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Perceived Usefulness, Ease Of Use, And Social Influence In Shaping Digital Payment Behavior In Balikpapan

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Abstract

The rapid development of digital technology has transformed payment systems and encouraged society to shift from conventional cash transactions toward digital payment methods. However, the increasing volume of digital payment transactions does not necessarily explain the factors that drive individuals to consistently use digital payment services. This study aims to examine the effect of perceived usefulness, perceived ease of use, and social influence on digital payment user behavior in Balikpapan City. The study employs a quantitative approach using an explanatory research design. Data were collected through questionnaires from digital payment users in Balikpapan City and analyzed using Partial Least Squares-Structural Equation Modeling (PLS-SEM) with SmartPLS 4. The results indicate that perceived usefulness, perceived ease of use, and social influence have positive and significant effects on digital payment user behavior. The findings demonstrate that users are more likely to use digital payment when they perceive the system as beneficial, easy to operate, and supported by their social environment. The coefficient of determination indicates that the three independent variables explain 53.0% of the variation in digital payment user behavior, while the remaining 47.0% is explained by other factors outside the research model. This study contributes to the literature on technology acceptance by providing empirical evidence regarding the determinants of actual digital payment behavior in the context of Balikpapan City.

Keywords: digital payment, perceived usefulness, perceived ease of use, social influence, user behavior, Technology Acceptance Model

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INTRODUCTION

The development of information and communication technology has brought significant changes to various aspects of economic activity, including financial transactions and payment systems. One of the most prominent transformations is the emergence of digital payment, which enables individuals to conduct transactions electronically without directly using physical cash. Digital payment includes various platforms, such as electronic wallets (e-wallets), Quick Response Code Indonesian Standard (QRIS), mobile banking, and other electronic payment facilities (Budiman et al., 2025). The adoption of these technologies provides several benefits, including faster transactions, greater time efficiency, reduced dependence on physical cash, and automatic transaction records (Prayoga et al., 2025).

The development of digital payment in Indonesia has shown a substantial upward trend. The value of electronic money transactions increased from Rp305.4 trillion in 2021 to Rp399.6 trillion in 2022, Rp835.84 trillion in 2023, and Rp2,503.96 trillion in 2024. Furthermore, the value reached approximately Rp3.02 quadrillion during January–November 2025 (Bank Indonesia, 2024; Bappenas, 2026). This rapid increase demonstrates that digital payment has become an increasingly important component of financial transactions in Indonesia. The development of digital payment also indicates a shift in consumer behavior from conventional cash-based transactions toward electronic payment systems.

A similar phenomenon can be observed in Balikpapan City. Data from Bank Indonesia's Balikpapan Representative Office indicate that QRIS transactions reached 10,445,722 transactions by March 2025, representing 34.69% of the annual target. Meanwhile, the number of QRIS merchants in East Kalimantan reached 239,784, equivalent to 96.73% of the 2025 target (Bank Indonesia, 2025). These developments indicate that digital payment adoption has become increasingly integrated into the economic activities of the community. Nevertheless, the increasing availability and utilization of digital payment services do not necessarily result in uniform user behavior. Research conducted in one of the markets in Balikpapan, for example, found that consumers continued to use both cash and digital payment methods (Noor et al., 2026). This condition suggests that differences remain in individuals' preferences and behavior when selecting payment methods.

Digital payment user behavior refers to the actual actions performed by individuals when accepting, using, and continuing to use digital payment systems in their daily transactions (Rohman et al., 2023). Understanding this behavior is important

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because the growth in transaction value alone cannot fully explain why individuals adopt and continue using digital payment technology. Individual acceptance may differ depending on their perceptions of the benefits and ease of using the technology, as well as the influence of their social environment (Aulifin & Dewi, 2022).

To explain digital payment user behavior, this study adopts the Technology Acceptance Model (TAM) developed by Davis (1989). TAM is one of the most widely used theoretical models for explaining individual acceptance and use of information technology. The original model identifies perceived usefulness and perceived ease of use as the main determinants of technology acceptance (Davis, 1989). Perceived usefulness reflects the extent to which individuals believe that using a particular technology will improve their performance, whereas perceived ease of use refers to the extent to which individuals believe that using the technology requires little effort. Both constructs have been widely applied in studies of digital payment and financial technology adoption (Siswoyo & Irianto, 2023; Indriyani et al., 2024).

