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FACTORS INFLUENCING THE ADOPTION OF DIGITAL PAYMENT SYSTEMS AMONG MILLENNIALS IN CHENNAI CITY: AN EMPIRICAL STUDY

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ABSTRACT

Digital payment systems have become integral to modern financial transactions, driven by advances in smartphones, internet connectivity, banking apps, and the Unified Payments Interface (UPI). Millennials, well-versed in technology and online services, represent a key demographic for digital payment adoption. This study explores the factors influencing the adoption of digital payment systems among millennials in Chennai City. It examines perceived usefulness, perceived ease of use, trust, security, and perceived risk as key determinants affecting their adoption behavior.

A sample of 150 respondents from Chennai was surveyed using a structured questionnaire based on a five-point Likert scale. Statistical methods such as percentage analysis, descriptive statistics, reliability testing, correlation, and multiple regression analyses were employed to analyze the data. It is important to highlight that data used are simulated for academic demonstration due to the unavailability of actual primary responses; these should be replaced with genuine data for authentic research purposes.

Results indicate that perceived usefulness, ease of use, trust, and security positively influence millennials' adoption of digital payments, while perceived risk negatively affects their acceptance. Among these, perceived usefulness emerged as the strongest factor driving adoption. The study suggests that digital payment providers should emphasize improving the usefulness, simplicity, convenience, trustworthiness, and security of their platforms to enhance user acceptance while addressing concerns related to perceived risk.

Keywords: Digital payments, Millennials, Perceived usefulness, Perceived ease of use, Trust, Security, Perceived risk, Adoption, Chennai

I. INTRODUCTION

Technology has transformed almost every area of modern life, including banking and financial transactions. Traditional cash payments are increasingly being supplemented or replaced by

electronic methods. Digital payment systems enable individuals to transfer money and make payments using electronic devices without physically exchanging currency.

Digital payments include UPI transactions, mobile wallets, debit cards, credit cards, internet banking, mobile banking and QR-code payments. The growth of smartphones and internet connectivity has made these services easily accessible to consumers.



India has experienced significant growth in digital payments. The Reserve Bank of India has reported substantial expansion in digital payment transactions, with UPI becoming an important component of India's retail payment ecosystem. This transformation has affected consumer behaviour and encouraged individuals to adopt cashless payment methods.

Millennials are an important consumer segment in this environment. Having grown up during a period of rapid technological development, they are generally familiar with smartphones, mobile applications and internet services. Digital payments can fit well with their need for convenience, speed and accessibility.

However, technology adoption does not depend only on availability. Consumers evaluate whether a digital payment system is useful, easy to use, trustworthy and secure. They may also consider the risks associated with online financial transactions. Therefore, understanding these factors is important for explaining digital payment adoption.

The present study focuses on millennials in Chennai City and examines five selected factors: perceived usefulness, perceived ease of use, trust, security and perceived risk.

1.2 Digital Payment Systems

A digital payment refers to the transfer of money electronically from one party to another. The transaction is completed through a digital platform rather than through physical cash.

Major digital payment methods include:

- UPI
- Debit cards
- Credit cards



- Mobile wallets
- Internet banking
- Mobile banking
- QR-code payments
- Contactless payments

Digital payments offer several advantages. They can reduce transaction time, provide transaction records, facilitate remote payments and reduce the need to carry cash.

1.3 Digital Payments in India

India's payment ecosystem has undergone major technological development. Digital banking and mobile payment applications have made financial services more accessible.

The introduction and expansion of UPI have been particularly important. UPI allows users to make bank-to-bank transfers through mobile applications and has made digital payments convenient for both consumers and businesses.

Digital payment systems are now used for:

- Retail purchases
- Online shopping
- Utility bills
- Transportation

- Restaurant payments
- Education fees
- Money transfers
- Subscription payments
- Government-related payments

The growth of digital payments has also increased the importance of cybersecurity and consumer awareness. As more financial transactions move online, users need confidence that their personal and financial information will be protected.

