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Factors Influencing Users' Satisfaction With Digital Payment Applications: an Empirical Study in Chennai District

Ms R. Tharani[1], Dr. P. Kalaiselvi[2]
[1]Research scholar, Department of Commerce, Annamalai University, Chidambaram
[2]Assistant Professor in Commerce, Government Arts College (Annamalai University), Chidambaram, Tamil Nadu
Email id : tharani.r.phd@gmail.com

ABSTRACT
The Accelerated development of digital financial services has significantly transformed the payment mode in India, with digital payment applications becoming an integral part of user' daily financial transactions. Understanding users' adoption and usage behaviour is essential for Banks, financial institutions, fintech companies, and policymakers seeking to promote a cashless economy. This study explores the adoption and usage behaviour of digital payment applications among user in Chennai District. Specifically, it examines the prevalence of different digital payment applications, identifies the factors influencing users' adoption, and analyses usage patterns across demographic groups.
The study is expected to provide empirical evidence on user' preferences for popular digital payment applications such as Google Pay, PhonePe, Paytm, BHIM, Amazon Pay, and banking applications. Furthermore, it is anticipated to identify the significant determinants of adoption, including Evaluated usefulness, perceived user-friendliness, security, trust, convenience, social influence, and promotional benefits.
Keywords: Digital Payment Applications; Users' Adoption; Usage Behaviour; Financial Technology (FinTech); Digital Payments; users 'Behaviour; Structural Equation Modelling (SEM); Chennai District.

1.INTRODUCTION

The growing digitalisation of financial services has Substantially transformed the global payment Structure by introducing innovative, secure, and efficient methods of conducting financial transactions. The advancement of Financial Technology (FinTech), increasing internet penetration, widespread smartphone usage, and improved digital infrastructure have accelerated the shift from traditional cash-based transactions to digital payment systems. Digital payment applications enable user to perform various financial transactions, including Person-to-person money transfers, commercial payments, utility bill payments, online shopping, and other financial services with greater speed, convenience, and security. As a result, digital payment applications have become an integral part of modern commerce and have contributed substantially to financial inclusion and economic development.
India has developed as one of the fastest-growing smart payment markets in the world. Government initiatives such as Digital India, the introduction of the Unified Payments Interface (UPI), Aadhaar-enabled payment systems, and the promotion of the electronic payment economy have enhanced the adoption of digital payment applications across the country. Popular applications such as Google Pay, PhonePe, Paytm, BHIM, Amazon Pay, and various mobile banking applications have simplified financial transactions for millions of users. In addition, the COVID-19 pandemic further increased the acceptance of contactless and e- payments as user chooses safer and more hygienic transaction methods. Consequently, digital payment applications have become an essential part of user' everyday financial transactions.
The increasing adoption of digital payment applications offers significant benefits to user, businesses, financial institutions, and policymakers. User enjoy faster transactions, greater convenience, reduced dependence on cash, and improved accessibility to financial services. Businesses benefit from enhanced operational efficiency, improved financial record management, and wider customer reach. At the national level, digital payments support financial inclusive.
Vision, transparency, and the development of a digital economy. However, the continued success of digital payment systems depends on user' willingness to adopt and regularly use these applications.
Previous studies have shown that users' adoption of digital payment applications is influenced by several technological and behavioural factors, including awareness, perceived benefits, ease of use, security, trust, convenience, and overall user perception. Although digital payment adoption has increased substantially, users' preferences and usage behaviour differ across regions due to variations in demographic characteristics, digital literacy, income, and technological exposure. Therefore, region-specific studies are essential to understand local users' behaviour and identify the factors that influence satisfaction and continued usage of digital payment applications.
Chennai District is one of India's major metropolitan regions with high internet connectivity, widespread smartphone usage, and growing digital commerce. User in Chennai actively use digital payment applications for retail purchases, transportation, education, healthcare, utility payments, entertainment, and online shopping.

