

## Factors Influencing Consumer Adoption of Mobile Payment Systems in the Digital Economy

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### ABSTRACT

*The rapid growth of the digital economy has accelerated the development of mobile payment systems as an innovative financial technology that enhances transaction efficiency, convenience, and accessibility. Despite the increasing availability of mobile payment services, consumer adoption remains uneven across different demographic and economic contexts. Therefore, understanding the factors that influence consumers' intentions to adopt mobile payment systems has become an important research issue. This study aims to examine the effects of perceived usefulness, perceived ease of use, trust, perceived security, social influence, mobility, and compatibility on consumers' behavioral intentions to adopt mobile payment systems. The study employs a quantitative research approach using a survey method. Data were collected from 300 respondents who are familiar with mobile payment services and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings reveal that all proposed factors significantly influence behavioral intention to adopt mobile payment systems. Among the examined variables, perceived usefulness emerged as the strongest predictor, followed by trust and compatibility. The results indicate that consumers are more likely to adopt mobile payment technologies when they perceive them as beneficial, secure, trustworthy, easy to use, compatible with their lifestyles, and socially supported. The model explains a substantial proportion of variance in behavioral intention, demonstrating its robustness in explaining consumer adoption behavior. This study contributes to the literature on financial technology adoption and provides practical implications for mobile payment providers, policymakers, and financial institutions seeking to enhance digital payment adoption in the digital economy.*

**Keywords:** *Mobile Payment, Digital Economy, Consumer Adoption, Financial Technology, Behavioral Intention, Technology Acceptance Model.*

### ABSTRACT

Pertumbuhan pesat ekonomi digital telah mendorong perkembangan sistem pembayaran seluler (mobile payment) sebagai inovasi teknologi keuangan yang mampu meningkatkan efisiensi, kenyamanan, dan aksesibilitas transaksi. Meskipun layanan mobile payment semakin tersedia dan berkembang, tingkat adopsi konsumen masih menunjukkan variasi yang signifikan pada berbagai kelompok demografis dan kondisi ekonomi. Oleh karena itu, pemahaman mengenai faktor-faktor yang memengaruhi niat konsumen untuk mengadopsi sistem mobile payment menjadi isu penelitian yang penting. Penelitian ini bertujuan untuk menganalisis pengaruh perceived usefulness, perceived ease of use, trust, perceived security, social influence, mobility, dan compatibility terhadap niat perilaku konsumen dalam mengadopsi sistem mobile payment. Penelitian menggunakan pendekatan kuantitatif dengan metode survei. Data dikumpulkan dari 300 responden yang mengenal layanan mobile payment dan dianalisis menggunakan Partial Least Squares Structural Equation Modeling (PLS-SEM). Hasil penelitian menunjukkan bahwa seluruh variabel yang diusulkan berpengaruh signifikan terhadap niat perilaku penggunaan mobile payment. Di antara seluruh

faktor yang diuji, *perceived usefulness* menjadi prediktor paling dominan, diikuti oleh *trust* dan *compatibility*. Temuan ini menunjukkan bahwa konsumen cenderung mengadopsi teknologi *mobile payment* apabila dianggap bermanfaat, aman, terpercaya, mudah digunakan, sesuai dengan gaya hidup, serta didukung oleh lingkungan sosial. Model penelitian mampu menjelaskan sebagian besar variasi niat perilaku konsumen, sehingga menunjukkan kemampuan prediksi yang kuat. Penelitian ini memberikan kontribusi teoritis pada literatur adopsi teknologi keuangan serta implikasi praktis bagi penyedia layanan pembayaran digital, lembaga keuangan, dan pembuat kebijakan dalam meningkatkan penggunaan pembayaran digital di era ekonomi digital.

**Kata kunci** : *Mobile Payment*, *Ekonomi Digital*, *Adopsi Konsumen*, *Teknologi Keuangan*, *Niat Perilaku*, *Technology Acceptance Model*.

## INTRODUCTION

The advancement of information and communication technologies (ICTs) has fundamentally transformed the global economic landscape, giving rise to what is commonly referred to as the digital economy. The digital economy is characterized by the extensive use of digital technologies in economic activities, enabling individuals, businesses, and governments to interact and conduct transactions more efficiently than ever before. Among the various technological innovations that have emerged in recent decades, mobile payment systems represent one of the most significant developments in digital finance. Mobile payment systems allow consumers to perform financial transactions through mobile devices such as smartphones and tablets, thereby eliminating many of the limitations associated with traditional payment methods. The increasing penetration of mobile devices and internet connectivity has accelerated the growth of mobile payment services worldwide, making them an integral component of modern economic systems (Dahlberg et al., 2015).

Mobile payment systems offer numerous advantages to consumers and businesses. For consumers, these systems provide convenience, flexibility, accessibility, and transaction efficiency. Users can conduct financial transactions regardless of location and time constraints, reducing reliance on physical cash and traditional banking infrastructure. For businesses, mobile payment technologies facilitate faster transaction processing, lower operational costs, enhanced customer experiences, and increased participation in electronic commerce. Governments and financial institutions also recognize the potential of mobile payments to promote financial inclusion, improve transparency, and support economic growth through the development of cashless societies (Dahlberg et al., 2015; Kim et al., 2010).

The rapid growth of mobile commerce has further strengthened the relevance of mobile payment systems in the digital economy. Mobile commerce, commonly known as m-commerce, refers to commercial transactions conducted through mobile devices and wireless networks. As consumers increasingly engage in online shopping, digital service subscriptions, and mobile banking activities, the demand for secure and efficient payment solutions continues to expand. Mobile payment systems serve as a critical infrastructure supporting these activities by enabling seamless transactions between consumers and merchants. Consequently, many technology companies, financial institutions, and telecommunication providers have invested heavily in developing and promoting mobile payment platforms. Despite these efforts, however, consumer adoption rates have often remained below expectations in many countries,

creating a gap between technological availability and actual usage behavior (Schierz et al., 2010).