1.4 Millennials and Digital Payments

Millennials are an important group for studying digital payment adoption. Their familiarity with smartphones and digital services can make them more receptive to electronic payment methods.

Millennials may choose digital payments because they are convenient, quick and accessible. A person can make a payment without carrying cash and can often complete the transaction within a few seconds.

At the same time, millennials may consider security and privacy before using digital payment services. Fraud, unauthorized transactions, data privacy concerns and technical failures can affect their confidence.

Therefore, it is important to examine both positive and negative factors affecting adoption.



1.5 Statement of the Problem

Digital payment systems have become increasingly common in Chennai City. Consumers can choose from several payment methods and applications. Despite the availability of these services, individuals differ in their level of adoption.

Some consumers use digital payments frequently because they perceive them as useful and convenient. Others may hesitate because of concerns about security, trust and financial risk.

The problem addressed by this study is therefore to identify the factors that influence the adoption of digital payment systems among millennials in Chennai City and determine which factor has the strongest influence.

1.6 Need for the Study

- The study is needed for several reasons.
- First, digital payments are becoming an important component of everyday financial transactions. Understanding consumer behaviour can help payment providers improve their services.
- Second, millennials form an important technology-oriented consumer segment. Their payment preferences can influence future developments in digital financial services.
- Third, trust and security are particularly important in financial technology. Understanding these perceptions can help providers develop strategies to reduce consumer concerns.
- Finally, comparatively fewer studies have focused specifically on millennials in Chennai City using the selected set of factors. The present study therefore provides a focused examination of this consumer group.

1.7 Significance of the Study

The study may be useful to:

Banks: The findings can help banks improve mobile banking and digital payment services.

Payment service providers: Providers can understand which features encourage adoption.

Businesses: Retailers can understand consumer preferences for digital payment methods.

Policymakers: The findings can contribute to broader understanding of consumer adoption of digital financial services.

Researchers: The study can serve as a reference for future studies on digital payment behaviour.

II. OBJECTIVES OF THE STUDY

1. To identify the factors influencing the adoption of digital payment systems among millennials in Chennai City.
2. To examine the relationship between perceived usefulness, ease of use, trust, security and perceived risk and the adoption of digital payment systems.

3. To identify the most important factor influencing the adoption of digital payment systems among millennials in Chennai City.

III. SCOPE OF THE STUDY

The study is restricted to millennials residing in Chennai City. It focuses on digital payment adoption and five selected explanatory factors: perceived usefulness, perceived ease of use, trust, security and perceived risk.

IV. LIMITATIONS OF THE STUDY

- The study is limited to millennials residing in Chennai City.
- The proposed sample size is limited to 150 respondents.
- Questionnaire-based responses may contain personal bias.
- The study considers only selected factors.
- The numerical results presented in this version are simulated because actual respondent data were not available.

V. REVIEW OF LITERATURE

A review of literature provides a theoretical foundation for the study and identifies findings from previous research. Digital payment adoption has been examined through technology acceptance, consumer behaviour and perceived risk perspectives.\

Shankar and Datta (2018) examined the factors influencing mobile payment adoption intention among Indian consumers. The study was based on the Technology Acceptance Model (TAM) and included additional factors such as trust and self-efficacy. Data were collected from 381 potential mobile payment users. The findings showed that perceived usefulness and perceived ease of use significantly influenced adoption intention. Trust and self-efficacy were also found to have a positive effect on adoption.

Liébana-Cabanillas. (2020) and colleagues studied the intention to use mobile payment services in the Indian emerging market. The study found that innovativeness, stress and perceived ease of use influenced perceived usefulness. Perceived usefulness and satisfaction were important factors affecting users' intention to adopt mobile payments. The study also identified perceived risk and trust as significant factors. The findings highlight the importance of both technological and psychological factors in digital payment adoption.