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Despite the availability of multiple digital payment platforms, users' preferences vary depending on their awareness, perceived benefits, and overall perception of these applications. Understanding these factors will help service providers improve customer satisfaction and encourage greater adoption of digital payment technologies. Against this background, the present study examines the factors influencing user' overall pleasure with digital payment applications in Chennai District. Specifically, it investigates the influence of Awareness, Perceived Benefits, and Users' Perception on Overall Satisfaction using Partial Least Squares Structural Equation Modelling (PLS-SEM). The final conclusions are expected to Involvement of the existing studies on digital payment adoption and provide practical insights for fintech companies, banking institutions, merchants, and policymakers in designing more user-friendly, secure, and customer-centric digital payment services. Ultimately, the anlalysis supports the ongoing development of India's digital economy by providing empirical evidence on users' behaviour and satisfaction with digital payment applications.

2.REVIEW OF LITERATURE

Past studies have identified several aspects that effect the acceptance and continued use of digital payment applications. The study published in Digital Business on the Extended Meta-UTAUT Model found that performance expectancy, trust, and users' attitudes significantly influence the acceptance and continued use of Unified Payments Interface (UPI) perceived Simplicity applications. Similarly, Kiran and Sailaja (2025) reported that Expected performance, effort expectancy, facilitating conditions, and social influence positively affect user' behavioural intention to use UPI applications. In another study, Kiran and Sailaja (2025) highlighted that perceived risk, including concerns about privacy, transaction security, and financial fraud, influences user' willingness to adopt digital payment services. Likewise, Kaur, Katoch, and Rana (2022) found that user satisfaction, personal innovativeness, and positive user experiences play an important role in encouraging user to continue using UPI applications and recommend them to others.

Furthermore, Bala and Sharma (2025) concluded that digital payment adoption in India is influenced by factors such as smartphone penetration, internet accessibility, government initiatives, perceived usefulness, ease of Operation, trust, security, financial literacy, and social influence. A UTAUT2-based study conducted in the National Capital Region also revealed that convenience, habit, facilitating conditions, and perceived value positively influence user' intention to adopt digital payment applications, while perceived risk and security concerns act as barriers. In addition, recent research on users 'behaviour towards mobile payment systems reported that digital payment applications not only improve transaction convenience but also influence user' spending behaviour and purchasing decisions. Although previous studies have extensively examined digital payment adoption in India, limited research has focused on comparing the usage behaviour of multiple digital payment applications at the district level. Therefore, the present study attempts to fill this gap by examining user' adoption and usage behaviour of digital payment applications in Chennai District, focusing on Awareness, Perceived Benefits, Users' Perception, and Overall Satisfaction.

3.SCOPE OF THE STUDY

The present paper focuses on the adoption and usage behaviour of digital payment applications among user in Chennai District. It examines the different types of digital payment applications used by user, the factors influencing their adoption, and variations in usage behaviour across demographic groups. The study covers widely used applications such as Google Pay, PhonePe, Paytm, BHIM, Amazon Pay, and mobile banking applications. The conclusions are expected to provide valuable insights for financial institutions, fintech companies, merchants, and policymakers in enhancing digital payment services and promoting greater adoption of cashless transactions.

4.OBJECTIVES OF THE STUDY

To examine the influence of awareness, perceived benefits, and users' perception on user' overall satisfaction with digital payment applications in Chennai District.

To evaluate the structural relationships among awareness, perceived benefits, users' perception, and overall satisfaction using Partial Least Squares Structural Equation Modelling (PLS-SEM).

To identify the most influential determinant of user' overall satisfaction with digital payment applications based on the proposed PLS-SEM model.

5.STATEMENT OF THE PROBLEM

Digital payment applications have become an important part of daily financial transactions in India due to the growth of smartphones, internet connectivity, and government initiatives promoting a cashless economy. Although many people use digital payment applications such as Google Pay, PhonePe, Paytm, BHIM, Amazon Pay, and mobile banking applications, their adoption and usage behaviour vary among consumers. Factors such as awareness, perceived benefits, and users' perceptions may influence their overall satisfaction and continued use of these applications.