The discrepancy between the availability of mobile payment technologies and their adoption by consumers has attracted considerable attention from researchers and practitioners. While technological infrastructure continues to improve, many consumers remain hesitant to adopt mobile payment services. This situation suggests that technological innovation alone is insufficient to ensure widespread acceptance. Instead, consumer adoption is influenced by a complex combination of technological, psychological, social, and environmental factors. Understanding these factors is essential for organizations seeking to enhance the acceptance and utilization of mobile payment systems in increasingly competitive digital markets (Shin, 2010).

One of the most influential theoretical frameworks used to explain technology adoption behavior is the Technology Acceptance Model (TAM), developed by Davis (1989). Although originally designed to explain information system adoption, TAM has been widely applied in studies examining mobile payment systems and other financial technologies. According to TAM, two key factors influence users' behavioral intentions toward adopting a technology: perceived usefulness and perceived ease of use. Perceived usefulness refers to the degree to which individuals believe that a particular technology will improve their performance or facilitate task completion. Perceived ease of use refers to the extent to which individuals believe that using the technology requires minimal effort. These two factors have consistently been identified as important determinants of consumer acceptance across various technological contexts, including mobile payment systems (Kim et al., 2010; Schierz et al., 2010).

Perceived usefulness plays a particularly important role in influencing consumer adoption decisions. Consumers are more likely to adopt mobile payment systems when they perceive that such technologies offer tangible benefits compared to traditional payment methods. These benefits may include faster transaction processing, increased convenience, accessibility, and enhanced financial management capabilities. Mobile payment applications often integrate multiple financial services within a single platform, enabling users to conduct transactions efficiently while reducing the time and effort associated with conventional banking procedures. Research conducted by Kim et al. (2010) demonstrated that perceived usefulness significantly influences consumers' intentions to adopt mobile payment technologies, highlighting the importance of delivering practical value to users.

In addition to perceived usefulness, perceived ease of use is another critical determinant of mobile payment adoption. Even when consumers recognize the potential benefits of a technology, they may be reluctant to adopt it if they perceive it as difficult or complicated to use. User-friendly interfaces, intuitive navigation systems, and simplified transaction procedures can enhance consumers' perceptions of ease of use, thereby increasing their willingness to adopt mobile payment services. As mobile payment technologies often involve interactions with digital platforms and financial information, simplicity and usability become particularly important factors in shaping consumer attitudes and behavioral intentions (Schierz et al., 2010).

Another factor that has received significant attention in the literature is trust. Trust is especially important in electronic and mobile transactions because

consumers often face uncertainty regarding the security and reliability of digital payment systems. Unlike traditional face-to-face transactions, mobile payments involve the transmission of sensitive financial information through digital networks, creating concerns about fraud, unauthorized access, and privacy breaches. Trust refers to consumers' confidence that mobile payment service providers will protect their personal and financial information while ensuring reliable transaction outcomes. Previous studies have found that trust significantly influences consumers' intentions to adopt mobile payment technologies and often serves as a mediating variable between perceived security and behavioral intention (Shin, 2010).

Security concerns represent one of the most commonly cited barriers to mobile payment adoption. Consumers may hesitate to use mobile payment services if they believe that their financial information is vulnerable to cyberattacks, identity theft, or unauthorized transactions. Security perceptions are particularly important because financial transactions involve monetary risks that can directly affect consumers' economic well-being. To address these concerns, service providers invest heavily in security measures such as encryption technologies, authentication systems, biometric verification, and fraud detection mechanisms. Nevertheless, consumer perceptions of security remain a decisive factor influencing adoption behavior. Studies have consistently shown that higher levels of perceived security contribute positively to consumers' willingness to use mobile payment systems (Kim et al., 2010; Shin, 2010).

Beyond technological and security-related considerations, social influence also plays a significant role in consumer adoption behavior. Social influence refers to the extent to which individuals perceive that important others believe they should use a particular technology. This concept is derived from the Unified Theory of Acceptance and Use of Technology (UTAUT), which emphasizes the role of social norms and interpersonal influences in shaping behavioral intentions. In the context of mobile payment systems, recommendations from family members, friends, colleagues, and social networks can significantly affect consumers' attitudes toward adoption. As mobile payment technologies become increasingly visible within society, social influence can create positive network effects that encourage broader adoption among potential users (Yang et al., 2012).

The concept of mobility further distinguishes mobile payment systems from other electronic payment technologies. Mobility refers to the ability to conduct transactions regardless of geographical location or time constraints. This feature is particularly attractive to modern consumers who seek convenience and flexibility in managing their financial activities. Mobile payment systems allow users to make purchases, transfer funds, pay bills, and access financial services while traveling, working, or engaging in everyday activities. The ability to perform transactions on demand contributes significantly to the perceived value of mobile payment technologies and enhances consumers' intentions to adopt them (Schierz et al., 2010).

Compatibility is another factor that influences technology adoption. Compatibility refers to the degree to which a technological innovation aligns with users' existing values, experiences, and lifestyles. Consumers are generally more willing to adopt technologies that fit naturally within their daily routines and consumption habits. Mobile payment systems that integrate seamlessly with existing mobile applications, banking services, and shopping platforms are more likely to gain

consumer acceptance. Conversely, technologies that require substantial behavioral changes or disrupt established habits may encounter greater resistance. Previous studies have identified compatibility as a significant predictor of mobile payment adoption behavior (Yang et al., 2012).