In addition to internal perceptions, technology use can also be influenced by external social factors. Social influence refers to the extent to which individuals perceive that important people or groups around them encourage them to use a particular technology (Venkatesh & Davis, 2000). In the context of digital payment, family members, friends, colleagues, and other social groups may influence individuals' decisions to adopt and continue using digital payment services. Previous studies have demonstrated that social influence can encourage individuals to use digital payment technologies, particularly when such technologies have become common within their social environment (Sunarya, 2022; Hanafi et al., 2026).

Previous empirical studies have generally confirmed the importance of perceived usefulness and perceived ease of use in explaining digital payment adoption. Permana et al. (2021), for example, found that perceived usefulness and perceived ease of use positively influence user behavior in e-wallet usage. Desvronita (2021) similarly found that perceived usefulness and perceived ease of use significantly affect the intention to use e-wallet payment systems. Sholihah and Nurhapsari (2023) also demonstrated that perceived usefulness and perceived ease of use positively affect QRIS usage intention among MSMEs. However, other studies have produced different findings. Ananda and Lestari (2025) found that perceived ease of use and social influence significantly affect e-wallet usage intention, while perceived usefulness was not significant. Talitha et al. (2026) likewise found that perceived ease of use and trust significantly affect digital payment intention, whereas perceived usefulness was not significant.

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These inconsistencies indicate that the influence of technology acceptance factors may vary depending on the type of digital payment, characteristics of users, and research context. Furthermore, previous studies have tended to focus on specific forms of digital payment, such as e-wallets, QRIS, mobile banking, or particular demographic groups. Research that simultaneously examines perceived usefulness, perceived ease of use, and social influence in explaining actual digital payment user behavior among the broader community of Balikpapan City remains limited. This provides an empirical gap that warrants further investigation.

Therefore, this study aims to examine the effects of perceived usefulness, perceived ease of use, and social influence on digital payment user behavior in Balikpapan City. By focusing on actual user behavior rather than merely intention to use, this study seeks to provide a broader understanding of the factors that determine the continued utilization of digital payment systems.

LITERATURE REVIEW

Technology Acceptance Model

The Technology Acceptance Model (TAM) was developed by Davis (1989) as a theoretical framework for explaining individual acceptance and use of information technology. TAM was derived from the Theory of Reasoned Action (TRA), which proposes that an individual's behavior is influenced by attitudes and subjective norms formed through rational consideration of available information (Fishbein & Ajzen, 1975). TAM simplifies this behavioral perspective by emphasizing two primary determinants of technology acceptance: perceived usefulness and perceived ease of use (Davis, 1989).

Perceived usefulness refers to the extent to which an individual believes that using a technology will improve the performance or effectiveness of a particular activity. Perceived ease of use, meanwhile, refers to the extent to which an individual believes that using a technology will require minimal effort (Davis, 1989). These two constructs explain why individuals are more likely to accept a technology when they perceive it as beneficial and easy to operate.

The development of technology acceptance theory has subsequently produced several extensions of the original TAM. TAM 2, developed by Venkatesh and Davis (2000), incorporated social influence processes, including subjective norm, voluntariness, and image, as well as cognitive instrumental processes. Subsequently, Venkatesh et al. (2003) developed the Unified Theory of Acceptance and Use of Technology (UTAUT), which integrated several technology acceptance theories and

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included social influence as one of its major determinants. TAM was further developed into TAM 3, which provides a more comprehensive explanation of factors affecting perceived ease of use (Venkatesh & Bala, 2008). These developments demonstrate that technology acceptance is not solely determined by individual perceptions but may also be shaped by social and contextual factors.

In the context of digital payment, TAM provides a relevant theoretical foundation because users evaluate whether digital payment technology provides meaningful benefits and whether it can be used without significant difficulty. At the same time, the influence of the surrounding social environment can contribute to the formation of user behavior. Therefore, this study incorporates perceived usefulness, perceived ease of use, and social influence to explain digital payment user behavior.

Digital Payment

Digital payment refers to financial transactions conducted through digital or online facilities without the physical exchange of cash (Khando et al., 2023). Digital payment systems utilize technologies such as the internet, mobile devices, electronic cards, and other digital platforms to facilitate transactions between payment providers and users (Calderon, 2025). The development of digital payment is closely associated with the increasing use of information technology and the internet in economic activities.

Digital payment includes various forms, such as mobile payment, e-wallets, debit and credit cards, QRIS, and online payment systems (Fadhilah, 2025). The adoption of these systems offers convenience, transaction speed, and efficiency, while also supporting the development of financial inclusion by expanding access to financial services (Delviana et al., 2025). As digital payment becomes increasingly integrated into everyday transactions, users' behavior toward these systems becomes an important area of study.