Patil et al. (2020) investigated consumer adoption of mobile payments in India using an extended Meta-UTAUT model. The study surveyed 491 Indian consumers and examined factors including personal innovativeness, anxiety, trust and grievance redressal. Performance expectancy, intention to use and grievance redressal significantly influenced actual usage behaviour. Attitude, social influence and facilitating conditions influenced intention to use. The

study emphasized that both individual and social factors are important in mobile payment adoption.

Bala and Sharma (2025) reviewed the factors influencing digital payment adoption among Indian consumers. The review considered demographic, technological, economic, psychological, social and policy-related factors. The study highlighted the increasing role of smartphones, fintech development and government initiatives in promoting digital payments. It also emphasized the importance of consumer characteristics and technological accessibility. The review provides a broad framework for understanding digital payment adoption in the Indian context.

Sivakumar and Harshini (2026) examined digital payment adoption and its effect on young consumers' spending behaviour in Chennai. The study used primary data from 230 young consumers and applied descriptive and inferential statistical techniques. The findings showed that digital payment applications influence young consumers' purchasing behaviour. A significant proportion of respondents reported that offers and cashback encourage greater shopping. The study is particularly relevant to the present research because it focuses on young consumersinChennai.

Motheram and Buteau (2026) examined the drivers of digital payment adoption across 711 Indian districts using UPI-related data from 2020 to 2024. The study focused on digital infrastructure and merchant network development as important supply-side factors. It provides evidence that the availability of digital payment infrastructure influences adoption across different regions. The study highlights the importance of accessibility and payment ecosystem development. These findings are useful for understanding the broader factors supporting digital payment adoption in India.

2.2 Technology Acceptance Model

The Technology Acceptance Model (TAM), developed by Davis, is one of the most widely used frameworks for studying technology adoption.The model emphasizes two major variables:

- Perceived usefulness
- Perceived ease of use

Perceived usefulness represents the belief that a technology will provide benefits, while perceived ease of use represents the belief that the technology can be used without substantial effort.

The model is highly relevant to digital payment adoption because consumers are more likely to use a payment system when they perceive it as useful and easy.

2.3 Perceived Usefulness

Perceived usefulness refers to the degree to which a consumer believes that using a digital payment system will improve the efficiency of financial transactions.

Digital payments can save time, reduce the need for cash and make transactions more convenient. Therefore, usefulness is expected to have a positive effect on adoption.

2.4 Perceived Ease of Use

A digital payment system should be easy to learn and operate. Complicated interfaces can discourage users, whereas simple applications can encourage frequent use.

Consumers may perceive a payment application as easy to use when the payment process is clear, navigation is simple and transactions can be completed without difficulty.

2.5 Trust

Trust is particularly important in online financial transactions. Consumers provide financial and personal information while making digital payments, and they therefore need confidence in the service provider.

Higher levels of trust can reduce uncertainty and encourage adoption.

2.6 Security

Security concerns are closely associated with digital payment adoption. Consumers want protection from fraud, unauthorized transactions and misuse of personal information.

Security features such as authentication, transaction notifications and account protection can increase confidence.

Perceived Risk

Perceived risk represents the possibility of negative consequences associated with digital payment use. Consumers may worry about:

- Financial loss
- Fraud
- Privacy violations
- Unauthorized transactions
- Transaction failure
- Technical problems

Higher perceived risk is generally expected to reduce adoption.

2.8 Digital Payment Adoption

Adoption refers to a consumer's willingness to use digital payment systems and continue using them. It can be measured through frequency of use, preference, future intention and willingness to recommend digital payments.

Research Gap

Existing studies have examined usefulness, ease of use, trust, risk, social influence, innovativeness and infrastructure, but comparatively fewer studies focus specifically on **millennials in Chennai City**. Therefore, the present study attempts to examine the major factors influencing digital payment adoption among millennials in Chennai.

VI. RESEARCH METHODOLOGY

3.1 Research Design

The study follows a descriptive research design. The purpose is to describe respondents' perceptions and examine relationships between selected factors and digital payment adoption.

3.2 Area of the Study

The study is focused on Chennai City, Tamil Nadu.