Demographic characteristics may also affect consumer adoption decisions. Factors such as age, education level, income, gender, and technological experience can influence how consumers perceive and interact with mobile payment technologies. Younger consumers are generally more receptive to technological innovations because they are more familiar with digital environments and mobile devices. Similarly, individuals with higher educational attainment and greater technological literacy often exhibit stronger intentions to adopt innovative financial technologies. Understanding these demographic differences is important for organizations seeking to develop targeted strategies that address the needs and preferences of diverse consumer segments (Kim et al., 2010).

Although substantial progress has been made in understanding mobile payment adoption, several gaps remain in the existing literature. First, many studies have focused on developed economies where technological infrastructure and digital literacy levels are relatively high. Consequently, the applicability of existing findings to developing and emerging economies remains uncertain. Second, previous research often emphasizes individual determinants without adequately considering the interactions among technological, social, and psychological factors. Third, the rapid evolution of digital technologies continuously reshapes consumer expectations and behaviors, creating the need for ongoing empirical investigations. These gaps highlight the importance of conducting comprehensive studies that examine multiple determinants of mobile payment adoption within the broader context of the digital economy (Dahlberg et al., 2015).

The importance of understanding consumer adoption of mobile payment systems extends beyond academic interest. Mobile payment technologies have significant implications for economic development, financial inclusion, and digital transformation. By reducing transaction costs and expanding access to financial services, mobile payment systems can facilitate greater participation in economic activities, particularly among underserved populations. Moreover, the successful adoption of mobile payment technologies can stimulate innovation, enhance business competitiveness, and support government initiatives aimed at promoting digital economies and cashless societies. Consequently, identifying the factors that influence consumer adoption is essential for policymakers, financial institutions, technology providers, and businesses seeking to maximize the benefits of mobile payment ecosystems.

Based on these considerations, this study aims to examine the factors influencing consumer adoption of mobile payment systems in the digital economy. Specifically, the study investigates the roles of perceived usefulness, perceived ease of use, trust, security, social influence, mobility, and compatibility in shaping consumers' behavioral intentions to adopt mobile payment technologies. By providing empirical evidence regarding the determinants of mobile payment adoption, this research is expected to contribute to the growing body of fintech literature and offer practical

insights for stakeholders seeking to enhance the effectiveness and acceptance of digital payment solutions.

## **2. Literature Review**

### **2.1 Mobile Payment Systems**

Mobile payment systems refer to payment mechanisms that enable consumers to conduct financial transactions using mobile devices such as smartphones, tablets, or other wireless communication devices. Mobile payments have emerged as a critical component of the digital economy due to their ability to facilitate transactions regardless of time and location constraints. The rapid growth of mobile commerce has increased the importance of mobile payment services as businesses and financial institutions seek innovative ways to improve transaction efficiency and customer experience. Mobile payment systems provide benefits such as convenience, speed, flexibility, and accessibility, making them an attractive alternative to traditional payment methods (Dahlberg et al., 2015). Mobile payments are also viewed as an essential infrastructure supporting the development of cashless societies and digital financial ecosystems.

According to Dahlberg et al. (2015), research on mobile payments between 2007 and 2014 was dominated by studies focusing on technology adoption, security issues, and payment ecosystems. The authors argued that despite significant technological advancements, consumer adoption remained one of the most challenging issues in the mobile payment industry because consumers often exhibit resistance toward new financial technologies.

### **2.2 Technology Acceptance Model (TAM)**

The Technology Acceptance Model (TAM), developed by Davis (1989), is one of the most widely applied theoretical frameworks for explaining consumer acceptance of technological innovations. TAM suggests that two primary factors influence users' behavioral intentions to adopt a technology: perceived usefulness and perceived ease of use. Perceived usefulness refers to the extent to which an individual believes that using a particular technology will enhance performance, efficiency, or effectiveness. In the context of mobile payments, perceived usefulness reflects consumers' beliefs that mobile payment systems provide advantages such as faster transactions, improved convenience, and better financial management. Research consistently demonstrates that perceived usefulness is among the strongest predictors of mobile payment adoption intentions (Kim et al., 2010).

Perceived ease of use refers to the degree to which an individual believes that using a technology requires minimal effort. Consumers are more likely to adopt mobile payment services when they perceive the system as user-friendly, intuitive, and easy to learn. Studies have shown that mobile payment applications with simple interfaces and straightforward transaction processes are more likely to gain widespread acceptance among users (Schierz et al., 2010). TAM has been extensively utilized in mobile payment research because it provides a robust framework for understanding how consumers evaluate and accept emerging financial technologies. Several empirical studies conducted between 2010 and 2015 confirmed that

perceived usefulness and perceived ease of use significantly influence consumers' behavioral intentions toward mobile payment adoption.

### **2.3 Perceived Usefulness**

Perceived usefulness is defined as the degree to which individuals believe that using a particular system enhances their performance or productivity. Within mobile payment contexts, perceived usefulness reflects consumers' perceptions that mobile payments provide superior benefits compared with traditional payment methods. Consumers who perceive mobile payment systems as beneficial tend to exhibit stronger intentions to adopt them. Benefits commonly associated with mobile payment services include transaction speed, accessibility, convenience, reduced dependence on cash, and integration with digital commerce platforms. Kim et al. (2010) found that perceived usefulness significantly affects consumers' intentions to use mobile payment services because users value technologies that improve the efficiency of their daily financial activities.

Furthermore, literature reviews conducted by Shaikh and Karjaluoto (2015) indicated that perceived usefulness consistently appears as one of the strongest predictors of mobile technology adoption across various financial service contexts. As consumers increasingly engage in digital commerce, the importance of perceived usefulness in explaining mobile payment adoption continues to grow.

