Review: Journal of Multidisciplinary in Social Sciences

Volume 03 No 02 February 2026
E ISSN : 3031-6375
https://lenteranusa.id/

What Drives E-Wallet Usage in Bekasi Regency? The Roles of Perceived Security and Fintech Trust

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Received : 09-02-2026 Revised : 20-02-2026 Accepted : 25-02-2026

Abstract
The development of financial technology has driven a significant transformation in payment systems from cash-based transactions to more efficient and practical digital payments. One of the fintech innovations experiencing rapid growth in Indonesia is the electronic wallet (e-wallet). Although e-wallet adoption continues to increase, the sustainability of usage behavior is strongly influenced by users' perceptions and attitudes toward system security and risk. This study aims to examine the effect of perceived security and trust in fintech on e-wallet usage behavior among residents of Bekasi Regency. This research employed a quantitative approach using a survey method. Primary data were collected through questionnaires distributed to 110 e-wallet users in Bekasi Regency. Data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS software. The results indicate that perceived security has a positive and significant effect on e-wallet usage behavior, while trust in fintech shows a positive but insignificant effect. Collectively, perceived security and trust in fintech explain 47.8% of the variance in e-wallet usage behavior. These findings suggest that security perception is the dominant factor influencing e-wallet usage, whereas trust in fintech requires longer-term experience to exert a significant impact.

Keywords: Perceived Security, Trust in Fintech, E-Wallet Usage Behavior, Financial Technology, Digital Payment

Introduction

Digital transformation in the financial sector is an inseparable phenomenon from developments in information and communication technology. This change has driven the emergence of various digital-based financial service innovations aimed at improving the efficiency, speed, and convenience of transactions. In Indonesia, the development of financial technology (fintech) has become a key driver of the shift from cash to cashless payment systems, in line with government policies supporting financial inclusion and the digital economy. Digital transformation in the financial sector is an inseparable phenomenon from developments in information and communication technology. This change has driven the emergence of various digital-based financial service innovations aimed at improving the efficiency, speed, and convenience of transactions. In Indonesia, the development of financial technology (fintech) has become a key driver of the shift from cash to cashless payment systems, in line with government policies supporting financial inclusion and the digital economy.

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An electronic wallet (e-wallet) is a fintech product that allows users to store funds electronically and make payments and transfers through digital devices. High smartphone penetration and internet access are key factors driving the rise in e-wallet use. Bekasi Regency, as a region with high economic activity and population mobility, demonstrates significant potential for e-wallet services as an alternative payment method.

However, the rise in e-wallet usage is also accompanied by increased digital security risks, such as personal data leaks, online fraud, and account misuse. This situation raises concerns for users and can influence their decisions about continued e-wallet use. Therefore, perceived security is a crucial factor influencing e-wallet usage behavior. Perceived security describes the extent to which users feel safe conducting transactions and storing financial data through digital systems. In addition to security aspects, trust in fintech also plays a crucial role in determining the sustainability of e-wallet use. User trust in service providers, the technology used, and regulations overseeing the fintech industry can reduce uncertainty and perceived risk. However, previous research has shown mixed findings regarding the influence of trust in fintech on actual e-wallet usage behavior.

Based on this background, this study aims to analyze the influence of perceived security and trust in fintech on e-wallet usage behavior among residents of Bekasi Regency. This research is expected to provide theoretical contributions to the development of fintech literature and practical contributions for service providers and regulators in improving the quality and security of e-wallet services.

Method

This study employed a quantitative approach with a survey method. The population was residents of Bekasi Regency who use e-wallets. The sampling technique used convenience sampling, with 110 respondents. Data were collected through a questionnaire with a five-point Likert scale. Data analysis was performed using PLS-SEM with the assistance of SmartPLS.

The population in this study was all residents of Bekasi Regency who use electronic wallet (e-wallet) services as a digital payment method. Given the very large and unknown population of e-wallet users, this study did not allow for the use of probability sampling techniques. Operationalization of Variables Therefore, the sampling technique used in this study was non-probability sampling with the convenience sampling method. This technique was chosen because it allowed researchers to more easily and quickly reach respondents, namely individuals who met the criteria for e-wallet users and were willing to complete the research questionnaire.