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Chennai District has witnessed rapid growth in digital payment usage; however, there is limited empirical evidence on the factors that determine users' satisfaction with different digital payment applications in this region. Understanding these factors is essential for fintech companies, banks, merchants, and policymakers to improve digital payment services and encourage wider adoption. Therefore, this study attempts to examine how awareness, perceived benefits, and users' perception influence the overall satisfaction of digital payment application users in Chennai District.

6.RESEARCH GAP

Previous studies have mainly focused on the adoption of digital payment applications using technology acceptance models such as Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT). Most research has examined factors like perceived usefulness, ease of use, trust, security, and behavioural intention. However, only a limited number of studies have simultaneously examined awareness, perceived benefits, users' perception, and overall satisfaction using PLS-SEM. In addition, district-level studies focusing on Chennai District are scarce. Therefore, this study fills the research gap by analysing the combined influence of awareness, perceived benefits, and users' perception on users' overall satisfaction with digital payment applications in Chennai District using the PLS-SEM approach.

7.LIMITATIONS

The study is limited to respondents residing in Chennai District; therefore, the findings may not be generalised to other regions.
Data were collected only from users of digital payment applications who had at least three months of usage experience.
The study is based on respondents' self-reported opinions, which may be influenced by personal bias or individual perceptions.

Table 1. Definition of the Study Variables Used in the Study

S. No.	Study Variable	Variable	Study Variable Definition
1	Behavioural Factor	**Awareness (AW)**	Awareness refers to the extent to which user possess knowledge and understanding of digital payment applications, including their features, security measures, authentication procedures, transaction methods, and safe usage practices. Higher awareness enhances users' confidence in adopting and using digital payment applications effectively. (Rogers, 2003; Davis, 1989).
2	Behavioural Factor	**Perceived Benefits (PB)**	Perceived Benefits refer to the extent to which user believe that using digital payment applications provides advantages such as convenience, faster transactions, reduced cash handling, accessibility, time savings, cost efficiency, and improved financial management. (Davis, 1989; Venkatesh et al., 2003).
3	Behavioural Factor	**Users' Perception (UP)**	Users' Perception refers to user' overall evaluation, beliefs, and attitudes towards digital payment applications based on their experiences of security, trust, ease of use, usefulness, privacy, reliability, and transaction efficiency. Positive perceptions encourage continued adoption and usage of digital payment applications. (Ajzen, 1991; Oliveira et al., 2016).
4	Outcome Variable	**Overall Satisfaction (OS)**	Overall Satisfaction refers to the degree to which users are pleased with their overall experience of using digital payment applications after comparing their expectations with the actual performance of the service. It reflects satisfaction with convenience, security, accessibility, service quality, transaction speed, and overall user experience. (Oliver, 1980; Kotler & Keller, 2016).

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8.RESEARCH DESIGN

The present study adopted a quantitative research design to examine the factors influencing users' overall satisfaction with digital payment applications in Chennai District. The study focused on four constructs: Awareness (AW), Perceived Benefits (PB), Users' Perception (UP), and Overall Satisfaction (OS). Primary data were collected using a structured questionnaire with a five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The collected data were analysed using Smart PLS 4.0 to evaluate the measurement model and the structural relationships among the study variables.