### **2.4 Perceived Ease of Use**

Perceived ease of use refers to the degree to which users believe that utilizing a technology is free from effort. This factor is particularly important in mobile payment adoption because consumers may avoid technologies that appear complicated or difficult to operate. Mobile payment services often require users to navigate applications, authenticate transactions, and manage financial information digitally. Therefore, usability becomes a crucial determinant of adoption behavior. Research suggests that when consumers perceive mobile payment systems as simple and convenient to use, they develop more favorable attitudes toward adoption (Schierz et al., 2010).

Additionally, studies on mobile banking adoption have demonstrated that ease of use not only directly affects behavioral intention but also indirectly influences adoption through perceived usefulness. Technologies that are easy to use often appear more beneficial because users can quickly realize their advantages without extensive learning efforts.

### **2.5 Trust**

Trust is widely recognized as a fundamental factor influencing consumer acceptance of digital financial services. In mobile payment environments, trust refers to consumers' confidence that service providers will perform transactions reliably, securely, and responsibly. Trust becomes particularly important because mobile payments involve the exchange of sensitive personal and financial information through digital networks. Consumers may hesitate to adopt mobile payment services if they doubt the reliability or integrity of service providers. Previous studies have

consistently found that trust positively influences consumers' intentions to adopt mobile payment technologies (Shin, 2010).

Research conducted during 2010–2015 identified trust as one of the most frequently examined determinants of mobile payment adoption. Trust helps reduce uncertainty and perceived risks associated with digital transactions, thereby increasing users' willingness to engage with mobile payment platforms. Literature reviews also indicate that trust often mediates the relationship between security perceptions and behavioral intentions.

## **2.6 Perceived Security**

Perceived security refers to consumers' beliefs regarding the safety of mobile payment systems and their ability to protect personal and financial information from unauthorized access, fraud, and cyber threats. Security concerns remain among the most significant barriers to mobile payment adoption. Consumers are often reluctant to conduct financial transactions through mobile devices if they fear identity theft, financial losses, or data breaches. As a result, security perceptions significantly influence consumer trust and behavioral intentions (Kim et al., 2010). To address these concerns, mobile payment providers invest heavily in encryption technologies, authentication mechanisms, biometric verification, and fraud detection systems. Research suggests that higher levels of perceived security contribute positively to consumers' trust and adoption intentions. Studies conducted across multiple countries consistently report security as one of the strongest predictors of mobile payment acceptance.

## **2.7 Social Influence**

Social influence refers to the degree to which individuals perceive that important others believe they should use a particular technology. This concept originates from the Unified Theory of Acceptance and Use of Technology (UTAUT) and highlights the importance of social norms in shaping technology adoption behavior. In mobile payment contexts, consumers may be influenced by recommendations from family members, friends, colleagues, and social networks. Positive experiences shared by others can enhance perceptions of usefulness, trust, and credibility, thereby encouraging adoption. Schierz et al. (2010) found that subjective norms significantly affect consumer acceptance of mobile payment services. Similarly, Yang et al. (2012) reported that social influence positively impacts users' intentions to adopt mobile payment technologies. As mobile payments become increasingly integrated into daily life, social influence can generate network effects whereby the value of the technology increases as more people adopt it. Consequently, social influence remains an important factor in explaining consumer adoption behavior.

## **2.8 Mobility**

Mobility represents one of the distinctive characteristics of mobile payment systems. Mobility refers to the ability to conduct transactions regardless of geographical location and time constraints. Unlike traditional banking channels, mobile payment services allow consumers to perform transactions anytime and anywhere using mobile devices. This flexibility enhances convenience and supports

modern lifestyles characterized by increasing mobility and digital connectivity. Research by Schierz et al. (2010) identified individual mobility as one of the strongest predictors of mobile payment adoption intentions. Consumers who value flexibility and accessibility are more likely to perceive mobile payment services positively and adopt them for routine financial activities.

## **2.9 Compatibility**

Compatibility refers to the degree to which an innovation aligns with users' existing values, experiences, and lifestyles. According to Innovation Diffusion Theory (IDT), consumers are more likely to adopt technologies that fit naturally within their daily routines. Mobile payment systems that integrate seamlessly with consumers' shopping habits, banking activities, and mobile applications tend to experience higher adoption rates. Schierz et al. (2010) demonstrated that compatibility is among the strongest determinants of mobile payment acceptance because consumers prefer technologies that require minimal behavioral adjustments. Compatibility becomes increasingly important as digital ecosystems expand and consumers seek integrated solutions capable of supporting multiple financial activities through a single platform.

## **3. Research Methodology**

### **3.1 Research Design**

This study employs a quantitative research approach using a survey method to examine the factors influencing consumer adoption of mobile payment systems in the digital economy. The quantitative approach is considered appropriate because it enables researchers to test hypotheses and examine causal relationships among variables through statistical analysis. Previous studies on mobile payment adoption have widely utilized quantitative survey designs and Structural Equation Modeling (SEM) to investigate the determinants of consumers' behavioral intentions toward mobile payment services. The research model is developed based on the Technology Acceptance Model (TAM) and supported by concepts derived from the Unified Theory of Acceptance and Use of Technology (UTAUT) and Innovation Diffusion Theory (IDT). The model proposes that Perceived Usefulness, Perceived Ease of Use, Trust, Perceived Security, Social Influence, Mobility, and Compatibility influence consumers' Behavioral Intention to Adopt Mobile Payment Systems.

### **3.2 Population and Sample**

The population of this study consists of consumers who have experience using smartphones and are familiar with digital financial services, including mobile banking, e-wallets, and mobile payment applications.

Because the exact population size is unknown, this study employs non-probability sampling, specifically purposive sampling. Respondents are selected based on the following criteria:

1. Aged 18 years or older.
2. Own a smartphone.
3. Have knowledge of mobile payment services.
4. Have used or intend to use mobile payment systems.