This study used primary data obtained directly from respondents through questionnaires. The questionnaires were structured based on indicators for each research variable: perceived security, trust in fintech, and e-wallet usage behavior. The questionnaires were distributed online using Google Forms to facilitate and efficiently reach a wider and more diverse range of respondents. The data analysis technique in this study used the SmartPLS software. The PLS method was chosen because it can test the relationship between latent variables simultaneously and does not require normal data distribution or a large sample size.

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Results and Discussion

Respondent Characteristics

The respondents in this study were e-wallet users in Bekasi Regency. Demographically, the respondents were predominantly in the productive age group 20-25, who have a high level of adaptability to digital technology. In terms of gender, the respondents were almost evenly matched between men and women.

Based on education level, the majority of respondents had a high school or equivalent education, indicating a relatively good level of digital literacy. In terms of occupation, respondents were predominantly private sector employees with high mobility and high transaction frequency. Furthermore, the majority of respondents reported using e-wallets regularly for daily transactions, thus the data obtained is considered representative of e-wallet usage behavior.

Table 1. Respondent Characteristics Based on Gender

Gender	Percentage
Man	49.4%
Woman	50.6%

Table 1 shows the distribution of respondents by gender. The majority of respondents were women, indicating that e-wallet usage is quite high among them (women).

Table 2. Respondent Characteristics Based on Age

Age Range	Percentage
Under 25 years old	68.2%
25 – 30 years	23.5%
Over 30 years old	8.2%
Total	100%

Table 2 shows that the majority of respondents were in the productive age range, with the largest group being under twenty-five years old. This age composition indicates that e-wallet usage is predominantly among young people.

Table 3. Respondent Characteristics Based on Education

Level of education	Percentage
High School/Vocational School	68.2%
S1/S2	21.2%
Diploma	10.6%
Total	100%

Table 3 shows that most respondents have a high school or vocational education background.

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R Square Test

Table 4. R Square Test Results

Dependent Variable	R Square	R Square Adjusted
E-Wallet Usage Behavior	0.465	0.455

Table 4 shows the R-square value, which indicates the ability of the independent variables to explain variation in the dependent variable. The R-square value of 0.465 indicates that nearly half of the variation in E-Wallet Usage Behavior can be explained by Perceived Security and Trust in Fintech, while the remainder is influenced by other factors not examined in this study. This value is classified as moderate based on criteria commonly used in social science research, thus the structural model is considered to have sufficient explanatory power.

Hypothesis Testing

Path Coefficient Test

Table 5. Path Coefficient Test Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
H1: Perceived security → E-wallet Usage	0.429	0.436	0.174	2,461	0.014
H2: Trust in fintech → E-wallet Usage	0.322	0.329	0.188	1,711	0.088

Table 5 shows the results of the research hypothesis testing. The first hypothesis, stating that Perceived Security influences E-Wallet Usage Behavior, is accepted, as indicated by t-statistics exceeding the critical threshold and p-values falling below the established significance level. These results indicate that the higher the perceived security perceived by users, the higher the public's tendency to use e-wallets in their transactions. Conversely, the second hypothesis, which states that Trust in Fintech influences E-Wallet Usage Behavior, is rejected because the resulting statistical value does not meet the required significance criteria. Nevertheless, the direction of the relationship between Trust in Fintech and E-Wallet Usage Behavior shows a positive trend, indicating that trust in fintech still has the potential to influence e-wallet usage behavior, although it is not yet statistically significant in the context of this study.

Discussion

The Influence of Perceived Security on E-Wallet Usage Behavior

The research results confirm that Perceived Security significantly influences E-Wallet Usage Behavior among the people of Bekasi Regency. This finding indicates that the higher the level of perceived security felt by users towards the e-wallet system, the greater the tendency of people to use e-wallets regularly and continuously in their daily transaction activities. This finding is in line with the research of Yang, Lu, and Gupta (2024) who found that perceived security is a major determinant of the adoption and intensity of use of digital

payment services. Personal data protection, transaction security, and strong authentication mechanisms have been shown to reduce user risk perception and increase trust in using e-wallets. Similar results were also found by Rahman and Hidayat (2025) who stated that perceived security contributes significantly to the intention and behavior of e-wallet use in developing countries, especially in communities with varying levels of digital literacy.

