



Determinants of interest in using e-wallets during the COVID-19 pandemic

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ABSTRACT

Due to the virus COVID-19 outbreak, the government has implemented various policies to limit public activities outside the home, which has led many individuals to shift to online services. Financial Technology (FinTech) has emerged as a viable solution that utilizes digital technology, allowing people to fulfill their financial needs without face-to-face interactions with sellers. This study analyzes how perceptions of benefits, ease of use, and risks influence interest in using FinTech, specifically e-wallets. The study focuses on residents of Jabodetabek and employs a quantitative research method. Primary data was collected through questionnaires completed by 100 respondents. The findings indicate that perceptions of benefits and ease of use positively and significantly impact interest in using FinTech (e-wallets). Conversely, perceptions of risk have a negative but statistically insignificant effect on interest in using FinTech (e-wallets).

Keywords: FinTech, E-wallet, COVID-19, Interest in Using, Perceived Benefits, Perception of Ease, Perception of Risk

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Abstrak

Akibat virus COVID-19, pemerintah telah menerapkan berbagai kebijakan untuk membatasi aktivitas publik di luar rumah, yang menyebabkan banyak individu beralih ke layanan daring. Teknologi Finansial (FinTech) telah muncul sebagai solusi yang layak yang memanfaatkan teknologi digital, yang memungkinkan orang untuk memenuhi kebutuhan keuangan mereka tanpa interaksi tatap muka dengan penjual. Studi ini menganalisis bagaimana persepsi manfaat, kemudahan penggunaan, dan risiko memengaruhi minat menggunakan FinTech, khususnya dompet elektronik. Studi ini berfokus pada penduduk Jabodetabek dan menggunakan metode penelitian kuantitatif. Data primer dikumpulkan melalui kuesioner yang diisi oleh 100 responden. Temuan menunjukkan bahwa persepsi manfaat dan kemudahan penggunaan berdampak positif dan signifikan terhadap minat menggunakan FinTech (dompet elektronik). Sebaliknya, persepsi risiko memiliki efek negatif tetapi secara statistik tidak signifikan terhadap minat menggunakan FinTech (dompet elektronik).

Kata Kunci: FinTech, E-wallet, COVID-19, Interest in Using, Perceived Benefits, Perception of Ease, Perception of Risk

1. Introduction

The world faces the COVID-19 pandemic, which has emerged as a new challenge in the health sector since the end of 2019. This disease is caused by the SARS-CoV-2 virus, which was first detected in Wuhan, Hubei Province, China, on December 31, 2019. This virus spread very quickly to almost all parts of the world, including Indonesia, which made the World Health Organization (WHO) on March 9, 2020, declare COVID-19 a pandemic. In Indonesia, President Joko Widodo announced that COVID-19 had begun to spread on March 2, 2020 (Decree of the Minister of Health of the Republic of Indonesia, 2020).

The emergence of the term FinTech has become a significant innovation in the financial services industry. According to OJK, FinTech refers to technological innovations that enhance financial services. Examples of FinTech products include e-wallets and online loans, which leverage the Internet and were first introduced in 1966 to facilitate business transactions. There were notable developments in FinTech during the 1980s when banks began to adopt this technology. The expansion continued in the 1990s with the rise of the Internet, which led to the introduction of services like online banking.

In Indonesia, regulations regarding FinTech have been standardized with the issuance of Circular Letter No. 18/22/DKSP, which outlines the implementation of Digital Financial Services (LKD). This circular defines FinTech services as those involving online payment systems through mobile or web technologies, often in partnership with third parties, to support inclusive finance. Data from APJII (Association of Indonesian Internet Service Providers) indicates that the digital shift in Indonesia during the COVID-19 pandemic has significantly increased internet usage. This surge has supported working from home (WFH), online schooling, and online shopping. A report by AppAnnie highlights a positive trend in FinTech during the pandemic, showing a 44% increase in monthly active FinTech users in Indonesia in the third quarter of 2020.