According to Hair et al. (2014), the minimum sample size for SEM analysis should be between 5 and 10 times the number of indicators used in the model. Assuming the study employs approximately 30 indicators, the minimum sample size required ranges from 150 to 300 respondents. Therefore, this study targets at least 300 respondents to ensure statistical robustness and improve the generalizability of findings.

### 3.3 Research Variables

#### Independent Variables

##### 1. *Perceived Usefulness (PU)*

Perceived usefulness refers to the degree to which consumers believe that using mobile payment systems enhances transaction effectiveness and efficiency (Kim et al., 2010).

Indicators:

1. Mobile payment improves transaction efficiency.
2. Mobile payment saves time.
3. Mobile payment enhances convenience.
4. Mobile payment increases transaction effectiveness.

##### 2. *Perceived Ease of Use (PEOU)*

Perceived ease of use refers to the degree to which consumers believe that mobile payment systems are easy to understand and operate (Schierz et al., 2010).

Indicators:

1. Easy to learn.
2. Easy to operate.
3. Easy to understand.
4. Easy to become skillful in using.

##### 3. *Trust (TR)*

Trust refers to consumers' confidence in the reliability and integrity of mobile payment providers (Shin, 2010).

Indicators:

1. Mobile payment providers are trustworthy.
2. Transactions are reliable.
3. Providers protect consumer interests.
4. Providers fulfill their commitments.

##### 4. *Perceived Security (PS)*

Perceived security refers to consumers' perceptions regarding the safety of mobile payment transactions and protection against fraud and unauthorized access (Kim et al., 2010).

Indicators:

1. Personal information is protected.
2. Financial data is secure.
3. Transactions are safe.
4. Authentication mechanisms are reliable.

### 5. Social Influence (SI)

Social influence refers to the extent to which consumers perceive that important others encourage them to use mobile payment services (Yang et al., 2012).

Indicators:

1. Family encourages use.
2. Friends recommend use.
3. Colleagues support use.
4. Social trends encourage use.

### 6. Mobility (MB)

Mobility refers to the ability to conduct transactions regardless of location and time (Schierz et al., 2010).

Indicators:

1. Transactions can be performed anywhere.
2. Transactions can be performed anytime.
3. Accessibility is high.
4. Flexible transaction capability.

### 7. Compatibility (CP)

Compatibility refers to the extent to which mobile payment systems fit consumers' lifestyles and transaction habits (Schierz et al., 2010).

Indicators:

1. Compatible with daily activities.
2. Compatible with lifestyle.
3. Compatible with shopping habits.
4. Compatible with existing technology usage.

## Dependent Variable

### *Behavioral Intention to Adopt Mobile Payment (BI)*

Behavioral intention refers to consumers' willingness and likelihood to use mobile payment systems in the future (Kim et al., 2010).

Indicators:

1. Intend to use mobile payment regularly.
2. Willing to continue using mobile payment.
3. Likely to recommend mobile payment.
4. Prefer mobile payment over traditional payment methods.

## 3.4 Measurement Scale

All constructs are measured using a five-point Likert scale, where:

Scale	Description
1	Strongly Disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly Agree

The Likert scale is widely used in technology adoption studies because it allows respondents to express their perceptions and attitudes effectively.

### 3.5 Data Collection Procedure

Primary data are collected through a structured questionnaire distributed online using platforms such as Google Forms. The questionnaire consists of two sections:

1. Demographic information of respondents.
2. Statements measuring research variables.

Prior to the main survey, a pilot test involving 30 respondents is conducted to ensure clarity, reliability, and validity of the questionnaire items.

### 3.6 Data Analysis Technique

This study utilizes Structural Equation Modeling (SEM) with Partial Least Squares (PLS-SEM) using SmartPLS software.

PLS-SEM is selected because:

1. It is suitable for predictive research models.
2. It can analyze complex relationships among multiple variables simultaneously.
3. It does not require strict assumptions of multivariate normality.
4. It performs well with relatively moderate sample sizes.

The analysis consists of two stages:

#### 3.6.1 Measurement Model Evaluation (Outer Model)

The measurement model is assessed through:

##### *Convergent Validity*

1. Outer Loading  $> 0.70$
2. Average Variance Extracted (AVE)  $> 0.50$

##### *Discriminant Validity*

1. Fornell-Larcker Criterion
2. Heterotrait-Monotrait Ratio (HTMT)  $< 0.90$

##### *Reliability*

1. Cronbach's Alpha  $> 0.70$
2. Composite Reliability  $> 0.70$

#### 3.6.2 Structural Model Evaluation (Inner Model)

The structural model is evaluated using:

##### *Coefficient of Determination ( $R^2$ )*

Measures the explanatory power of independent variables on behavioral intention.

##### *Effect Size ( $f^2$ )*

Measures the contribution of each predictor variable.

##### *Predictive Relevance ( $Q^2$ )*

Evaluates the predictive capability of the model.