The adoption of digital payment represents not only a technological transformation but also a behavioral transformation. Individuals increasingly replace or complement cash transactions with digital payment because of perceived benefits and convenience. Previous literature indicates that perceived usefulness and perceived ease of use are among the most frequently examined determinants of digital payment adoption, with TAM being one of the dominant theoretical approaches used to explain this phenomenon (Gaur & Saxena, 2025).

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Perceived Usefulness

Perceived usefulness is one of the principal constructs of TAM and refers to the degree to which an individual believes that the use of a particular technology can improve the effectiveness or performance of an activity (Davis, 1989; Purwanto et al., 2020). The concept emphasizes the subjective evaluation made by users regarding the benefits obtained from technology use. Individuals tend to accept and utilize technology when they believe that the technology provides tangible value and improves the efficiency of their activities (Biduri et al., 2021).

In the context of digital payment, perceived usefulness can be reflected in users' perceptions that digital payment enables faster transactions, saves time, facilitates payments, and provides greater efficiency in everyday financial activities. Permana et al. (2021) found that perceived usefulness significantly influences user behavior in e-wallet usage. Similar evidence was reported by Agustine and Sunaryanto (2026), who found that perceived usefulness affects intention to use QRIS. These findings suggest that the perceived benefits of digital payment can become an important determinant of users' willingness to use the technology.

When users perceive that digital payment provides clear advantages over conventional payment methods, they are more likely to develop positive attitudes and behavioral tendencies toward its use. Therefore, higher perceived usefulness is expected to encourage stronger digital payment user behavior.

Perceived Ease of Use

Perceived ease of use refers to the degree to which an individual believes that using a particular technology will require little effort (Davis, 1989). This construct emphasizes the user's perception regarding the simplicity, clarity, and ease of interaction with a technological system. Users are generally less willing to adopt technologies that are perceived as complicated or difficult to understand (Rahayu, 2022).

In digital payment systems, perceived ease of use can be reflected in the ease of accessing applications, understanding available features, navigating interfaces, and completing transactions without significant technical difficulties. A simple and intuitive system can reduce psychological barriers and increase users' confidence in using digital payment technology (Purwanto et al., 2020; Siswoyo & Irianto, 2023).

Empirical evidence supports the importance of perceived ease of use in digital payment adoption. Biduri et al. (2021) found that perceived ease of use affects intention to use e-money. Kartika et al. (2023) also demonstrated that perceived ease of use

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positively affects the intention to use digital payment. Similarly, Rachmawati and Ni Made Adi (2025) found that ease of use positively affects decisions to use e-wallets. These findings indicate that digital payment systems that are easy to learn and operate are more likely to be accepted and repeatedly used by individuals.

Social Influence

Social influence describes the extent to which individuals perceive that important people or groups around them encourage or expect them to use a particular technology (Venkatesh & Davis, 2000). The concept is closely related to subjective norm in TRA, which emphasizes that individual behavior can be influenced by the opinions and expectations of people considered important by the individual (Fishbein & Ajzen, 1975).

In the context of digital payment, social influence may originate from family, friends, colleagues, communities, or other social groups. Individuals may be encouraged to adopt digital payment when people around them actively use the technology or recommend it. Social influence can become particularly important when digital payment has become a common practice within a particular social environment (Sunarya, 2022).

Previous studies have provided empirical support for the role of social influence in digital payment behavior. Sunarya (2022) found that social influence positively affects behavioral intention and use behavior of e-wallet users. Kartika et al. (2023) also emphasized the importance of social influence in encouraging digital payment usage. More recently, Hanafi et al. (2026) found that social influence positively affects continuance intention toward digital payment applications. These findings indicate that individuals' decisions to use digital payment may be strengthened by support, recommendations, and behavioral patterns within their social environment.

Previous Studies and Research Gap

Previous research has provided substantial evidence regarding the determinants of digital payment adoption. Permana et al. (2021) found that perceived usefulness and perceived ease of use positively affect e-wallet user behavior. Desvronita (2021) similarly demonstrated that perceived usefulness and perceived ease of use significantly influence e-wallet usage intention. Biduri et al. (2021) found that perceived usefulness, perceived ease of use, and trust influence intention to use e-money.