FinTech services that have seen growth include FinTech lending and e-money, mainly due to the need for minimal physical interaction, aligning with government efforts to limit the spread of COVID-19. The usage of e-wallets in FinTech during the Implementation of Community

Activity Restrictions (PPKM) has also shown significant growth, with a survey indicating transaction increases from 2015 to 2021. It is anticipated that FinTech will play a crucial role in mitigating the effects of COVID-19. E-wallet users have diverse experiences and perceptions regarding these services' benefits, convenience, and risks.

This study aims to address several ongoing debates and gaps. First, while many studies emphasize the importance of perceived usefulness and ease of use in e-wallet adoption (Abushamleh et al., 2021; Hasbolah et al., 2023; Tian et al., 2023), further exploration is needed to understand how these advantages are perceived across various demographics and cultural contexts. Moreover, most studies focus on specific demographics, such as Generation Z, highlighting the importance of tailoring e-wallet features to meet the preferences of different user groups (Do & Do, 2020). Hence, more research is needed to understand how different generations perceive and adopt e-wallets. Similarly, the researchers emphasized the need for more studies on diverse populations, including underrepresented groups and various geographical regions, to better understand how perceived risk affects e-wallet adoption in different contexts. A study in India highlighted the challenges of reducing the effort required to use e-wallets and transforming this habit into a more willingly performed behavior, indicating potential methodological issues in studying e-wallet adoption (Soodan & Rana, 2020). Hence, the present study addresses the research gap on perceived risk and interest in using e-wallets to provide valuable insights for e-wallet providers, policymakers, and researchers in understanding electronic wallet adoption in various contexts, especially among Indonesian customers.

2. Theoretical background

The Technology Acceptance Model (TAM), developed by Davis, seeks to explain how users comprehend and accept information technology. This model is based on the Theory of Reasoned Action (TRA), proposed by Ajzen and Fishbein in 1980 (Jogiyanto, 2007). TRA highlights that the influence of the variables in both models is highly dependent on individual beliefs about the benefits of technology, as noted by Lewis et al. (2003). TAM offers a straightforward explanation of the factors that affect users' adoption of information technology (Davis, 1989).

Within the context of TAM, two key concepts emerge: perceived usefulness and perceived ease of use. Perceived usefulness refers to the belief that using technology can enhance individual performance (Davis, 1989), while perceived ease of use involves the user's ability to utilize technology without difficulty (Jogiyanto, 2007). Additionally, perceived risk plays a crucial role in technology adoption, as it relates to the uncertainty and potential negative consequences of using a product (Dowling & Staelin, 1994). Featherman and Pavlou (2003) further emphasized that risk perception encompasses the experience of loss and anticipating potential risks.

The intention to use technology reflects an individual's inclination toward it, which is influenced by personal, social, and emotional factors. Indicators of this intention include interest, long-term engagement, and transactional motivation. Financial Technology (FinTech) represents the application of technology within the financial system, leading to the creation of new products, services, and business models. FinTech significantly impacts monetary stability and the financial system while enhancing payment systems' efficiency, security, and reliability.

Software and digital platforms are central to delivering financial services to consumers. With its tremendous potential, FinTech offers speed and reliability and presents challenges for traditional businesses. Recognized as an innovation in financial services, FinTech integrates technological elements with financial features, providing solutions that are accessible and beneficial.

Perceived usefulness and interest in using E-Wallet.

Perceived usefulness is a crucial factor in the adoption of e-wallets. It refers to how individuals believe using an e-wallet will improve their performance or provide significant advantages. Numerous studies indicate that perceived usefulness strongly affects the intention to use and the actual adoption of e-wallets. First, users are more likely to adopt e-wallets if they believe these tools will make transactions faster, more efficient, and more convenient (Yang et al., 2021). Second, the perceived benefits of e-wallets also include added value, such as promotional offers and the convenience of cashless transactions (Jingnan et al., 2023). Additionally, compatibility, perceived convenience, trust, reputation, usefulness, ease of use, and social influence impact the intention to use e-wallets (Do & Do, 2020).

