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Impact of Digital Payment Systems on Consumer Spending Behaviour: A Study Among Urban Consumers

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Abstract—This paper examines how digital payment systems influence consumer spending behaviour among urban consumers. With the rapid growth of digital payment systems such as UPI, mobile wallets, and internet banking, consumer buying behaviour has changed considerably. The study examines the effect of digital payment adoption on consumer spending patterns, impulse purchasing, and overall expenditure. Data were collected through a structured questionnaire administered to 510 respondents on a five-point Likert scale. Descriptive statistics, correlation, regression, and mediation analysis were used to assess the relationship between digital payment usage and consumer spending behaviour. The results indicate that digital payment systems considerably affect consumer expenditure patterns by making transactions easier, minimising transaction friction, and promoting more frequent and impulsive spending.

Keywords—Cashless Economy, Consumer Spending Behaviour, Digital Payment Systems, FinTech, Mobile Wallets, UPI.

I. INTRODUCTION

The rapid pace of technological change, led by advances in financial technology, has transformed the global financial landscape, driving an immense shift from traditional cash transactions to digital payment systems. In recent years, digital payments have become an essential part of everyday financial activity because of the growing access to smartphones, internet connectivity, and financial technology innovations. Digital payment systems — the Unified Payments Interface (UPI), mobile wallets, debit and credit cards, and internet banking — enable consumers to transact quickly, safely, and conveniently without the physical handling of cash.

Digitisation of payment systems in India has been embraced at a rapid pace, especially following initiatives such as the Digital India campaign and the growth of financial technology services. The increasing popularity of platforms such as Google Pay, PhonePe, and Paytm has made digital transactions more accessible and convenient to customers across different age groups and income levels. These platforms enable users to make instant payments for shopping, bill payment, online services, and money transfer.

Digital payment systems have had a considerable impact on consumer purchasing patterns because of the convenience and speed they provide.

Compared with cash payments, digital payments minimise physical money handling and ease the payment process, which can prompt consumers to make more frequent purchases. The convenience of paying through smartphones and online platforms can also encourage impulse-buying behaviour and higher spending.

This paper therefore focuses on how digital payment systems affect consumer spending behaviour by studying consumer preferences, usage patterns, and the factors that determine spending decisions in a digital payment setting.

II. LITERATURE REVIEW

A. Adoption of Mobile Payment Systems

Dahlberg, Guo, and Ondrus (2015) conducted a comprehensive review of mobile payment research and examined the factors influencing the adoption of mobile payment systems. Their study highlighted that technological innovation, convenience, security, and perceived usefulness are the primary factors encouraging consumers to adopt digital payment technologies. The research emphasised that mobile payment systems reduce transaction time and increase accessibility, thereby influencing consumer purchasing behaviour, and noted that mobile payments simplify financial transactions and may encourage more frequent purchases because of their ease of use.

B. Factors Influencing Mobile Payment Adoption

Liébana-Cabanillas, Sánchez-Fernández, and Muñoz-Leiva (2017) analysed the factors influencing mobile payment adoption by applying the Technology Acceptance Model (TAM). Their research found that perceived usefulness, ease of use, and trust play a significant role in consumers' willingness to adopt digital payment platforms, and that security and privacy concerns can influence user trust. When consumers perceive digital payment systems as convenient and secure, they are more likely to adopt them for everyday transactions, which may ultimately influence their spending behaviour.

C. Digital Payment Adoption in India

Sivathanu (2019) examined the adoption of digital payment systems in India and identified the factors influencing consumers' willingness to use cashless payment methods.



The study revealed that government initiatives promoting digital transactions, the rapid growth of smartphones, and increased internet penetration have significantly contributed to digital payment adoption in India. Consumers perceive digital payments as faster and more convenient than cash, and promotional incentives such as cashback offers and discounts encourage frequent use.

D. Mobile Payment Adoption and Consumer Behaviour

Oliveira, Thomas, Baptista, and Campos (2016) studied the factors influencing mobile payment adoption using a unified framework combining the Technology Acceptance Model (TAM) and Innovation Diffusion Theory (IDT). The study found that perceived compatibility, ease of use, and relative advantage significantly influence consumers' intention to adopt mobile payment technologies, concluding that mobile payment systems offer greater convenience than traditional payment methods, which can lead to increased transaction frequency and changes in spending patterns.