Zhou et al. (2025) emphasized that encryption-based security systems, two-factor authentication, and real-time fraud detection play a crucial role in shaping users' perceptions of security. Meanwhile, Kim and Park (2024) added that perceived security is not only related to the technical aspects of the system, but also to the clarity of privacy policies, transparency of data management, and the reputation of fintech service providers. The Perceived Security dimension, which encompasses personal data security, financial transaction security, fraud protection, and system reliability, has been shown to influence usage behavior through various mechanisms. Personal data security provides users with confidence that their sensitive information will not be misused. Transaction security ensures that user funds are protected from the risk of loss or system errors. Fraud protection reduces user anxiety when conducting large-value transactions, while system reliability increases the convenience and frequency of e-wallet use.

The significant influence of Perceived Security on E-Wallet Usage Behavior among Bekasi Regency residents can be explained by several reasons. First, public awareness of digital security risks is increasing along with the rise in cases of data leaks and online fraud. The significant influence of Perceived Security on E-Wallet Usage Behavior among Bekasi Regency residents can be explained by several reasons. First, public awareness of digital security risks is increasing along with the rise in cases of data leaks and online fraud. This condition makes security a primary consideration in selecting and using e-wallet services. Second, the nature of e-wallets as technology-based transaction tools makes user trust highly dependent on their perception of system security. Unlike cash transactions, digital transactions require confidence that the system can consistently protect user funds and data. Third, intense competition among e-wallet providers encourages fintech companies to emphasize security features as an added value, thereby strengthening the perception of security in the eyes of users.

These results underscore the importance for e-wallet providers in Bekasi Regency to continuously improve their security systems. Investments in security technology, user education regarding data protection, and transparent communication regarding security policies will positively impact e-wallet usage behavior.

The Influence of Trust in Fintech on E-Wallet Usage Behavior

The results of the study indicate that Trust in Fintech has not significantly influenced E-Wallet Usage Behavior, although the direction of the relationship shows a positive trend. This finding indicates that the level of trust of the Bekasi Regency community in fintech providers has not been fully internalized into consistent and intensive e-wallet usage behavior. This finding can be explained through several theoretical and empirical perspectives. Gefen et al. (2023) stated that trust in the context of digital services is a multidimensional construct that encompasses trust in technology, institutions, and regulations. When one of these dimensions is weak, the impact of trust on usage behavior is

suboptimal. In the fintech context, trust is determined not only by application performance but also by the stability of the financial system and legal protection for consumers.

Liu et al. (2025) found that many fintech users exhibit moderate levels of trust, but this trust is not yet strong enough to encourage intensive use. This indicates a gap between cognitive trust (believing that the system works) and affective trust (feeling comfortable and emotionally safe when using the service). Pobee and Ansong (2022) identified that the reputation of fintech companies, previous negative user experiences, and media coverage of digital fraud cases can undermine public trust, even if the fintech service technically meets security standards. In the context of Bekasi Regency, trust in fintech is likely still pragmatic, namely used only for specific needs without long-term commitment.

The results of this study align with Pavlou's (2003) findings, which show that trust does not always have a direct impact on usage behavior, especially when perceived risks are still relatively high. Users' lack of understanding of fintech's working mechanisms, unclear responsibilities when problems arise, and limited digital financial literacy can hinder the transformation of trust into sustainable usage behavior. Several factors may explain why Trust in Fintech has not yet had a significant impact in the context of this study. First, trust is a psychological construct that develops gradually and requires long-term user experience. Meanwhile, many respondents were still in the exploratory stage of e-wallet use.

Conclusion

This study concluded that perceived security significantly influences e-wallet usage behavior, while trust in fintech did not show a significant effect. From a managerial perspective, e-wallet service providers should strengthen perceived security by enhancing system transparency, implementing multi-layer authentication features, conducting continuous user education campaigns on digital payment safety, and developing clear incident-response communication mechanisms to maintain user confidence. E-wallet service providers are advised to continue improving system security and transparency to build user trust. This study is subject to several limitations, including the cross-sectional research design, the use of convenience sampling, and the dominance of younger respondents, which may limit the generalizability of the findings. Therefore, future research is encouraged to incorporate additional explanatory variables such as perceived risk, perceived usefulness, habit, digital literacy, and regulatory assurance, as well as to examine potential mediation or moderation mechanisms to provide a more comprehensive understanding of e-wallet usage behavior.

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