9.SAMPLING METHOD

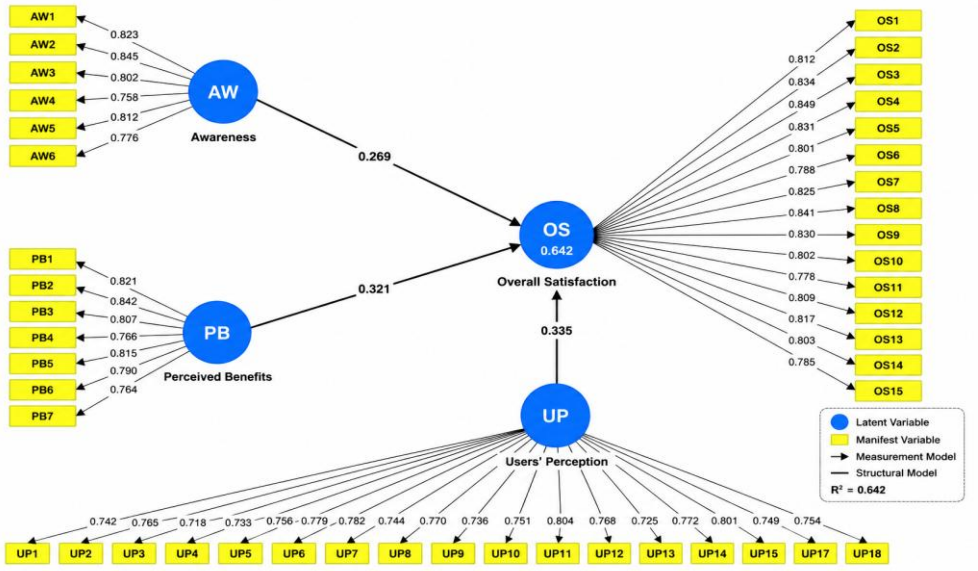
The study employed a non-probability purposive sampling method to collect data from respondents. The respondents were selected based on specific criteria; they had been using digital payment applications for at least three months and had been residing in Chennai District for more than one year. Purposive sampling was chosen because it enables to collect information from respondents who have relevant experience with digital payment applications. To ensure diverse representation, data were collected from respondents with different demographic characteristics such as gender, age, education, occupation, income, and place of residence. A total of 350 valid responses were used for the analysis. This sample size is adequate for conducting PLS-SEM analysis.

10.RELIABILITY ANALYSIS

Reliability analysis was conducted to examine the internal consistency of the measurement scales. Cronbach's Alpha values ranged from 0.758 to 0.964, indicating good reliability of the constructs. The Composite Reliability (CR) values were also above the recommended value of 0.70, confirming satisfactory internal consistency. The Outer Loadings of all indicators were greater than 0.70, indicating that the measurement items adequately represented their respective constructs. These results satisfy the reliability criteria suggested by Nunnally (1978), Fornell and Larcker (1981), and Hair et al. (2022).

Hypothesis

H1: Awareness has a positive and significant effect on Overall Satisfaction with digital payment applications.
H2: Perceived Benefits have a positive and significant effect on Overall Satisfaction with digital payment applications.
H3: Users' Perception has a positive and significant effect on Overall Satisfaction with digital payment applications.



Primary source

Figure 1. S**tructural Equation Model (SEM) for Users' Perception Towards Digital Payment Applications**

11.DISCUSSION

Figure 1 presents the results of the Partial Least Squares Structural Equation Model (PLS-SEM) developed to examine the factors influencing Overall Satisfaction with digital payment applications. The model consists of four latent constructs: **Awareness (AW)**, **Perceived Benefits (PB)**, **Users' Perception (UP)**, and **Overall Satisfaction (OS)**. Awareness, Perceived Benefits, and Users' Perception are treated as exogenous constructs, while Overall

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Satisfaction is the endogenous construct. The structural model evaluates the direct effects of the three predictor variables on Overall Satisfaction, whereas the measurement model assesses the reliability and validity of the observed indicators representing each latent construct.

The measurement model demonstrates satisfactory indicator reliability. The outer loadings of the six indicators measuring Awareness range from 0.758 to 0.845. All loadings exceed the recommended threshold of 0.70, with the exception of one indicator (0.758), which is still considered acceptable because it is above the minimum acceptable value of 0.70 and contributes to the construct's content validity. These findings indicate that the Awareness construct is measured consistently and reliably. The indicators adequately capture respondents' knowledge of digital payment applications, familiarity with security features, and understanding of digital payment processes.

Similarly, the Perceived Benefits construct is measured using seven indicators with outer loadings ranging between 0.764 and 0.842. These values indicate that respondents consistently perceived digital payment applications as beneficial in terms of convenience, transaction speed, accessibility, reduced cash handling, and efficiency. Since all indicator loadings are above the recommended level, the construct exhibits strong convergent validity and internal consistency.