E. FinTech Innovations and Consumer Financial Behaviour

Nicoletti (2017) explored the role of financial technology (FinTech) innovations in transforming financial services and consumer financial behaviour. The study highlighted that digital payment platforms have significantly improved the efficiency and accessibility of financial transactions, and that FinTech solutions such as mobile banking, digital wallets, and instant payment systems allow consumers to transact quickly and securely, reshaping consumer expectations and contributing to the growth of a cashless economy.

F. Digital Payments and Consumer Spending Patterns

Humphrey, Kim, and Vale (2001) examined how electronic payment methods influence consumer spending behaviour. Their research suggested that consumers tend to spend more when using electronic payment methods compared with cash transactions, because digital and card-based payments reduce the psychological awareness of spending associated with physically handling cash, which can lead to increased transaction frequency and higher expenditure.

G. Trust and Security in Digital Payment Systems

Nikou and Bouwman (2014) examined the role of trust and perceived security in the adoption of digital financial services. Their study found that consumers are more likely to adopt digital payment platforms when they believe the systems are secure and reliable, and that concerns related to data privacy, cyber fraud, and unauthorised transactions can reduce consumer confidence.

The researchers concluded that strengthening security infrastructure and regulatory frameworks is essential to build consumer trust and encourage wider adoption of digital payments.

III. RESEARCH GAP

A large number of studies have explored the adoption and acceptance of digital payment systems, focusing on convenience, security, and user experience. However, limited research has specifically examined the effect of digital payment systems on consumer spending behaviour, such as purchase frequency and impulse buying. Moreover, most studies focus on technology adoption rather than the behavioural change that occurs once a system is adopted, particularly in the Indian context. This research therefore seeks to study how the habit of using digital payment systems influences the spending behaviour and purchasing decisions of urban consumers.

IV. OBJECTIVES OF THE STUDY

- 1) To examine the level of adoption of digital payment systems among consumers.
- 2) To analyse the impact of digital payment systems on consumer spending behaviour.
- 3) To identify the factors influencing consumers to use digital payment methods.
- 4) To examine whether digital payment systems encourage frequent or impulse purchases.
- 5) To analyse consumer preferences toward different digital payment platforms.

V. CONCEPTUAL FRAMEWORK

The conceptual framework explains the relationship between the factors influencing digital payment usage and consumer spending behaviour. The independent variables are Digital Payment Convenience, Ease of Use, Security Perception, and Promotional Offers & Cashback (measured through fast transactions, accessibility, a user-friendly interface, and discounts/rewards). Frequency of Digital Payment Usage acts as a mediating variable (number of transactions, usage of UPI/wallets, and online payment frequency), influencing the dependent variable, Consumer Spending Behaviour (purchase frequency, impulse buying, increased spending, and online shopping behaviour).

A. Research Hypotheses

Five hypotheses were developed based on the conceptual framework and aligned with the objective of analysing the impact of digital payment systems on consumer spending behaviour, as summarised in Table I.

TABLE I RESEARCH HYPOTHESES

Hyp.	Alternate Hypothesis (H ₁)
H1	Digital payment convenience significantly influences consumer spending behaviour.
H2	Ease of use of digital payment systems significantly influences consumer spending behaviour.
H3	Security perception of digital payment systems significantly influences consumer spending behaviour.
H4	Frequency of digital payment usage significantly mediates the relationship between digital payment factors and consumer spending behaviour.
H5	Promotional offers and cashback significantly influence consumer spending behaviour through digital payments.

VI. RESEARCH METHODOLOGY

A. Research Design

The study follows a descriptive research design using a quantitative approach. The objective is to test the effect of digital payment system usage on consumer spending behaviour by examining how consumers perceive the convenience, ease of use, security, and promotional incentives associated with digital payments, and how these factors influence buying behaviour. A structured questionnaire was used as the primary data-collection tool, since it allows standardised responses to be gathered efficiently from a large number of respondents.

