

Original Article

Adoption of E-Wallets in Indonesia: Integrating Mindfulness into the Technology Acceptance Model

Sekar Ayu Purbondaru ^{a,*}, Fachri Eka Saputra ^a, Muhartini Salim ^a and Sularsih Anggarawati ^a

^a Department of Management, Faculty of Economic and Business, University of Bengkulu, Muara Bangka Hulu, Sumatera, 38371 Bengkulu, Indonesia; fachri_mgt@unib.ac.id (F.E.S.); muhartinisalim@unib.ac.id (M.S.); sularsih14@unib.ac.id (S.A.)

* Correspondence: sekaray6997@gmail.com (S.A.P.)

Citations: Purbondaru, S.A., Saputra, F.E., Salim, M., & Anggarawati, S., (2023). Adoption of E-Wallets in Indonesia: Integrating Mindfulness into the Technology Acceptance Model. *Journal of Madani Society*, 2(1), 34-44.

Academic Editor: Raden Aswin Rahadi

Received: 22 December 2022

Accepted: 9 April 2023

Published: 30 April 2023

Abstract: This study investigates the main determinants of e-wallet use intention and proposes an e-wallet adoption model that includes mindfulness as a significant factor. The respondents in this study are e-wallet users between the ages of 17 and 40 who live in Bengkulu City. In order to collect data samples from respondents, the convenience sampling technique was used. This study's online survey questionnaires were distributed via social media platforms such as WhatsApp and Instagram. After using the listwise deletion method on SEM-AMOS with Mahalanobis Distance, 257 usable questionnaires were available for analysis. This study used Confirmatory Factor Analysis (CFA), assessment of normality, and regression weights for data analysis. According to the findings, (1) mindfulness has a positive and significant effect on perceived usefulness, (2) mindfulness has a positive and significant effect on perceived ease of use, (3) perceived usefulness has a positive and significant effect on the intention to use, (4) perceived ease of use has no significant effect on the intention to use, and (5) intention to use has a positive and significant effect on actual use. This study adds to the body of knowledge by extending the concept of TAM by incorporating mindfulness variables into a structural model. It is suggested that providers expand their merchant partners to provide more benefits to customers and improve more features and benefits for people who use their apps. Furthermore, this study discovered some limitations, which include a) limited geographical areas for data collection, giving opportunity for future research to expand more and will be much better if can compare respondent characteristics between cultures; b) four dimensions of mindfulness must be validated again when applied to other contexts; and c) future research can look at post-purchase phenomenon to catch e-wallet adoption even better.

Keywords: mindfulness; perceived usefulness; perceived ease to use; intention to use; actual use; technology acceptance model



Copyright: © 2023 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY 4.0) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Individuals used electronic wallets as one of the most popular non-cash payment instruments at the start of the twenty-first century. Although some people confuse e-wallets and mobile banking, the two are not the same, especially

regarding their use as a digital payment system. This distinction is due to its limited function as a replacement for physical wallets that store funds digitally to make non-cash payments. One of the limitations of using an e-wallet, like physical wallets, is the user's fund storage limit, which does not apply to digital banking applications (internet banking and mobile banking). Users can, however, connect their digital banking application to the e-wallet application system to make it easier to deposit funds. According to Shin (2009), an e-wallet function is to top up a certain amount of money and connect it to a credit or debit card on an installed application. It can then be used to transact with other consumers, consumers to a business merchant or even consumers with a machine.

In Indonesia, e-wallet applications are quite diverse and generally integrated with various e-commerce sites. Integrating e-commerce and E-wallet is one of the strategies online stores use to make it easier for users to pay at their websites. Not surprisingly, integrating e-wallet use with certain e-commerce merchants has influenced the increase in e-wallet users. Digital integration is unique to the company because it is thought to provide greater user benefits. Furthermore, e-wallet payments are more convenient and faster than traditional banking systems because they save time and money (Alam et al., 2021). An e-wallet provides convenience, speed, and a sense of security and comfort when transacting anywhere and at any time (Liébana-Cabanillas et al., 2014).

In 2020, 51 e-wallet applications in Indonesia will have received licenses from Bank Indonesia (<https://data.tempo.co>). The intention of use will heavily influence the user's decision-making in determining the most appropriate e-wallet application to be selected and used as a non-cash payment medium. The intention of use will also impact the widespread use of e-wallets for non-cash payment transactions. The intention to use will also vary by age range, community profession (e.g., farmers and fishermen), and other demographic characteristics. As a result, not everyone can easily understand and accept the new services provided by e-wallets. As a result, it is necessary to deduce the acceptance model of e-wallet technology from user perception.