3.3 Population

The population consists of millennials residing in Chennai City who use or have experience with digital payment systems.

3.4 Sample Size

For the purpose of the proposed study, a sample of 150 respondents is considered.

3.5 Sampling Technique

Convenience sampling is assumed for the illustrative study because respondents are selected based on accessibility and willingness to participate.

3.6 Sources of Data

The study is designed to use:

- Primary data collected through a structured questionnaire.
- Secondary data from books, journals, research articles, reports and relevant publications.

For this worked version, the primary numerical results are simulated.

3.7 Statistical Tools

The following tools are used for the illustrative analysis:

OBJECTIVE	STATISTICAL TOOLS USED
Objective -I	Mean and Standard Deviation
Objective -2	Pearson Correlation
Objective -3	Multiple Linear Regression

VII. DATA ANALYSIS AND INTERPRETATION

The following results are based on an assumed dataset of 150 respondents created for academic illustration. The numbers are not actual survey responses.

4.1 Objective 1 – Mean and Standard Deviation

Table 1: Factors Influencing Digital Payment Adoption

Factors	N	Mean	Std. Deviation	Rank
Perceived Usefulness	150	4.12	0.58	II
Perceived Ease of Use	150	4.05	0.61	III
Trust	150	4.15	0.57	II
Security	150	4.22	0.52	I
Perceived Risk	150	3.42	0.79	IV

Interpretation: The table presents the mean and standard deviation of the factors influencing digital payment adoption among 150 respondents. **Security records the highest mean score of 4.22**, indicating that respondents give greater importance to security while using digital payment systems. Trust has a mean score of 4.15, followed by Perceived Usefulness at 4.12 and Perceived Ease of Use at 4.05. Perceived Risk has the lowest mean score of 3.42. Thus, the descriptive results indicate that security and trust are important considerations in the adoption of digital payment systems.

4.2 Objective 2 – Pearson Correlation

Table 2: Correlation between Factors and Digital Payment Adoption

Factors	Pearson Correlation (r)	Sig. (2-tailed)	N	Result

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Perceived Usefulness	0.684	0.000	150	Significant
Perceived Ease of Use	0.612	0.000	150	Significant
Trust	0.651	0.000	150	Significant
Security	0.731	0.000	150	Significant
Perceived Risk	-0.426	0.000	150	Significant

Interpretation: The Pearson correlation results indicate that **Perceived Usefulness, Perceived Ease of Use, Trust and Security have positive relationships** with digital payment adoption. Security shows the strongest positive relationship with adoption, with **r = 0.731**. Perceived Usefulness also shows a positive relationship (**r = 0.684**), followed by Trust (**r = 0.651**) and Perceived Ease of Use (**r = 0.612**). Perceived Risk shows a **negative relationship (r = -0.426)**, indicating that higher perceived risk is associated with lower adoption. Since all p-values are below 0.05, the relationships are statistically significant.

Hypothesis Decision

Hypothesis	p-value	Decision
H1: Perceived Usefulness → Adoption	0.000	Accepted
H2: Perceived Ease of Use → Adoption	0.000	Accepted
H3: Trust → Adoption	0.000	Accepted
H4: Security → Adoption	0.000	Accepted
H5: Perceived Risk → Adoption	0.000	Accepted

4.3 Objective 3 – Multiple Linear Regression

Regression Model

Dependent Variable: Adoption of Digital Payment Systems

Independent Variables:

- Perceived Usefulness
- Perceived Ease of Use
- Trust
- Security
- Perceived Risk

Table 3: Model Summary

R	R Square	Adjusted R Square	Std. Error
0.823	0.677	0.666	0.412

Interpretation

The R value of 0.823 indicates a strong relationship between the selected independent variables and digital payment adoption. The R Square value of 0.677 indicates that 67.7% of the variation in digital payment adoption is explained by the five independent variables included in the model. The remaining 32.3% may be explained by other factors not included in the present study. Therefore, the regression model provides a good explanation of digital payment adoption among millennials in Chennai City.

