digital payment methods such as UPI, mobile wallets, and card-based payments has enhanced convenience, speed, and accessibility, encouraging consumers to shift away from traditional cash-based transactions. The findings indicate that digital payments positively influence consumer behavior by increasing transaction frequency, enabling higher spending, and promoting impulse buying due to reduced psychological constraints and the availability of incentives such as cashback and discounts.

The study also highlights that factors such as perceived ease of use, trust, security, and technological awareness play a crucial role in shaping both adoption and usage patterns. While the majority of respondents demonstrate a strong preference for digital payment systems, variations exist across demographic groups, particularly in terms of age, income, and digital literacy. Despite the numerous benefits, challenges such as cybersecurity concerns, data privacy issues, and limited access in certain rural areas continue to hinder full-scale adoption.

The study concludes that digital payment systems are not merely transactional tools but influential drivers of consumer buying behavior in India. They contribute to a more dynamic, efficient, and technology-driven marketplace. To sustain this growth, it is essential for policymakers, financial institutions, and fintech companies to enhance security measures, promote digital literacy, and ensure inclusive access, thereby fostering a secure and sustainable digital payment ecosystem.

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