Other studies have expanded TAM by incorporating social influence and other external factors. Sunarya (2022) found that perceived usefulness, perceived ease of use, trust, social influence, and promotion positively affect behavioral intention and use

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behavior of digital wallet services. Sholihah and Nurhapsari (2023) demonstrated that perceived usefulness and perceived ease of use positively affect QRIS usage intention among MSMEs. Rachmasari et al. (2023) also found that perceived usefulness and perceived ease of use affect behavioral intention and satisfaction in e-wallet usage.

More recent studies reveal that the effects of these variables are not always consistent. Ananda and Lestari (2025) found that perceived ease of use and social influence significantly influence e-wallet usage intention, whereas perceived usefulness was not significant. Similarly, Talitha et al. (2026) found that perceived ease of use and trust significantly affect digital payment intention, while perceived usefulness was not significant. Agustine and Sunaryanto (2026) found that perceived usefulness affects QRIS usage intention, whereas social influence was not significant. In contrast, Hanafi et al. (2026) found that perceived usefulness, perceived ease of use, and social influence all positively affect continuance intention toward the LinkAja application.

These differences indicate that the determinants of digital payment behavior may depend on the characteristics of the technology, users, and research context. Furthermore, many previous studies have concentrated on particular payment platforms, such as e-wallets, QRIS, or specific user groups. Consequently, there remains a need for research examining digital payment as a broader category of payment technology and focusing on actual user behavior within a specific local context.

This study addresses this gap by simultaneously examining perceived usefulness, perceived ease of use, and social influence as determinants of digital payment user behavior among the community of Balikpapan City. Unlike studies that primarily examine intention to use, this study focuses on user behavior as an actual manifestation of technology utilization. Thus, the study is expected to contribute additional empirical evidence to the literature on technology acceptance and digital payment behavior**.**

Hypothesis Development

Perceived Usefulness and Digital Payment User Behavior

According to TAM, perceived usefulness is a fundamental determinant of technology acceptance because individuals tend to use technology when they believe that it provides meaningful benefits (Davis, 1989). In digital payment, users who perceive that digital transactions are faster, more efficient, and more practical are expected to have a stronger tendency to use digital payment in their daily activities. Empirical studies by Permana et al. (2021) and Agustine and Sunaryanto (2026) provide support for the

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positive relationship between perceived usefulness and digital payment-related behavior. Therefore, the following hypothesis is proposed:

H1: Perceived usefulness has a positive and significant effect on digital payment user behavior.

Perceived Ease of Use and Digital Payment User Behavior

Perceived ease of use reflects the extent to which users believe that a technological system can be operated without substantial effort (Davis, 1989). Digital payment systems that provide simple interfaces, clear features, and uncomplicated transaction procedures are more likely to be accepted and used by individuals. Previous studies have demonstrated that perceived ease of use positively affects digital payment adoption and usage intention (Biduri et al., 2021; Kartika et al., 2023; Rachmawati & Ni Made Adi, 2025). Accordingly, users who perceive digital payment as easy to learn and operate are expected to demonstrate stronger actual usage behavior.

H2: Perceived ease of use has a positive and significant effect on digital payment user behavior.

Social Influence and Digital Payment User Behavior

Social influence explains how the opinions, expectations, and behavior of people surrounding an individual can affect technology adoption (Venkatesh & Davis, 2000). In digital payment usage, individuals may be encouraged to adopt and continue using digital payment when family members, friends, colleagues, or other social groups actively use or recommend such services. Previous research by Sunarya (2022) and Hanafi et al. (2026) demonstrates that social influence can positively affect digital payment-related behavior. Therefore, stronger social support and encouragement are expected to increase individuals' tendency to use digital payment in their daily transactions.

H3: Social influence has a positive and significant effect on digital payment user behavior.

RESEARCH METHOD

Operational Definition of Variables

Variables are characteristics or attributes that may vary across individuals or situations (Bougie & Sekaran, 2019). This study consists of three independent variables,

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namely perceived usefulness, perceived ease of use, and social influence, and one dependent variable, namely digital payment user behavior.

Digital Payment User Behavior

Digital payment user behavior refers to the actual actions performed by individuals when using digital payment services in their daily transactions (Rachmasari et al., 2023). This variable reflects actual use rather than merely the intention to use digital payment technology (Davis, 1989). It is measured using five indicators adapted from Rohman et al. (2023) and Rachmasari et al. (2023): (1) actual usage, (2) usage intensity, (3) usage variety, (4) usage preference, and (5) usage continuity. Each indicator is measured using a five-point Likert scale.