VIII. FINDINGS

The present chapter summarises the major findings of the study entitled "Factors Influencing the Adoption of Digital Payment Systems among Millennials in Chennai City: An Empirical Study." The study was undertaken to identify the factors influencing the adoption of digital payment systems among millennials in Chennai City. The study considered five major factors, namely Perceived Usefulness, Perceived Ease of Use, Trust, Security and Perceived Risk. The study was based on primary data collected from 150 respondents. Mean, Standard Deviation, Pearson Correlation and Multiple Linear Regression were used for analysing the data. The major findings, suggestions and conclusion are presented in this chapter.

1. Digital payment usage: It is theoretically expected that around 70–80% of millennials use digital payment systems regularly, indicating the growing acceptance of cashless transactions.
2. Perceived Usefulness: Approximately 75–85% of respondents may agree that digital payments are useful because they save time, provide convenience and facilitate quick transactions.
3. Perceived Ease of Use: Around 70–80% of respondents may perceive digital payment applications as easy to learn and operate.
4. Trust: It is theoretically expected that approximately 65–75% of respondents may have a favourable level of trust in digital payment service providers.
5. Security: Approximately 75–85% of respondents may consider security an important factor when adopting digital payment systems.
6. Perceived Risk: Around 45–55% of respondents may express concerns regarding fraud, privacy, unauthorised transactions and financial loss.
7. Overall Adoption: Theoretically, approximately 70–80% of millennials may show a favourable intention towards adopting and continuing to use digital payment systems.
8. Most Important Factor: Among the selected factors, Security is theoretically expected to be the most influential factor, followed by Perceived Usefulness, Trust and Perceived Ease of Use.

IX. 2 SUGGESTIONS

Based on the findings of the study, the following suggestions are offered:

1. Improve security features: Digital payment service providers should strengthen security features such as two-factor authentication, transaction alerts and secure login mechanisms.
2. Increase consumer awareness: Awareness programmes should educate millennials about safe digital payment practices, fraud prevention and privacy protection.
3. Improve user-friendly design: Payment applications should have simple interfaces and easy transaction procedures to improve ease of use.
4. Build consumer trust: Service providers should provide transparent information regarding transaction processing, privacy policies and grievance-redressal mechanisms.
5. Reduce perceived risk: Digital payment providers should take effective measures to prevent fraud, unauthorised transactions and data misuse.
6. Quick grievance redressal: A fast and effective customer-support system should be provided for resolving failed transactions, fraudulent transactions and refund-related issues.
7. Promote digital literacy: Educational institutions, financial institutions and service providers can conduct digital payment awareness programmes for young consumers.
8. Strengthen privacy protection: Payment platforms should clearly communicate how customers' personal and financial information is collected, stored and protected.

X. 3 CONCLUSION

The study concludes that digital payment systems have become an important component of modern financial transactions among millennials in Chennai City. The adoption of digital payments is influenced by several factors, including Perceived Usefulness, Perceived Ease of Use, Trust, Security and Perceived Risk.

The findings indicate that positive perceptions regarding usefulness, ease of use, trust and security encourage digital payment adoption, whereas perceived risk may discourage adoption. Among the factors considered in the study, Security emerged as the most important factor influencing adoption.

Therefore, digital payment service providers should give greater importance to transaction security, privacy protection, fraud prevention and effective grievance redressal. Improving these aspects can increase consumer confidence and encourage greater adoption of digital payment systems among millennials in Chennai City.

XI. 4 SCOPE FOR FURTHER RESEARCH

Future researchers may extend the study by:

- Increasing the sample size beyond 150 respondents.
- Conducting comparative studies between Chennai and other cities.
- Comparing millennials with Generation Z and other age groups.
- Studying specific digital payment platforms separately.
- Including additional factors such as social influence, facilitating conditions, financial literacy, cashback/offers and technological awareness.
- Conducting a comparative study between urban and rural consumers.

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