Perceived usefulness is a critical factor that influences the adoption of e-wallets. Users are more likely to embrace digital payments when they perceive them as beneficial for everyday transactions. Research, including a study conducted in Indonesia, shows that perceived usefulness—along with ease of use, social influence, compatibility with lifestyle, and trust—significantly affects both the intention to use and the actual adoption of e-wallets. These factors enhance user acceptance, making them essential for adopting fintech solutions among adults. Furthermore, perceived usefulness often mediates the relationship between other variables, such as social influence, technology readiness, government support, and the intention to use e-wallets. This indicates that even when external factors are favorable, the perceived usefulness of the e-wallet is vital for translating these factors into actual usage intentions (Ahmad et al., 2023).

H1: Perceived usefulness positively affect interest in using E-Wallet.

Research consistently demonstrates that perceived ease of use plays a fundamental role in e-wallet adoption by shaping user attitudes and behavioral intentions. When potential users perceive the technology as simple, they develop more positive evaluations and stronger inclinations to incorporate it into their financial activities (Kusen et al., 2023; Yang et al., 2021). This relationship extends beyond direct effects, as ease of use also serves as a psychological mechanism that transforms abstract considerations like system trustworthiness and perceived benefits into actual usage behaviors. Furthermore, the intuitive nature of well-designed e-wallet interfaces creates seamless transaction experiences that facilitate initial adoption and promote continued engagement through enhanced user satisfaction. These findings collectively highlight how technical simplicity functions as both a primary adoption driver and a critical factor that amplifies other positive influences on technology acceptance in the financial domain (Hansopaheluwakan et al., 2021).

H2: Perceived ease of use positively affects interest in using E-Wallet.

Perceived risk in e-wallets refers to users' concerns about potential adverse outcomes, which include privacy risk (data security), security risk (fraud or hacking), financial risk (monetary loss), performance risk (app reliability), and psychological risk (stress from using new technology). These factors influence user trust and adoption of digital payment services. For example, research in Indonesia found that perceived risk, trustworthiness, ease of use, and application performance are key factors influencing users' intentions to adopt e-wallets. Similarly, a study in Malaysia identified that perceived risk, trust, and perceived service quality significantly impact consumers' behavior toward using e-wallets, especially Alipay, in an emerging market (Meyta Dewi et al., 2021; Tian et al., 2023). The perceived risk significantly impacts user interest in adopting e-wallets through various interconnected factors. Security concerns about fraud and hacking create hesitation, especially with negative media coverage. Privacy worries about personal data sharing further contribute to reluctance. Users also fear financial losses from technical issues and question the reliability of e-wallets compared to cash transactions. These risk perceptions lead to behavioral biases, such as loss aversion, where the fear of adverse outcomes overshadows the benefits of convenience.

H3: Perceived risk negatively related to interest in using E-Wallet

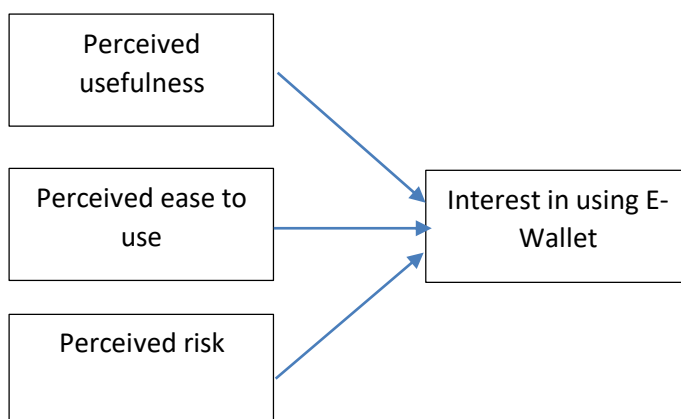


Figure 1. Research model

3. Methods

This study examines the adoption of e-wallets by analyzing key factors that influence user behavior. It focuses on perceived risk, which includes users' concerns about privacy (data security), security (fraud and hacking), potential financial loss, performance reliability, and the psychological stress associated with using technology. Additionally, the study looks at perceived usefulness in terms of transaction convenience and efficiency and perceived ease of use related to how user-friendly the system is. The research utilized a purposive sampling method, selecting 100 students who had actively used e-wallets in the past three months to ensure that the insights gathered were relevant and based on recent experiences (Sugiono et al., 2023; Thalib et al., 2023).