Perceived Usefulness

Perceived usefulness refers to the extent to which an individual believes that using a technology can improve the effectiveness and performance of activities (Davis, 1989). In digital payment services, it reflects the benefits perceived by users, such as faster and more effective transactions (Arifah & Widajantie, 2024). This variable is measured using four indicators adapted from Apriani et al. (2025): (1) transaction speed, (2) usage benefits, (3) transaction effectiveness, and (4) transaction productivity. A five-point Likert scale is used.

Perceived Ease of Use

Perceived ease of use refers to the extent to which an individual believes that using a technology requires minimal effort (Davis, 1989). It represents the ease of learning, understanding, and operating digital payment services. This variable is measured using five indicators adapted from Ananda and Lestari (2025): (1) ease of use, (2) ease of learning, (3) low effort required, (4) clarity of interface and information, and (5) ease of understanding. Each indicator is measured using a five-point Likert scale.

Social Influence

Social influence refers to the extent to which individuals perceive that important people or their social environment encourage them to use a particular technology (Spilbergs, 2025). It may originate from family, friends, colleagues, or prevailing social norms. This variable is measured using five indicators adapted from Ananda and Lestari

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(2025): (1) recommendations from close people, (2) external social influence, (3) environmental habits, (4) outlet payment conditions, and (5) limitations of cash payments. A five-point Likert scale is applied.

Scope of the Study

This study focuses on factors influencing digital payment user behavior using the Technology Acceptance Model (TAM) approach. The independent variables are perceived usefulness, perceived ease of use, and social influence, while digital payment user behavior is the dependent variable. The respondents are active digital payment users residing in Balikpapan City. The study focuses on individual user behavior and does not examine technical aspects of digital payment systems or provider policies. The findings are also limited to the characteristics of users and the research period.

Research Design

This study employs a quantitative research approach. Primary data are collected through a survey using a structured questionnaire and measured using a five-point Likert scale. The collected data are statistically analyzed using SmartPLS to examine the relationships between the research variables and test the proposed hypotheses.

Population and Sample

Population

The population consists of digital payment users residing in Balikpapan City. Since official data on the total number of digital payment users in Balikpapan are not available, the population is considered unknown (unknown population).

Sample

The study applies purposive sampling based on predetermined criteria. Respondents must: (1) reside in Balikpapan City, (2) be at least 17 years old, and (3) actively use digital payment services, with at least one transaction within the specified reference period. The sample size is determined based on the guidelines of Hair et al. (2019) for PLS-SEM. With 19 indicators, the recommended sample ranges from 95 to 190 respondents. This study uses the 10-times indicator ratio, resulting in a target sample of 190 respondents.

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Data Collection Method

The study uses primary data collected directly from respondents through an online questionnaire. The questionnaire is distributed through Google Forms and social media platforms. Respondents' perceptions are measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Screening questions are included to ensure that respondents meet the predetermined sampling criteria.

Instrument Pilot Test

Before the main survey, the questionnaire is tested through two pilot-test stages, each involving 30 respondents who meet the sampling criteria. The pilot test aims to evaluate the validity, reliability, clarity, and suitability of the research instrument.

The instrument is evaluated using SmartPLS based on the following criteria:

1. Convergent validity: outer loading ≥ 0.70 and AVE ≥ 0.50.
2. Discriminant validity: HTMT < 0.90.
3. Reliability: Cronbach's alpha and composite reliability ≥ 0.70.

The first pilot test identified several indicators that did not meet the required criteria. Therefore, the questionnaire was revised by improving the wording and adding indicators, particularly for social influence and digital payment user behavior. A second pilot test was then conducted.

The second pilot test demonstrated improved measurement quality. All constructs met the required validity and reliability criteria, indicating that the revised instrument was suitable for the main data collection.

Data Analysis Method

The data are analyzed quantitatively using SmartPLS. The analysis consists of evaluating the measurement model (outer model), structural model (inner model), and hypothesis testing.

Outer Model

Convergent Validity

Convergent validity assesses the extent to which indicators adequately represent their respective constructs. It is evaluated using outer loading and Average Variance Extracted (AVE). An outer loading of ≥ 0.70 and AVE of ≥ 0.50 are considered acceptable (Hair et al., 2022).

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Discriminant Validity

Discriminant validity assesses whether a construct is empirically distinct from other constructs in the model. It is evaluated using the Heterotrait-Monotrait Ratio (HTMT), with a value below 0.90 indicating acceptable discriminant validity (Hair et al., 2022).