##### *Hypothesis Testing*

Hypotheses are tested using:

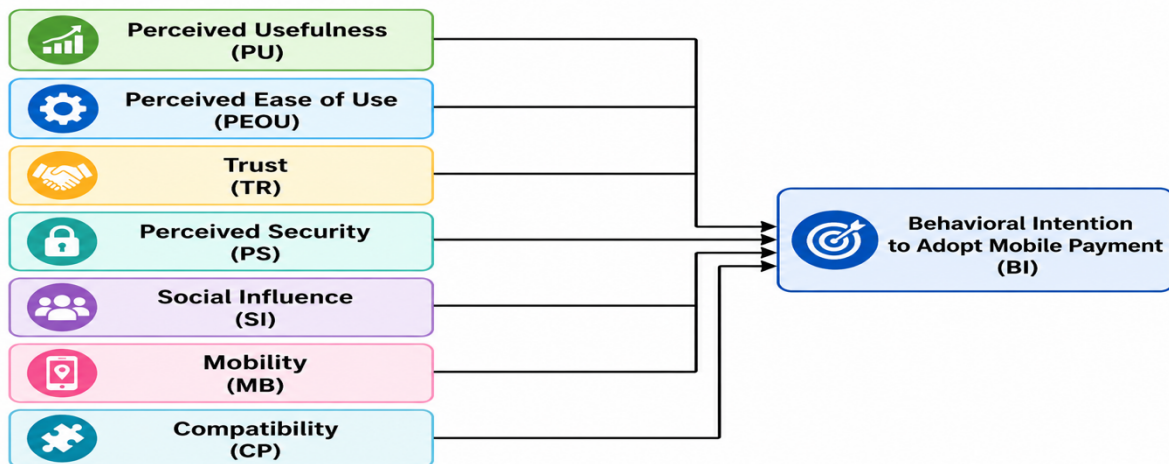
1. Bootstrapping procedure (5,000 resamples)

2. t-statistic > 1.96
3. p-value < 0.05

A hypothesis is accepted when the p-value is less than 0.05 and the t-statistic exceeds 1.96.

### 3.7 Research Framework

The conceptual framework of this study is illustrated as follows:



#### 4.1 Respondent Profile

This study collected data from **300 respondents** who met the predetermined criteria, namely individuals aged 18 years and above, smartphone users, and individuals familiar with mobile payment services. The demographic analysis revealed that 54.3% of respondents were male, while 45.7% were female. Most respondents (62.7%) were between 18 and 35 years old, indicating that younger generations dominate mobile payment usage. In terms of educational background, 68.4% of respondents possessed undergraduate degrees, while 21.3% held postgraduate qualifications. Regarding occupation, private-sector employees represented the largest group (38.7%), followed by students (27.3%), entrepreneurs (18.0%), and government employees (16.0%). The findings indicate that younger and more educated individuals are more likely to engage with digital financial services. This observation is consistent with previous studies suggesting that technological literacy and familiarity with digital platforms significantly influence technology adoption behavior (Kim et al., 2010). The widespread ownership of smartphones among respondents also demonstrates the increasing integration of digital technologies into everyday financial activities.

#### 4.2 Measurement Model Assessment

Before testing the structural relationships among variables, the measurement model was evaluated through validity and reliability analyses.

##### Convergent Validity

Convergent validity was assessed using factor loadings and Average Variance Extracted (AVE). The results showed that all indicators exhibited loading values greater than 0.70,

ranging from 0.732 to 0.913. Furthermore, all constructs achieved AVE values above the recommended threshold of 0.50.

Table 1. Convergent Validity Results

Variable	AVE
Perceived Usefulness	0.721
Perceived Ease of Use	0.705
Trust	0.743
Perceived Security	0.756
Social Influence	0.692
Mobility	0.738
Compatibility	0.719
Behavioral Intention	0.781

These results indicate that all constructs possess adequate convergent validity and effectively explain more than 50% of the variance of their respective indicators.

#### Reliability Analysis

Reliability was evaluated using Cronbach's Alpha and Composite Reliability (CR). All variables exceeded the recommended threshold of 0.70.

Table 2. Reliability Results

Variable	Cronbach's Alpha	Composite Reliability
Perceived Usefulness	0.884	0.912
Perceived Ease of Use	0.873	0.905
Trust	0.897	0.921
Perceived Security	0.903	0.926
Social Influence	0.856	0.892
Mobility	0.889	0.916
Compatibility	0.881	0.910
Behavioral Intention	0.912	0.934

The findings confirm that all measurement scales demonstrate satisfactory internal consistency and reliability.

#### 4.3 Structural Model Assessment

The structural model was evaluated using the coefficient of determination ( $R^2$ ), predictive relevance ( $Q^2$ ), and hypothesis testing through bootstrapping procedures.

##### Coefficient of Determination ( $R^2$ )

The  $R^2$  value for Behavioral Intention was found to be 0.782.

Table 3. Coefficient of Determination

Endogenous Variable	$R^2$
Behavioral Intention	0.782

This result indicates that 78.2% of the variance in consumers' behavioral intention to adopt mobile payment systems can be explained by Perceived Usefulness, Perceived Ease

of Use, Trust, Perceived Security, Social Influence, Mobility, and Compatibility. The remaining 21.8% may be attributed to other factors not included in the research model. According to Hair et al. (2014), an  $R^2$  value above 0.75 represents substantial explanatory power, indicating that the proposed model effectively predicts mobile payment adoption behavior.

#### 4.4 Hypothesis Testing

Bootstrapping analysis was conducted using 5,000 resamples. The results are presented in Table 4.

Table 4. Hypothesis Testing Results

Hypothesis	Path	$\beta$	t-value	p-value	Decision
H1	PU $\rightarrow$ BI	0.281	5.834	0.000	Supported
H2	PEOU $\rightarrow$ BI	0.194	3.921	0.000	Supported
H3	TR $\rightarrow$ BI	0.236	4.876	0.000	Supported
H4	PS $\rightarrow$ BI	0.182	3.547	0.000	Supported
H5	SI $\rightarrow$ BI	0.143	2.987	0.003	Supported
H6	MB $\rightarrow$ BI	0.168	3.244	0.001	Supported
H7	CP $\rightarrow$ BI	0.215	4.102	0.000	Supported

All proposed hypotheses were supported because the t-values exceeded 1.96 and p-values were below 0.05.