B. Data Collection and Sampling

Data were collected from consumers using a Google Forms questionnaire. The survey targeted people who use digital payment systems regularly, including UPI, mobile wallets, debit/credit cards, and internet banking. Items were measured on a five-point Likert scale ranging from Strongly Disagree to Strongly Agree. The sample was selected using convenience sampling and included respondents of varying ages and professions who are familiar with digital payment platforms. The sample size was calculated using Slovin's formula, assuming a margin of error of 8% and an estimated population of 1,000 digital payment users, yielding a required sample of 510 respondents, obtained through online survey distribution.

C. Survey Instrument

The questionnaire consisted of 15 items designed to measure key constructs related to digital payment usage and consumer spending behaviour, grouped as: Digital Payment Convenience (Q1, Q4, Q5, Q8); Ease of Use (Q2, Q3); Security Perception (Q6, Q10); Promotional Offers and Cashback (Q9, Q13); Frequency of Digital Payment Usage (Q7, Q11); and Consumer Spending Behaviour — the dependent variable (Q12, Q14, Q15).

D. Data Analysis Techniques

Descriptive statistics (mean and standard deviation) were used to summarise responses. To test the hypotheses, the study applied multiple linear regression to examine how digital payment factors affect spending behaviour, correlation analysis to quantify the relationship between digital payment usage and spending behaviour, and mediation analysis to examine whether frequency of digital payment usage mediates the relationship between digital payment factors and spending behaviour. All analyses were performed using statistical software.

E. Limitations

This study has certain limitations. First, it relies on self-reported responses, which may introduce response bias. Second, convenience sampling may restrict the generalisability of results to the wider population. Third, data were collected over a limited period, and consumer behaviour may evolve as digital payment technologies develop further. Results should therefore be interpreted within these constraints.

VII. RESULTS AND ANALYSIS

A. Data Reliability

Reliability was assessed using Cronbach's Alpha, computed after converting Likert-scale responses to a numerical scale from 1 to 5, as shown in Table II.

TABLE II RELIABILITY STATISTICS

Scale	Cronbach's Alpha	N of Items
Overall Scale (Q1–Q15)	0.82 (approx.)	15

The overall Cronbach's Alpha of 0.82 exceeds the recommended threshold of 0.7, indicating good internal reliability of the measurement scale. Two items — Q2 (Ease of Use) and Q13 (Promotional Offers/Cashback influence) — showed relatively lower item-total correlations, suggesting they align less closely with the overall construct.

This variation is expected given that the scale incorporates several distinct constructs (convenience, security perception, usage frequency, and spending behaviour), and does not materially affect overall reliability.

B. Item-Level Descriptive Statistics

TABLE III ITEM-LEVEL STATISTICS (MEAN, SD)

Item	Survey Statement (Abbreviated)	Mean	SD
Q1	Digital payments are convenient for transactions	4.3	0.7
Q2	Digital payment systems are easy to use	4.1	0.8
Q3	I can quickly learn to use digital payment apps	4.2	0.7
Q4	Digital payments save time	4.4	0.6
Q5	Digital payments are accessible anytime	4.3	0.7
Q6	Digital payment systems are secure	3.9	0.9
Q7	I frequently use digital payment methods	4.2	0.8
Q8	Digital payments reduce effort in transactions	4.3	0.7
Q9	Cashback and offers influence my usage	4.0	0.9
Q10	I trust digital payment platforms	3.8	0.9
Q11	I use digital payments for most purchases	4.1	0.8
Q12	Digital payments increase my spending	4.2	0.8
Q13	Discounts encourage more purchases	4.1	0.9
Q14	I make more impulse purchases using digital payments	4.3	0.7
Q15	My overall spending has increased	4.2	0.8

The sample of 510 urban consumers reported regular use of digital payment systems such as UPI, mobile wallets, and online banking. Mean scores exceeded 4.0 on most items, indicating strong agreement that digital payment systems have a considerable impact on consumer spending behaviour. Convenience-related items recorded the highest mean scores, suggesting that consumers view digital payments as quick, readily available, and simple to use; this establishes convenience as one of the key drivers of adoption.

Items relating to ease of use were also strongly endorsed, indicating that user-friendly interfaces and fast transaction processes promote frequent use. Spending-behaviour items — particularly those relating to impulse buying and increased spending — also recorded high mean values, supporting the view that digital payments reduce the psychological barrier associated with spending money.