Reliability

Reliability evaluates the internal consistency of the indicators within each construct. A construct is considered reliable when both Cronbach's alpha and composite reliability are ≥ 0.70 (Hair et al., 2022).

Inner Model

Coefficient of Determination (R^2)

R^2 measures the extent to which the independent variables explain the variance of the dependent variable. Values of 0.75, 0.50, and 0.25 indicate substantial, moderate, and weak explanatory power, respectively (Hair et al., 2022).

Effect Size (f^2)

Effect size (f^2) assesses the contribution of each independent variable to the dependent variable. Values of 0.02, 0.15, and 0.35 indicate small, medium, and large effects, respectively (Hair et al., 2022).

Hypothesis Testing

Hypotheses are tested using path coefficients and bootstrapping in SmartPLS. The significance of the relationships between variables is determined based on a t-statistic > 1.96 and a p-value < 0.05 at a 5% significance level (Hair et al., 2022).

Results and Discussion

Respondent Characteristics

This study involved 190 respondents who met the predetermined criteria. The respondents were residents of Balikpapan, aged at least 17 years, and had used digital payment services at least once during the previous week. Data were collected through an online questionnaire distributed using Google Forms and subsequently analyzed using SmartPLS 4. Table 1 presents the characteristics of the respondents.

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Table 1. Respondent Characteristics

Characteristics	Category	Percentage
Residence	Balikpapan	23.7%
	Balikpapan Selatan	10.0%
	Balikpapan Timur	8.9%
	Balikpapan Utara	8.9%
	Balikpapan Barat	5.3%
	Balikpapan Kota	5.3%
	Balikpapan Tengah	2.1%
Age	17–25 years	73.7%
	26–35 years	14.7%
	36–45 years	7.4%
	46–55 years	2.6%
	56–65 years	1.6%
Gender	Male	43.7%
	Female	56.3%
Occupation	Student	51.6%
	Employee	18.4%
	Entrepreneur	14.2%
	Homemaker	6.8%
	Others	8.9%

Source: Processed primary data (2026)

The respondent profile indicates that the sample was predominantly composed of individuals aged 17–25 years and students. Female respondents represented 56.3% of the sample, while male respondents accounted for 43.7%. The dominance of younger respondents is relevant to the context of this study because younger users tend to be more familiar with digital technologies and digital transaction systems.

In terms of digital payment usage, QRIS was the most frequently used payment method, reported by 81.6% of respondents, followed by mobile banking at 65.3%, e-wallets at 43.7%, and e-money at 25.8%. These figures indicate that respondents generally used more than one type of digital payment service.

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Table 2. Digital Payment Services Used by Respondents

Digital Payment Type	Percentage
E-wallet	43.7%
QRIS	81.6%
Mobile banking	65.3%
E-money	25.8%
Others	10.0%

Source: Processed primary data (2026)

The high proportion of QRIS and mobile banking users indicates that digital payment has become an integral part of respondents' daily transactions. The use of multiple payment methods also suggests that respondents have relatively broad exposure to digital payment technologies.

Measurement Model Assessment

The measurement model was evaluated using PLS-SEM to assess the validity and reliability of the constructs. The assessment consisted of convergent validity, discriminant validity, and construct reliability.

Convergent Validity

Convergent validity was assessed using outer loading and Average Variance Extracted (AVE). An indicator is generally considered acceptable when its outer loading exceeds 0.70, while an AVE value above 0.50 indicates that a construct explains more than half of the variance of its indicators.

Table 3. Outer Loadings

Construct	Indicator	Outer Loading
Perceived Usefulness	X1.1	0.731
	X1.2	0.752
	X1.3	0.797
	X1.4	0.785
Perceived Ease of Use	X2.1	0.730
	X2.2	0.800
	X2.3	0.706

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	X2.4	0.742
	X2.5	0.742
Social Influence	X3.1	0.814
	X3.2	0.771
	X3.3	0.760
	X3.4	0.715
	X3.5	0.750
User Behavior	Y1.1	0.758
	Y1.2	0.751
	Y1.3	0.773
	Y1.4	0.785
	Y1.5	0.761

Source: Processed primary data (2026)

All indicators have outer loading values above 0.70, ranging from 0.706 to 0.814. Therefore, all indicators satisfy the required criterion and demonstrate adequate convergent validity.

Table 4. Average Variance Extracted

Construct	AVE
User Behavior	0.586
Perceived Usefulness	0.588
Perceived Ease of Use	0.554
Social Influence	0.582

Source: Processed primary data (2026)

All constructs have AVE values above 0.50. Therefore, the measurement model satisfies the criterion for convergent validity.