Several previous studies have investigated technology acceptance models (Bhattacharjee & Premkumar, 2004; Davis, 1989; Goodhue & Thompson, 1995; Pavlou, 2003; Sun et al., 2016; Sun & Fang, 2010; Venkatesh et al., 2003, 2012). Davis introduced the technology Acceptance model, one of the literature's most commonly used technology acceptance models (1989). TAM focuses on individual behaviour characteristics when using an application system or information technology (Davis, 1989). TAM is empirically successful in predicting approximately 40% of system usage (Rigopoulos & Askounis, 1970). Many researchers who have attempted to apply TAM have discovered its limitations when applied to specific contexts.

The various TAM critiques encourage researchers to apply the TAM framework to specific contexts. Glavee-Geo et al. (2017) investigated the adoption of mobile banking services in Pakistan using TAM and the Theory of Planned Behavior. Shaw (2014) investigated the expansion of TAM by identifying E-wallet users' behaviour in Canada using additional constructs such as trust, security, and lifestyle compatibility. Muñoz-Leiva et al. (2017) extend the TAM model by incorporating the diffusion of innovation, risk perception, and trust to explain user acceptance of mobile banking applications. Matemba & Li (2018) extend TAM to predict acceptance of person-to-person services in the context of South African WeChat wallets.

The concept of TAM is expanded in this study by including a mindfulness variable. Roberts et al. (2007) proposed that mindfulness could be applied to research into technology adoption and use by conceptualizing unique mindfulness mechanisms in the information systems domain. Sun et al. (2016) created a new concept, Mindfulness of Technology Adoption (MTA), based on traditional mindfulness theory, to investigate the relationship between mindfulness and technology adoption. MTA is defined by Sun et al. (2016) as a state of consciousness in which one investigates technology in-depth, as well as local contexts and alternative technologies. According to the MTA model, mindfulness can reduce uncertainty and influence users' perceptions of the usefulness and intent to use technology.

2. Literature Review

2.1. Digital Wallet (E-Wallet)

An E-wallet, or a digital wallet, is a type of financial technology (fintech), a non-cash payment instrument that uses internet media. According to Pandy & Crowe (2017), an e-wallet is a digital medium or intermediary accessible via mobile devices (smartphones) that stores applications, payment credentials, loyalty cards, and coupons and can be used to make remote payments. An E-wallet is a software, electronic device, or online service that allows individuals or businesses to conduct electronic transactions. According to Hutami (2019), an e-wallet is a temporary "wallet" or an account that contains funds in an online application to make it easier for users to transact online. An E-wallet is useful for storing money online and offline using a QR Code. To use a digital wallet, users must first download a special application developed by a trusted bank or third party. Rilo Pambudi (2012) listed several benefits and drawbacks of using an e-wallet versus cash or other alternative payment methods. E-wallets' benefits are: 1) Payment transactions are simple, practical, and efficient. Users do not need to carry much cash or withdraw cash from an ATM to make payment transactions.

Various types of transactions can be carried out using an e-wallet, such as making transfers between banks and other e-wallets, paying bills, reloading credit or data packages, online transportation services, purchasing tickets such as planes, trains, cinemas, and so on; 2) the e-wallet provides users with various types of promo offers (cashback and reward points) and discounts. 3) A secure e-wallet requires users to enter a password or pin as a condition of accessing the application or making payments; 4) users can view the history of any transactions made; 5) E-wallet users do not need to open a bank account first because e-wallet top up can be done in a variety of ways, including ATM transfers, m-banking, i-banking, fellow e-wallet Alfamart, Indomaret, and other options. While the disadvantages of e-wallets are: 1) merchants who are affiliated with e-wallet services are still limited, so they still need cash to make payments like in small shops; 2) unlike other alternative payment instruments such as ATMs that can make cash withdrawals, e-wallet balances cannot be cashed out; and 3) e-wallet is dependent on the internet network connection.

2.2. Technology Acceptance Model (TAM)

The original TAM concept encompasses perceived usefulness, perceived ease of use, attitude toward behaviour, intent to use, and actual system use (Davis, 1989). According to Davis (1989), other external variables can be added to clarify the research phenomenon in addition to these core variables. Subsequent researchers have criticized TAM because it is less applicable in a specific context (Cheung & Vogel, 2013). Due to several flaws in the TAM concept, the researcher expanded this theoretical model by including new variables that could make it more applicable in various contexts (Cheung & Vogel, 2013). The issue then becomes that many TAM models are expanded with various new variables tailored to the context of subsequent studies (Muk & Chung, 2015). Extended TAM has been used in research on technology acceptance by Szajna (1996), Igbaria et al. (1995), Venkatesh et al. (2003), and Venkatesh et al. (2012). To investigate the relationship between TAM and trust variables, (Venkatesh et al., 2003) included the trust variable. Venkatesh et al. (2003) modified another TAM by including the Trust and Risk variable in measuring the technology acceptance level, which they dub TRITAM (Trust and Risk in Technology Acceptance Model).