Items relating to promotional offers and cashback also recorded relatively high mean values, indicating that discounts and incentives play an important role in motivating consumers to use digital payments; however, greater variance in these responses suggests that the influence of promotions differs across individuals. Security-perception items recorded comparatively moderate mean scores, indicating that while consumers hold a generally positive perception of digital payment systems, some concern about safety and privacy persists. Overall, the descriptive statistics indicate that digital payment systems make consumer transactions more convenient and frequent, increase overall expenditure, and promote impulse purchases.

C. Hypothesis Testing

Hypothesis testing was carried out using the statistical techniques and decision rules summarised in Table IV.

TABLE IV HYPOTHESIS TESTING APPROACH

Hyp.	Method Used	Decision Rule
H1 & H2	Multiple linear regression	$p < 0.05$ for convenience or ease of use → reject null
H3	Correlation / regression analysis	Significant relationship between security perception and spending → reject null
H4	Mediation analysis (usage frequency)	Mediation confirmed if indirect effect is significant
H5	Regression analysis (promotional offers)	Significant coefficient for offers → reject null

H1 — Convenience → Spending Behaviour: Findings show a significant positive relationship between the convenience of digital payments and consumer spending behaviour; consumers who found digital payments convenient were more likely to spend. H1 is supported.

H2 — Ease of Use → Spending Behaviour: Ease of use was found to significantly affect spending behaviour. User-friendly platforms require less effort and encourage repeated use, leading to greater expenditure. H2 is supported.

H3 — Security Perception → Spending Behaviour: A moderate but positive relationship was found between security perception and spending behaviour. Although consumers generally trust digital payments, security concerns continue to affect usage to some extent. H3 is partly supported.

H4 — Mediating Role of Usage Frequency: Frequency of digital payment usage was confirmed as a significant mediating variable: increased usage is associated with increased spending and impulse-buying behaviour. H4 is supported.

H5 — Promotional Offers → Spending Behaviour: Promotional offers and cashback incentives were found to play an important role in encouraging further purchases and continued platform usage. H5 is supported.

VIII. DISCUSSION

The findings provide a coherent picture of how digital payment systems influence consumer behaviour. Convenience and ease of use were consistently cited by consumers as the main drivers of digital payment adoption: quick and simple transaction completion encourages frequent use, which in turn increases spending behaviour, as reflected in the strong reliability of the convenience-related constructs.

One of the more notable findings is the mediating role of usage frequency. Consumers who use digital payments more often tend to exhibit higher levels of spending and impulse purchasing, indicating that the behavioural effect of digital payments operates both directly and indirectly through increased usage patterns.

Promotional offers and cashback incentives also play a meaningful role in shaping spending behaviour: rewards and discounts encourage consumers to continue purchasing, sometimes beyond their original intent. Security perception, by contrast, is a more nuanced factor — while most consumers trust digital payment systems, variation in responses shows that security concerns persist, though these concerns do not appear to strongly deter usage, suggesting that perceived convenience outweighs perceived risk for most users.

Taken together, the results indicate that digital payment systems do more than ease transactions — they actively reshape consumer spending patterns by reducing the psychological barriers traditionally associated with handling money.

IX. CONCLUSION

This study concludes that the use of digital payment systems significantly affects the expenditure patterns of urban consumers. The results show that digital payments enhance convenience, improve transaction efficiency, and encourage frequent usage. However, alongside these benefits come unintended behavioural effects, including higher impulse buying, reduced spending awareness, and higher overall expenditure.

The relationship between the frequency of digital payment use and spending behaviour depends on several factors, including convenience, ease of use, promotional incentives, and perceived security. Frequency of usage stands out as an important mediating factor that magnifies the impact of digital payments on consumer expenditure.

In practical terms, while the efficiency and tracking capabilities of digital payments benefit consumers, they can also pose a challenge to financial discipline. It is therefore important that users adopt budgeting practices and financial-management tools to help control spending. For digital payment providers, the results suggest that features encouraging responsible spending — such as spending alerts and budgeting tools — could be beneficial. Policymakers can likewise support financial-literacy initiatives to help consumers make informed financial decisions in an increasingly cashless economy.

Overall, digital payment systems represent a transformative trend in contemporary financial behaviour, creating both opportunities and challenges for consumers and other stakeholders.

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