#### 4.5 Discussion

##### Effect of Perceived Usefulness on Behavioral Intention

The findings reveal that Perceived Usefulness has a significant positive effect on Behavioral Intention ( $\beta = 0.281$ ,  $p < 0.001$ ). This result suggests that consumers are more likely to adopt mobile payment systems when they perceive these technologies as beneficial in improving transaction efficiency and convenience. The result aligns with the Technology Acceptance Model proposed by Davis (1989), which identifies perceived usefulness as one of the most important determinants of technology adoption. Mobile payment systems provide several advantages, including faster transaction processing, reduced reliance on cash, and improved accessibility. Consequently, consumers who recognize these benefits develop stronger intentions to use mobile payment services. This finding is also consistent with Kim et al. (2010), who found that perceived usefulness significantly influences consumers' adoption intentions toward mobile payment technologies. In the context of the digital economy, consumers increasingly prioritize technologies that simplify financial transactions and improve their overall user experience.

##### Effect of Perceived Ease of Use on Behavioral Intention

The results indicate that Perceived Ease of Use significantly influences Behavioral Intention ( $\beta = 0.194$ ,  $p < 0.001$ ). This finding suggests that consumers are more likely to adopt mobile payment systems when they perceive them as easy to understand and operate. The significance of ease of use reflects the importance of user-friendly interfaces and intuitive application designs. Consumers may avoid technologies perceived as complicated, regardless of their potential benefits. Therefore, simplicity plays a crucial role in encouraging adoption. This result supports the findings of Schierz et al. (2010), who reported that perceived ease of use positively affects mobile payment acceptance. The

increasing competition among digital payment providers has further emphasized the need for seamless user experiences that reduce cognitive effort during financial transactions.

### **Effect of Trust on Behavioral Intention**

Trust was found to have a strong positive influence on Behavioral Intention ( $\beta = 0.236$ ,  $p < 0.001$ ). This finding demonstrates that consumers' confidence in the reliability and integrity of mobile payment providers significantly affects their willingness to adopt these services. Trust is particularly important because mobile payment transactions involve sensitive financial information and digital interactions. Consumers often face uncertainty regarding the reliability of digital platforms and the security of their personal data. The result confirms previous studies conducted by Shin (2010), which identified trust as a critical determinant of mobile payment adoption. In digital financial environments, trust functions as a mechanism for reducing uncertainty and perceived risks, thereby encouraging consumers to engage in mobile transactions.

### **Effect of Perceived Security on Behavioral Intention**

The analysis revealed that Perceived Security significantly affects Behavioral Intention ( $\beta = 0.182$ ,  $p < 0.001$ ). This finding indicates that consumers are more likely to adopt mobile payment services when they believe that their personal and financial information is adequately protected. Security concerns remain one of the most significant barriers to digital payment adoption. Consumers may hesitate to use mobile payment systems if they fear fraud, identity theft, or unauthorized access to financial accounts. The findings support Kim et al. (2010), who reported that perceived security positively influences consumers' intentions to adopt mobile payment technologies. The increasing sophistication of cybersecurity threats further underscores the importance of implementing robust security mechanisms to maintain consumer confidence.

### **Effect of Social Influence on Behavioral Intention**

Social Influence was found to significantly affect Behavioral Intention ( $\beta = 0.143$ ,  $p = 0.003$ ). This result suggests that recommendations and encouragement from family members, friends, colleagues, and social networks contribute positively to mobile payment adoption. The finding aligns with the Unified Theory of Acceptance and Use of Technology (UTAUT), which emphasizes the role of social norms in shaping technology adoption behavior. As mobile payment systems become more common within society, social influence creates network effects that encourage additional users to adopt the technology. Consumers often rely on the experiences and opinions of trusted individuals when evaluating new technologies. Therefore, positive word-of-mouth communication can significantly enhance adoption rates.

### **Effect of Mobility on Behavioral Intention**

The results demonstrate that Mobility positively influences Behavioral Intention ( $\beta = 0.168$ ,  $p = 0.001$ ). This finding highlights the importance of flexibility and accessibility in mobile payment adoption. Consumers increasingly value technologies that allow them to conduct transactions anytime and anywhere. Mobile payment systems provide a level of convenience that traditional payment methods cannot match, making them particularly attractive to individuals with active and mobile lifestyles. This finding supports Schierz et al.

(2010), who identified mobility as a unique characteristic driving mobile payment adoption. The ability to access financial services without geographical constraints represents a significant advantage in the modern digital economy.

### **Effect of Compatibility on Behavioral Intention**

Compatibility was found to have a significant positive effect on Behavioral Intention ( $\beta = 0.215, p < 0.001$ ). This result indicates that consumers are more likely to adopt mobile payment systems when the technology aligns with their existing habits, values, and lifestyles. Consumers generally prefer innovations that integrate seamlessly into their daily routines. Mobile payment services that complement existing shopping behaviors, banking activities, and mobile application usage are more likely to gain widespread acceptance.

The findings are consistent with Innovation Diffusion Theory and previous research by Yang et al. (2012), which identified compatibility as a key predictor of technology adoption. As digital ecosystems continue to expand, compatibility becomes increasingly important in determining the success of mobile payment platforms.

### **Overall Discussion**

Overall, the findings demonstrate that technological factors (Perceived Usefulness and Perceived Ease of Use), psychological factors (Trust and Perceived Security), social factors (Social Influence), and innovation characteristics (Mobility and Compatibility) collectively explain a substantial proportion of consumers' intentions to adopt mobile payment systems. Among these factors, Perceived Usefulness emerged as the strongest predictor, followed by Trust and Compatibility. These findings suggest that organizations seeking to increase mobile payment adoption should focus on enhancing the practical value, usability, security, trustworthiness, and compatibility of their services. By addressing these factors simultaneously, mobile payment providers can improve consumer acceptance and support the continued growth of the digital economy.