Table 1. Respondent Analysis

Category	Number	Percentage
Gender		
Female	57	57%
Male	43	43%
Age		
17-27 years	59	59%
28-38 years	21	21%
39-49 years	16	16%
> 50 years	4	4%
Occupation		
Student/College Student	31	31%
Private Employee	29	29%
Civil Servant/State-Owned Enterprise Employee	24	24%
Teacher	9	9%
Housewife	7	7%
FinTech Usage Frequency		
1-5 times	19	19%
6-10 times	20	20%
> 10 times	61	61%

This study utilizes a quantitative method grounded in positivism. This approach is applied to analyze a specific population or sample, with the sampling process guided by predetermined criteria. Data is collected using research instruments and then analyzed quantitatively or statistically to test the formulated hypothesis (Hendryadi et al., 2019). The survey included 43% male (43 individuals) and 57% female (57 individuals) respondents, with the majority (59%) aged 17–27. The remaining age groups were distributed as follows: 28–38 (21%), 39–49 (16%), and 50+ (4%). Occupationally, respondents identified as students (31%), private employees (29%), civil servants or state-owned enterprise employees (24%), teachers (9%), and housewives (7%). Regarding e-wallet usage frequency, 19% reported 1–5 transactions, 20% reported 6–10 transactions, and the majority (61%) used them more than 10 times, highlighting demographic diversity and growing reliance on FinTech solutions (see Table 1).

Measurement

Perceived Usefulness (PU) refers to the extent to which users believe that adopting an e-wallet will improve their transaction efficiency and convenience. It assesses benefits such as "Using the e-wallet improves my transaction efficiency" and "The e-wallet is useful for my daily transactions," reflecting how users evaluate its practical advantages in enhancing financial activities (Jameel et al., 2022; Malik & Annuar, 2021). Perceived Ease of Use (PEU) refers to how

easy users believe it is to use an e-wallet with minimal effort. It evaluates the system's user-friendliness and simplicity (Malik & Annuar, 2021; Senali et al., 2023). For example, users might assess statements like "The e-wallet is easy to use" or "Learning to operate the e-wallet is straightforward."

Perceived Risk (PR) refers to users' concerns about potential adverse outcomes when using e-wallets. This includes worries about security vulnerabilities, privacy breaches, and financial losses (Malik & Annuar, 2021; Senali et al., 2023). For example, "I am concerned about the security of my financial information when using e-wallets" and "E-wallet transactions could fail unexpectedly" reflect users' evaluations of the risks of adopting digital payments. Interest in using the Intention to Use (IU) measure indicates an individual's likelihood of adopting an e-wallet for future transactions (Senali et al., 2023). Example statements might include: "I plan to use this e-wallet regularly" and "I would recommend this e-wallet to others." These statements capture users' inclination to continue or increase their use of the digital payment system.

4. Results and implications

4.1. Results

The descriptive statistics (Table 2) indicate that respondents view e-wallets as applicable, with a mean score of 3.36 and a standard deviation of 0.293. They also find them moderately easy to use, with a mean score of 3.02 and a standard deviation of 0.235. The low standard deviations suggest a strong consensus among respondents regarding these positive evaluations. In contrast, perceived risk scores were significantly higher, with a mean of 3.82 and a standard deviation of 0.271. These results suggest that many users are concerned about the security and financial risks associated with e-wallet usage. Interest in using e-wallets received a moderate overall agreement, with a mean score of 3.24. However, the much more significant standard deviation of 0.891 indicates considerable variation among respondents. While some show a strong interest in using e-wallets, others remain hesitant.