Technology Acceptance Model has been empirically proven to accurately predict approximately 40% of system use (Legris et al., 2003). Sharing TAM's shortcomings allows for further research into expanding and applying the concept of TAM in various contexts. The TAM model can still accurately describe technology acceptance in the context of e-wallet acceptance. However, external factors that motivate someone to adopt new e-wallet technology must be considered. This study aims to identify the behavioural motives of individuals who intend to use e-wallets. Attitudes toward e-wallet technology influence intentions, which are influenced by perceived ease of use and usefulness (Davis, 1989). Furthermore, this study adopts (H. Sun et al., 2016)'s idea that mindfulness is an external factor that can supplement the TAM model in better describing the phenomenon of e-wallet adoption by influencing perceived usefulness and perceived ease of use. In the following sub-chapter of this study, each of the TAM and mindfulness variables will be described in detail.

2.3. Actual Use

In various studies, actual use is determined by the user's intention to use a system (Davis, 1989). Many TAM researchers have discovered that use intention has a significant impact on the actual use of a new system or technology (Bailey et al., 2017; Muñoz-Leiva et al., 2017; Rigopoulos & Askounis, 1970; Q. Sun et al., 2009). Venkatesh et al. (2003) discovered that the intention to use variables could accurately predict the use of information systems. According to Rigopoulos & Askounis (1970), actual use and frequency can be measured using indicators such as actual use and frequency. The variable measurement indicator in this study was adapted from previous research. Several studies have attempted to develop indicators of actual technology use. This study employs measurement indicators derived from Rigopoulos & Askounis (1970) developed three measurement indicators. Indicators of actual use adopted from Rigopoulos & Askounis (1970) include 1) making an online transaction with an e-wallet, 2) making a payment at a service counter at a specific merchant with an e-wallet, and 3) wanting to use an e-wallet more frequently than other payment tools.

2.4. Intention to Use

The attitude of attention to the technology itself, for example, curiosity about technology, seeking information about the features, benefits, and uses of technology, as well as information in the form of experiences obtained from other users, can predict the intention to use a particular technology (Davis, 1989). Individual users will be satisfied with technology if they believe it is simple to use and can increase their productivity, reflected in actual usage conditions (Park et al., 2014; Tangke, 2004). Previous research has found that use intention strongly predicts actual use (Kim et al., 2010; Rigopoulos & Askounis, 1970; Shin, 2009; H. Sun & Fang, 2010; Q. Sun et al., 2009). Venkatesh et al. (2003) extend the technology acceptance model by demonstrating that use intention significantly impacts user behaviour.

Furthermore, Yi & Hwang (2003) predicted the use of web-based information systems and discovered that intention to use significantly influenced actual use. Based on the findings of previous studies, there is no doubt that intention to use influences actual use. This concept is still very relevant to be adopted in the context of e-wallets. This study will then adopt and develop measurement indicators of usage intentions for use in the e-wallet digital payment system. Bhattacharjee & Premkumar (2004) proposed that three measurement indicators are used to assess intent to use. Bhattacharjee & Premkumar's (2004) measurement indicators will then be adopted and adapted in this study to measure users' intentions to use e-wallet digital wallets. The following are the measurement indicators of an intention to use adapted from Bhattacharjee & Premkumar (2004): 1) I intend to use an e-wallet digital wallet; 2) I intend to use an e-wallet to make payment transactions; and 3) I intend to use an e-wallet to process my finances.

2.5. Perceived Usefulness

According to Phonthanukitithaworn et al. (2016), perceived usefulness is the degree to which a person believes using mobile payment services will improve their performance and productivity when making payments. According to Bailey et al. (2017), perceived usefulness refers to how much a person believes they will benefit (for example, convenience and practicality) from making non-cash payments. Information systems' perceived usefulness is an important factor influencing attitudes and intentions to use them (Davis, 1989). The degree to which an individual believes that using a specific information system will increase productivity is perceived usefulness (Davis, 1989). An individual's perceived usefulness in using an information system will encourage them to consider whether it is necessary or not to direct their desires in the form of intentions, which will then lead to the behaviour of adopting the system (Venkatesh et al., 2003, 2012).