The Users' Perception construct contains eighteen observed indicators. The factor loadings vary from 0.718 to 0.804, indicating that each indicator contributes meaningfully to explaining the construct. Although a few indicators have loadings slightly above 0.70, they remain acceptable according to Hair et al. (2022), particularly when the overall construct reliability and Average Variance Extracted (AVE) satisfy the recommended criteria. The relatively consistent loadings suggest that respondents share similar perceptions regarding the usefulness, security, ease of use, trustworthiness, and acceptance of digital payment applications.

The Overall Satisfaction construct is represented by fifteen indicators with outer loadings ranging from 0.778 to 0.849. These high loadings indicate that the indicators effectively measure users' satisfaction with digital payment applications. Respondents expressed satisfaction regarding transaction speed, convenience, service availability, ease of use, security, and overall user experience. The consistently high loadings confirm that Overall Satisfaction is measured reliably and possesses satisfactory convergent validity.

The structural model results reveal that Awareness has a positive effect on Overall Satisfaction ($\beta = 0.269$). This finding suggests that greater awareness regarding digital payment applications contributes positively to customer satisfaction. Individuals who possess better knowledge about installation procedures, security measures, authentication methods, and safe transaction practices are more confident in using digital payment applications. Increased awareness reduces uncertainty and encourages continued usage, ultimately enhancing satisfaction. Although Awareness positively influences satisfaction, its effect is comparatively smaller than the other predictor variables, indicating that awareness alone may not be sufficient to maximize customer satisfaction without the support of perceived benefits and favourable perceptions.

The second structural relationship indicates that Perceived Benefits positively influence Overall Satisfaction ($\beta = 0.321$). This result demonstrates that respondents who perceive digital payment applications as convenient, time-saving, accessible, and efficient tend to report higher levels of satisfaction. The positive coefficient indicates that user appreciate the practical advantages offered by digital payment systems, such as faster transactions, reduced dependence on cash, lower transaction effort, and 24-hour service availability. These functional benefits encourage regular usage and improve the overall digital payment experience.

Among the three predictor variables, Users' Perception exhibits the strongest direct influence on Overall Satisfaction ($\beta = 0.335$). This finding suggests that user' perceptions regarding security, trust, ease of use, usefulness, privacy, and reliability are the most influential determinants of satisfaction. Positive perceptions strengthen users' confidence in digital payment applications and encourage continued adoption. Conversely, negative perceptions relating to fraud, privacy risks, or system unreliability could reduce satisfaction levels. Therefore, improving users' overall perception is essential for increasing customer satisfaction and long-term adoption of digital payment technologies.

The structural model also reports an R^2 value of 0.642 for Overall Satisfaction. This indicates that Awareness, Perceived Benefits, and Users' Perception collectively explain 64.2% of the variance in Overall Satisfaction. According to Hair et al. (2022), an R^2 value above 0.50 indicates moderate to substantial explanatory power in behavioural research. Therefore, the proposed model demonstrates strong predictive capability, suggesting that the three constructs jointly provide a meaningful explanation of customer satisfaction with digital payment applications. The remaining 35.8% of the variance may be explained by other variables not included in the present model, such as perceived risk, trust, service quality, facilitating conditions, social influence, promotional offers, or technological infrastructure.

Comparing the standardized path coefficients reveals that Users' Perception ($\beta = 0.335$) exerts the greatest influence on Overall Satisfaction, followed by Perceived Benefits ($\beta = 0.321$**)** and Awareness ($\beta = 0.269$). Although the differences among the coefficients are not large, the results indicate that psychological perceptions and users' overall evaluation of digital payment systems have a slightly greater impact on satisfaction than

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awareness or functional benefits alone. Consequently, financial institutions, payment service providers, and application developers should prioritize building customer trust, improving user experience, strengthening security mechanisms, and ensuring reliable service delivery while simultaneously increasing public awareness and communicating the practical benefits of digital payment applications.