Table 2. Decriptive statistics

Variable	Mean	S.D
Perceived usefulness	3.36	0.293
Perceived ease to use	3.02	0.235
Perceived risk	3.82	0.271
Interest to use	3.24	0.891

The regression analysis indicates a baseline interest level of 5.478 in using FinTech (e-wallets) when perceived benefits, convenience, or risk are not considered. Both perceived benefits (coefficient = 0.336, t-value = 3.164, p-value = 0.002) and convenience (coefficient = 0.302, t-value = 3.257, p-value < 0.05) demonstrate statistically significant positive relationships with interest in FinTech adoption, exceeding the critical t-value of 1.290. On the other hand, perceived risk shows a negative relationship (coefficient = -0.082) that is not statistically significant (t-value = -1.736, p-value = 0.085). The model explains 45.5% of the variance in interest in FinTech usage (Adjusted $R^2 = 0.455$), suggesting that other factors not examined

account for the remaining 54.5% of the variation. These findings highlight the importance of perceived benefits and convenience as key drivers of e-wallet adoption. In contrast, perceived risk appears to have minimal influence on users' intentions (see Table 3).

Table 3. Regression results

	β	SE	b	t	Sig.
Perceived usefulness	0.336	0.106	0.339	3.164	0.002
Perceived ease to use	0.302	0.093	0.296	3.257	0.002
Perceived risk	-0.082	0.047	-0.169	-1.736	0.086
R Square			0.455		

4.2. Discussion

The digital transformation of financial services has fundamentally changed payment systems worldwide, with e-wallets emerging as a popular method for cashless transactions. The COVID-19 pandemic was a significant catalyst for this change, as health concerns and social distancing measures made contactless payments not only preferable but often essential. However, the adoption rates of e-wallets vary significantly across different demographics. This variation is influenced by three key psychological factors: perceived usefulness, ease of use, and perceived risk. Understanding these factors is crucial for fintech companies looking to expand their user base, policymakers promoting financial inclusion, and businesses transitioning to digital payment systems.

The study's findings strongly support existing theoretical frameworks related to e-wallet adoption, particularly highlighting the crucial role of perceived usefulness as established by Yang et al. (2021) and Jingnan et al. (2023). Users consistently show higher adoption rates when they recognize clear benefits such as transaction efficiency, cashless convenience, and promotional value. These findings align closely with previous research on expectations for performance improvement. This relationship was especially evident during the COVID-19 pandemic, where the practical advantages of contactless payments significantly accelerated adoption rates.

The research also confirms Do & Do's (2020) multidimensional model of adoption drivers, with perceived convenience emerging as another vital factor. Their research indicates that in collectivist societies, the perceived usefulness of technology typically relies on its social validation and alignment with group norms. Users prefer payment solutions that offer intuitive interfaces and seamless cross-platform functionality, reinforcing the theoretical proposition that ease of use is a fundamental catalyst for adoption. These findings validate technology acceptance models considering usefulness and convenience as primary behavioral determinants.

Regarding perceived risk, the study confirms the theoretical frameworks proposed by Meyta Dewi et al. (2021) and Tian et al. (2023), which address security concerns and trust factors. However, it reveals an important practical nuance: while users acknowledge potential risks—including data security issues, fraud potential, and system reliability—particularly in emerging markets like Indonesia and Malaysia—these concerns seem secondary to the functional benefits when making adoption decisions. This suggests a possible evolution in

consumer risk assessment frameworks, where perceived utility may increasingly outweigh traditional security concerns in fintech adoption scenarios.

These findings emphasize the importance of prioritizing and communicating functional benefits in product design and marketing strategies for fintech developers. User experience optimization may yield more significant returns than extensive risk mitigation campaigns. While maintaining robust security standards is essential for policymakers, promoting the tangible benefits of cashless systems could be more effective than overemphasizing risk factors in public adoption campaigns. Financial institutions and technology providers can reduce risk perceptions by clearly communicating their security protocols, displaying authentication processes during transactions, and launching educational initiatives showcasing safety features. Implementing strong consumer protection measures, such as transaction guarantees and responsive fraud resolution systems, has effectively overcome initial hesitations and encouraged risk-averse potential users to become active adopters.