Davis (1989) created a set of metrics to assess an information system's perceived usefulness. A measurement item was adopted by subsequent researchers to be developed into a specific context and to test the instrument's consistency (Davis, 1989). In previous research, Venkatesh et al. (2012) developed a measurement indicator of perceived usefulness based on the TAM theory (Davis, 1989; Venkatesh et al., 2003). Venkatesh et al. (2012) proposed four measurement indicators of information system perceived usefulness as follows: 1) E-wallets can improve the quality of our daily payment transactions; 2) E-wallets can improve our efficiency in making payment transactions; 3) E-wallets can improve our productivity in making payment transactions; and 4) E-wallets are extremely useful for making payment transactions.

2.6. Perceived Ease of Use

The degree to which a person believes using an application will save time and effort is perceived as ease of use (Davis, 1989). Users will accept applications that make it easier to use than other applications. On the basis of several studies, Wu & Wang (2005) examine the perceived ease of use as one of the variables that influence perceived usefulness. Users ultimately perceive an easier-to-use system as more practical to use, so an easier-to-use system will allow users to complete more tasks than systems that are more difficult to use (Suki & Suki, 2011). Perceived ease of use is a metaphor for a clear and simple way of using information technology, as well as the ease of operating technology that is less than what its users require (Davis, 1989). Venkatesh et al. (2003) used the measurement indicators for perceived ease of use in this study. The measurement indicators of perceived ease of use in (Venkatesh et al., 2012)'s research consist of four measurement indicators, which are as follows: 1) E-wallet payment is clear and easy to understand; 2) E-wallet payment does not require much effort; 3) E-wallet payment is very easy to use; 4) E-wallet payment is easy to use for any transaction I want.

2.7. Mindfulness

Brown & Ryan (2003) define mindfulness in their study as a condition in which an individual gives full attention through clarity and experience. According to Baer et al. (2008), mindfulness is full awareness regardless of the assessment of internal and external stimuli. Mindfulness is defined by Cardaciotto et al. (2008) as a person's tendency to be aware of internal and external experiences while maintaining an accepting and nonjudgmental attitude toward those experiences. According to Ganesan et al. (2014), mindfulness is a state of mind in which a person becomes involved with his environment and occasionally pays full and careful attention to the recent experience, actively processing new information as it flows through the senses. Experts say mindfulness is defined as presenting awareness characterized by clarity and clarity of recent experience.

Sun & Fang (2010) used five measurement items to create a Mindfulness in Technology Acceptance (MTA) model. Mindfulness was measured using a single-dimensional variable in their study. Sun & Fang (2010) developed a measurement scale using a rigorous procedure, as suggested by Moore & Benbasat (1991). Compiling question items, content validation, a two-round Q-sort (using eight postgraduate students, four in each round), and a pilot study involving 98 postgraduate students were all part of the process by which they developed the measurement scale. This

stringent procedure ensures that the accuracy of the developed measurement instruments is preserved. Sun & Fang (2010) developed a five-item measurement scale that includes: 1) the e-wallet looks different from other technologies I have used before; 2) we are looking for information about e-wallets from various sources; 3) we are familiar with alternative payment technologies other than e-wallets; 4) we understand how the e-wallet can meet our specific needs; and 5) e-wallet is a new technology for us.

2.8. Research Framework

The conceptual research framework serves as a foundation for answering research questions. The foundation in question is a review of various theories and previous research findings on the problem under consideration. Based on the previously described hypothesis development, the research framework proposed in this study is depicted in Figure 1 as follows:

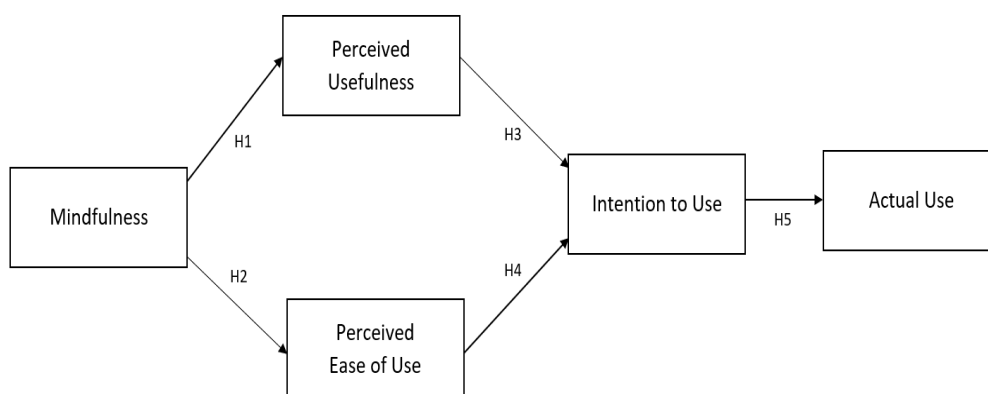


Figure 1. Research Framework

2.9. Hypotheses Development

The research framework in Figure 1 is an extension of the TAM (Technology Acceptance Model) model developed by Davis (1989), namely the variables perceived usefulness, perceived ease to use, and intention to use by adding the concept of mindfulness developed by Sun & Fang (2010) and by adding the actual use variable (Rigopoulos & Askounis, 1970):