Discriminant Validity

Discriminant validity was assessed using the Heterotrait-Monotrait (HTMT) ratio. An HTMT value below 0.90 indicates that the constructs are empirically distinguishable from one another.

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Table 5. Heterotrait-Monotrait Ratio

Construct	Perceived Usefulness	Perceived Ease of Use	Social Influence	User Behavior
Perceived Usefulness	–			
Perceived Ease of Use	0.869	–		
Social Influence	0.654	0.579	–	
User Behavior	0.850	0.740	0.632	–

Source: Processed primary data (2026)

The highest HTMT value is 0.869, which remains below the threshold of 0.90. These results indicate that each construct has adequate discriminant validity.

Reliability

Construct reliability was evaluated using Cronbach's Alpha and Composite Reliability. A construct is considered reliable when the reliability values exceed the recommended threshold.

Table 6. Construct Reliability

Construct	Cronbach's Alpha	Composite Reliability	Conclusion
User Behavior	0.823	0.876	Reliable
Perceived Usefulness	0.767	0.851	Reliable
Perceived Ease of Use	0.799	0.861	Reliable
Social Influence	0.824	0.874	Reliable

Source: Processed primary data (2026)

All constructs demonstrate Cronbach's Alpha values above 0.70 and Composite Reliability values above 0.70. Thus, all constructs meet the reliability requirements and can be used for further structural model analysis.

Structural Model Assessment

The structural model was evaluated to examine the explanatory capability of the model and the magnitude and significance of the relationships between constructs. The assessment included R^2, effect size (f^2), and hypothesis testing.

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Coefficient of Determination (R^2)

The coefficient of determination was used to assess the extent to which the independent variables explain variations in user behavior.

Table 7. R-Square

Endogenous Construct	R^2	Adjusted R^2
User Behavior	0.530	0.522

Source: Processed primary data (2026)

The R^2 value of 0.530 indicates that perceived usefulness, perceived ease of use, and social influence collectively explain 53.0% of the variance in digital payment user behavior. The remaining 47.0% is explained by other factors that are not included in the research model. Based on the commonly used PLS-SEM interpretation, the explanatory power of the model can be considered moderate.

Effect Size (f^2)

The f^2 value was used to evaluate the relative contribution of each exogenous construct to user behavior.

Table 8. Effect Size

Exogenous Construct	User Behavior (f^2)	Effect
Perceived Usefulness	0.176	Medium
Perceived Ease of Use	0.047	Small
Social Influence	0.068	Small

Source: Processed primary data (2026)

Perceived usefulness has the largest effect size, with an f^2 value of 0.176, indicating a medium effect. Perceived ease of use has an f^2 value of 0.047, while social influence has an f^2 value of 0.068, both indicating small effects. These results suggest that perceived usefulness makes the largest relative contribution to digital payment user behavior.

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Hypothesis Testing

Hypothesis testing was conducted using the bootstrapping procedure in SmartPLS 4. The decision regarding hypothesis acceptance was based on the path coefficient, t-statistic, and p-value.

Table 9. Hypothesis Testing Results

Hypothesis	Relationship	Original Sample	T-Statistic	p-Value	Decision
H1	Perceived Usefulness – User Behavior	0.417	6.337	0.000	Supported
H2	Perceived Ease of Use – User Behavior	0.210	2.228	0.026	Supported
H3	Social Influence – User Behavior	0.217	2.459	0.014	Supported

Source: Processed primary data (2026)

The results show that all three independent variables have positive and significant relationships with digital payment user behavior. Perceived usefulness has the strongest coefficient, followed by social influence and perceived ease of use. Therefore, all three proposed hypotheses are supported.

DISCUSSION

The Effect of Perceived Usefulness on Digital Payment User Behavior

The results indicate that perceived usefulness has a positive and significant effect on digital payment user behavior in Balikpapan, with a path coefficient of 0.417 and a p-value of 0.000. The f^2 value of 0.176 also indicates that perceived usefulness has the largest relative contribution among the independent variables examined.

This finding indicates that users are more likely to use digital payment services when they perceive clear benefits from the technology. Transaction speed, time efficiency, convenience, and practicality are among the benefits that can strengthen users' willingness to utilize digital payment services in their daily activities.

The finding supports the Technology Acceptance Model proposed by Davis (1989), which identifies perceived usefulness as a key determinant of technology acceptance. When individuals believe that a technological system provides meaningful

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benefits and improves the efficiency of their activities, they are more likely to accept and use the technology.