4.3. Implications

The relationship between perceived ease of use and e-wallet adoption presents several important considerations for developers and financial service providers. Achieving the right balance between simplicity and security is a fundamental design challenge; focusing too much on either aspect can hinder user adoption. Systems perceived as overly simplistic may raise security concerns, while those with overly complex security measures can create usability barriers. Digital literacy is critical in how users perceive and adopt e-wallet technologies. This indicates that interface design should cater to varying levels of technological familiarity through adaptive user experiences. More experienced users may appreciate shortcuts and advanced features, while novice users benefit from guided workflows and integrated educational elements.

The findings suggest that security features should be visible enough to reassure users without causing friction during transactions. Transparent communication about security measures and an intuitive design that makes these protections noticeable yet unobtrusive can help build trust while maintaining ease of use. These insights highlight the need for user experience strategies that simultaneously address the technical, psychological, and educational aspects of digital payment adoption. Successful implementation requires recognizing that perceived ease of use is not merely about a simple interface; it also involves fostering a sense of competence and confidence among users across different demographic groups and levels of technological familiarity.

The convenience and efficiency of e-wallets significantly enhance their perceived usefulness, making them an attractive alternative to traditional payment methods. Users appreciate the ability to perform transactions quickly and seamlessly, which improves their overall experience and increases their interest in adopting digital payment solutions. This perception of usefulness not only influences initial adoption but also affects long-term usage behaviors. Research shows that perceived usefulness positively shapes users' attitudes toward e-wallets, fostering greater acceptance and intention to use them. A positive attitude is crucial for widespread adoption, as users are more likely to embrace technologies they perceive as beneficial. Moreover, the ongoing success of e-wallet services relies on continuous user

engagement, which is reinforced when individuals consistently find the technology valuable for their daily transactions. These findings suggest that e-wallet providers should prioritize features that maximize utility, such as fast processing times, seamless integration with daily activities, and value-added benefits like discounts or rewards. By aligning product design with user expectations and continuously enhancing functionality, providers can sustain engagement and solidify e-wallets as a preferred payment method in the digital economy.

User psychology plays a crucial role in how risks are assessed and prioritized. Many individuals engage in a mental calculation where immediate and tangible benefits, such as financial incentives and time savings, outweigh abstract potential risks. The concrete nature of these benefits makes them more psychologically relevant when users adopt new technologies. Additionally, specific user characteristics, such as being tech-savvy or belonging to a younger demographic, often correlate with a higher tolerance for risk. For e-wallet providers, these insights suggest that emphasizing trust-building and tangible benefits may be more effective than focusing solely on risk mitigation. Platform designers should consider highlighting security features through user education rather than just through technical implementation. This approach can help users develop informed confidence in the digital payment system. The experiences during the pandemic provide valuable lessons about how contextual messaging around safety and convenience can influence technology adoption during social or economic change.

These insights reveal that perceived risk functions within a complex ecosystem of user perceptions and external factors. Its impact on adoption decisions largely depends on the presence of balancing positive influences and the broader context in which the technology is utilized. Understanding these dynamics can aid in developing more effective strategies to promote digital payment adoption across various user segments and market conditions.

5. Conclusion

The results of the study indicate that the perception of benefits and convenience has a positive and significant influence on the interest of the Jabodetabek community in using FinTech (e-wallets). Specifically, as individuals perceive more significant benefits and convenience, their desire to transact using this platform increases. However, the perception of risk has a negative but insignificant effect on user interest. Despite some concerns regarding risk, these concerns are not strong enough to deter public interest in e-wallets.

This study has several limitations that should be acknowledged. First, the sample is limited to the Jabodetabek community, comprising only 100 respondents, which means the results may not be generalizable to the entire population of Indonesia. Second, the study focuses solely on three variables: perceptions of benefits, convenience, and risk. Other factors influencing public interest in using e-wallets, such as perceptions of security, trust, or service features, were not considered. Finally, the data collected was subjective and based on questionnaires completed by respondents, which may introduce bias into the results.

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