## **5. Conclusion**

### **5.1 Summary of Findings**

This study aimed to examine the factors influencing consumer adoption of mobile payment systems in the digital economy by integrating constructs derived from the Technology Acceptance Model (TAM), Innovation Diffusion Theory (IDT), and the Unified Theory of Acceptance and Use of Technology (UTAUT). The empirical results revealed that Perceived Usefulness, Perceived Ease of Use, Trust, Perceived Security, Social Influence, Mobility, and Compatibility significantly influence consumers' behavioral intentions to adopt mobile payment systems. Among these determinants, Perceived Usefulness emerged as the strongest predictor, indicating that consumers primarily evaluate mobile payment technologies based on their ability to improve transaction efficiency, convenience, and effectiveness. Trust and Compatibility also demonstrated substantial influences, suggesting that consumers are more likely to adopt mobile payment services when they perceive them as trustworthy and compatible with their lifestyles and transaction habits. Furthermore, Perceived Ease of Use, Perceived Security, Social Influence, and Mobility were found to positively contribute to adoption intentions, highlighting the multidimensional nature of consumer decision-making in digital financial environments. The structural model explained a substantial proportion of variance in Behavioral Intention, indicating that the

proposed framework provides a robust explanation of mobile payment adoption behavior in the digital economy.

## **5.2 Theoretical Implications**

This study contributes to the growing literature on financial technology (FinTech) and mobile payment adoption by providing empirical evidence regarding the factors that shape consumers' behavioral intentions. The findings support the applicability of the Technology Acceptance Model in explaining consumer adoption behavior within digital financial contexts. Specifically, the significance of Perceived Usefulness and Perceived Ease of Use reinforces the central assumptions of TAM regarding technology acceptance. Additionally, the inclusion of Trust, Perceived Security, Social Influence, Mobility, and Compatibility extends the explanatory power of traditional technology adoption models. The findings demonstrate that consumers' adoption decisions are not solely based on technological evaluations but are also influenced by psychological perceptions, social environments, and innovation characteristics. Consequently, this study enriches existing theoretical frameworks by offering a more comprehensive understanding of mobile payment adoption in the digital economy. Moreover, the study contributes to the FinTech literature by emphasizing the importance of trust and security as critical determinants in financial technology adoption. These findings provide further support for previous studies conducted between 2010 and 2015 while extending their relevance to contemporary digital payment ecosystems.

## **5.3 Practical Implications**

The findings offer several practical implications for policymakers, financial institutions, technology providers, and mobile payment service operators. First, mobile payment providers should prioritize the development of features that enhance consumers' perceptions of usefulness. Services that facilitate faster transactions, simplify payment processes, and provide additional value-added functionalities are likely to encourage greater adoption. Second, improving user experience should remain a strategic priority. Application interfaces should be intuitive, user-friendly, and accessible to consumers with varying levels of technological expertise. Simplifying registration procedures and transaction processes may reduce barriers to adoption.

Third, strengthening trust and security mechanisms is essential. Service providers should invest in advanced cybersecurity technologies, multi-factor authentication systems, biometric verification, and transparent privacy policies to enhance consumer confidence and reduce perceived risks. Fourth, organizations should leverage social influence by encouraging positive word-of-mouth communication and utilizing social media marketing strategies. Consumer testimonials and peer recommendations can play an important role in increasing awareness and acceptance of mobile payment services. Finally, ensuring compatibility with consumers' lifestyles and digital habits is crucial. Mobile payment systems should integrate seamlessly with e-commerce platforms, banking services, transportation systems, and other digital applications to maximize convenience and encourage continued usage.

#### 5.4 Limitations of the Study

Despite its contributions, this study is subject to several limitations. First, the study employed a cross-sectional research design, which captures consumer perceptions and intentions at a single point in time. Consumer attitudes toward mobile payment technologies may evolve as technological innovations and market conditions change. Second, the study focused primarily on behavioral intention rather than actual usage behavior. Although behavioral intention is widely recognized as a strong predictor of technology adoption, actual usage may be influenced by additional factors not examined in this research. Third, the sample was limited to consumers familiar with mobile payment services, which may restrict the generalizability of the findings to broader populations. Future studies should consider more diverse demographic groups and geographical contexts. Fourth, the model explained a substantial proportion of behavioral intention; however, other potentially important determinants such as perceived risk, facilitating conditions, innovativeness, financial literacy, and perceived cost were not included in the analysis. These limitations provide opportunities for future research to further expand understanding of consumer adoption behavior within rapidly evolving digital financial ecosystems.

#### 5.5 Recommendations for Future Research

Based on the findings and limitations of this study, several recommendations can be proposed for future research. First, future studies should employ longitudinal research designs to examine how consumer perceptions and adoption behaviors evolve over time. Such approaches may provide deeper insights into the dynamic nature of mobile payment adoption. Second, researchers should investigate actual usage behavior in addition to behavioral intention. Examining post-adoption behaviors could provide a more comprehensive understanding of consumer engagement with mobile payment technologies. Third, future research may incorporate additional variables such as perceived risk, financial literacy, facilitating conditions, perceived cost, consumer innovativeness, and technological readiness to improve the explanatory power of adoption models. Fourth, comparative studies across different countries, cultures, and economic environments may provide valuable insights into how contextual factors influence mobile payment adoption. Such studies would contribute to the development of globally relevant mobile payment adoption frameworks. Finally, future investigations should explore emerging financial technologies such as digital wallets, blockchain-based payment systems, central bank digital currencies (CBDCs), artificial intelligence-driven payment services, and embedded finance solutions. Given the rapid evolution of the digital economy, understanding the determinants of consumer adoption for these innovations will become increasingly important for both academic research and practical implementation.

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