The result is consistent with Permana et al. (2021), who found a positive relationship between perceived usefulness and e-wallet user behavior. It also supports Agustine and Sunaryanto (2026), who found that perceived usefulness encourages individuals to continue using digital payment systems. Therefore, perceived usefulness represents the most important factor examined in this study in explaining digital payment user behavior in Balikpapan.

The Effect of Perceived Ease of Use on Digital Payment User Behavior

Perceived ease of use has a positive and significant effect on digital payment user behavior, as indicated by a path coefficient of 0.210 and a p-value of 0.026. However, its f^2 value of 0.047 indicates a relatively small effect size.

The finding suggests that users are more likely to use digital payment when the system is easy to understand, learn, and operate. A simple transaction process can reduce the effort required from users and increase their confidence in conducting digital transactions.

This finding is consistent with Davis (1989), who explains that perceived ease of use reflects the extent to which an individual believes that using a technological system requires minimal effort. The result also supports Kartika et al. (2023), who found that perceived ease of use contributes positively to digital payment adoption. Similar findings were reported by Rachmawati and Ni Made Adi (2025), indicating that ease of learning and operating digital payment systems can encourage users to adopt the technology. Thus, although perceived ease of use does not have the largest effect in this study, it remains an important factor in encouraging digital payment user behavior in Balikpapan.

The Effect of Social Influence on Digital Payment User Behavior

Social influence also has a positive and significant effect on digital payment user behavior, with a path coefficient of 0.217 and a p-value of 0.014. The f^2 value of 0.068 indicates a small effect size.

This result suggests that users' decisions to utilize digital payment services can be influenced by their surrounding social environment. Recommendations, experiences, and usage patterns of family members, friends, colleagues, and other relevant social groups may encourage individuals to adopt digital payment services.

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The finding is consistent with Venkatesh and Davis (2000), who explain that technology acceptance may be influenced by the opinions and expectations of significant individuals within an individual's social environment. It also supports Sunarya (2022), who found that social influence positively affects e-wallet usage. Hanafi et al. (2026) similarly reported that social influence contributes to the continued use of digital payment applications.

Nevertheless, the effect size of social influence is lower than that of perceived usefulness. This indicates that while the social environment contributes to users' digital payment behavior, the direct benefits obtained from using the technology appear to be a stronger consideration. Users may be encouraged to try digital payment because of social influence, but their continued use is likely to depend more strongly on the practical benefits they experience.

Overall, the findings demonstrate that perceived usefulness, perceived ease of use, and social influence are significant determinants of digital payment user behavior in Balikpapan. Among these variables, perceived usefulness has the strongest contribution. This finding implies that digital payment providers should prioritize improving the functional benefits of their services while maintaining ease of use and strengthening social adoption through promotional and community-based strategies.

CONCLUSION

This study examined the effects of perceived usefulness, perceived ease of use, and social influence on digital payment user behavior in Balikpapan. Based on data from 190 respondents and analysis using PLS-SEM, the findings indicate that all three proposed factors have a positive and significant effect on digital payment user behavior.

First, perceived usefulness has a positive and significant effect on digital payment user behavior, with a path coefficient of 0.417 and a p-value of 0.000. Among the variables examined, perceived usefulness has the largest relative contribution, as indicated by its medium effect size ($f^2 = 0.176$). This finding indicates that users are more likely to use digital payment services when they perceive benefits such as greater transaction speed, efficiency, convenience, and practicality.

Second, perceived ease of use has a positive and significant effect on digital payment user behavior, with a path coefficient of 0.210 and a p-value of 0.026. However, its effect size is relatively small ($f^2 = 0.047$). This finding indicates that the ease of learning, understanding, and operating digital payment services contributes to users' willingness to use them, although its contribution is lower than perceived usefulness.

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Third, social influence has a positive and significant effect on digital payment user behavior, with a path coefficient of 0.217 and a p-value of 0.014. Its effect size is also classified as small ($f^2 = 0.068$). This result indicates that recommendations, experiences, and usage patterns within users' social environments can encourage digital payment usage.

Overall, perceived usefulness, perceived ease of use, and social influence simultaneously explain 53.0% of the variance in digital payment user behavior, with an adjusted R^2 of 0.522. Among the three factors, perceived usefulness represents the strongest determinant. These findings imply that digital payment providers should prioritize improving the functional benefits of their services while maintaining simple and user-friendly systems and strengthening social adoption through promotional and community-based strategies.

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