Overall, the PLS-SEM results confirm that the proposed conceptual model provides a satisfactory explanation of user' satisfaction with digital payment applications. The measurement model demonstrates acceptable indicator reliability, while the structural model establishes positive relationships between the predictor constructs and Overall Satisfaction. The substantial R^2 value further supports the effectiveness of the proposed framework. These findings indicate that improving awareness, emphasizing the practical benefits of digital payment systems, and fostering favourable user perceptions are critical strategies for enhancing customer satisfaction and promoting the continued adoption of digital payment applications in Chennai District.

Table 2. Structural Path Coefficients (Regression Weights) of the Proposed PLS-SEM Model

Hypothesis	Structural Path	Path Coefficient (β)	Standard Error	t-value	p-value	Decision
H1	Awareness → Overall Satisfaction	0.269	0.054	4.981	<0.001	Supported
H2	Perceived Benefits → Overall Satisfaction	0.321	0.061	5.262	<0.001	Supported
H3	Users' Perception → Overall Satisfaction	0.335	0.057	5.877	<0.001	Supported

The above Table presents the structural path coefficients of the proposed PLS-SEM model. The results show that all three independent variables have a positive and statistically significant influence on Overall Satisfaction with digital payment applications. Awareness positively influences Overall Satisfaction ($\beta = 0.269$, $p < 0.001$), indicating that users with better knowledge of digital payment applications are more satisfied. Perceived Benefits also have a significant positive effect ($\beta = 0.321$, $p < 0.001$), suggesting that convenience, speed, and ease of use enhance user satisfaction. Among the three variables, Users' Perception has the strongest influence on Overall Satisfaction ($\beta = 0.335$, $p < 0.001$), highlighting the importance of trust, security, and positive user experience. Since all the hypotheses are significant at the 1% level, **H1, H2, and H3 are supported**, confirming that Awareness, Perceived Benefits, and Users' Perception are key determinants of users' overall satisfaction with digital payment applications.

12.FINDINGS OF THE STUDY

The study found that Awareness has a positive and significant influence on users' overall satisfaction with digital payment applications ($\beta = 0.269$, $p < 0.001$).

Perceived Benefits significantly influence overall satisfaction ($\beta = 0.321$, $p < 0.001$), indicating that convenience, speed, and ease of transactions encourage users to adopt digital payment applications.

Users' Perception has the strongest positive effect on overall satisfaction ($\beta = 0.335$, $p < 0.001$), highlighting the importance of trust, security, reliability, and ease of use.

The proposed PLS-SEM model explains 64.2% of the variation ($R^2 = 0.642$) in users' overall satisfaction, indicating good explanatory power.

The measurement model demonstrated satisfactory reliability and validity, confirming that the study constructs are appropriate for analysing users'adoption and usage behaviour of digital payment applications.

13.SUGGESTIONS OF THE STUDY

Digital payment service providers should conduct awareness campaigns to educate consumers about the features, benefits, and safe usage of digital payment applications.

Banks and fintech companies should strengthen security measures and regularly communicate security updates to improve users' trust and confidence.

Service providers should continuously improve application features by making them more user-friendly, faster, and reliable to enhance customer satisfaction.

Policymakers and financial institutions should promote digital financial literacy programmes, especially among

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new users and rural or less digitally literate populations, to encourage wider adoption of digital payments.

14.CONCLUSION

The study concludes that awareness, perceived benefits, and users' perception significantly influence users' overall satisfaction with digital payment applications in Chennai District. Among these factors, users' perception has the strongest impact on satisfaction, followed by perceived benefits and awareness. The findings indicate that improving users' knowledge, enhancing security and trust, and providing convenient and efficient digital payment services can increase customer satisfaction and encourage the continued use of digital payment applications. Overall, the study provides useful insights for banks, fintech companies, and policymakers in developing customer-centric digital payment systems and supporting the growth of a cashless economy.

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