- H1: Mindfulness has an impact on perceived usefulness.
- H2: Mindfulness has an impact on the perceived ease to use.
- H3: The perceived usefulness has an impact on the intention to use.
- H4: The perceived ease to use impacts the intention to use.
- H5: The intention to use has an impact on the actual use.

3. Methodology

The research method used in this study is quantitative research. The mindfulness variable used a measurement instrument developed by Sun et al. (2016). Venkatesh et al. (2012) developed a measurement instrument for perceived ease of use and usefulness. The measurement instrument developed by Bhattacharjee & Premkumar (2004) was used for the intention to use a variable, while the measurement instrument developed by Rigopoulos & Askounis (1970) was used for the actual usage variable. Measurement instruments developed from previous studies will be used to create questionnaires that will be used to collect data via surveys. According to the time dimension, this study is classified as a cross-sectional study, in which data is collected by distributing questionnaires only once to answer research questions (Sekaran, 2006).

Table 1. Definition of Operational Variables

Definition(s)	Indicator(s)	Source(s)
Mindfulness is a psychological state in which a person is focused on and aware of the issues surrounding	The e-wallet looks different from other technologies I have used before. We are looking for information about e-wallets from various sources. We are familiar with alternative technologies other than e-wallets in payment. We know how the e-wallet can meet our specific needs in terms of	Sun & Fang (2010)

Definition(s)	Indicator(s)	Source(s)
the decision to use e-wallet technology.	payment. E-wallet is a new technology for us.	
The perceived ease of use describes how a person feels about using an e-wallet.	Payment via an e-wallet is simple and straightforward. Using an e-wallet for payment requires little effort. E-wallet payments are simple to make.	Venkatesh et al. (2003)
Perceived usefulness is defined as the use of an e-wallet that provides various transactional benefits to individuals.	I can use my e-wallet for any transaction I want. Electronic wallets can enhance the quality of our daily financial transactions. E-wallets can improve the efficiency of our financial transactions. E-wallets can increase the efficiency of our payment transactions. E-wallets are extremely useful for conducting financial transactions.	Venkatesh et al. (2012)
Intention to use is defined as a person's intention to use an e-wallet.	We intend to use an e-wallet digital wallet. We will use an electronic wallet for payment transactions. We intend to manage our finances using an electronic wallet.	Bhattacharjee & Premkumar (2004)
Actual use is defined as a real condition of using the e-wallet.	Using an e-wallet, we conduct online transactions. Using an e-wallet, we paid at a merchant's service counter. We intend to utilize e-wallets more frequently than other payment methods.	Rigopoulos & Askounis (1970)

This study's population consists of all individuals who purchased an E-wallet. This study's sample consists of individuals who have utilized an e-wallet in Bengkulu City. This study's sampling method falls within the category of non-probability sampling (Mexon & Kumar, 2020). The technique of non-probability sampling chosen for this study is purposive sampling. The sample criteria are as follows: 1) residents of Bengkulu City, 2) users of e-wallets in transactions, and 3) individuals between the ages of 17 and 40. This questionnaire will be created using Google Form. The questionnaire will be distributed online via the link via the Google form on social media platforms such as Instagram and WhatsApp direct messages. Access the Google questionnaire form at <https://forms.gle/hCk7VRXTLd1yJ3Z67>. The questionnaires were distributed via the applications WhatsApp and Instagram. The questionnaire distribution spanned seven days, from March 7-13, 2022, and the online distribution yielded 418 responses. 161 out of 418 questionnaires could not be used because the respondents did not meet the criteria for the research sample and the questionnaires were incomplete. In order to process 257 samples that meet the criteria, 257 respondents are required. After data collection, primary data obtained from study respondents will be processed using SEM (Structural Equation Modeling).

4. Results

4.1. E-Wallet user's behaviour

This study's initial identification of respondents was analysed via four questions. This study's responses from respondents include the type of e-wallet application used, the duration of e-wallet use, and the frequency of e-wallet use. The analysis results indicate that as many as 257 respondents employ the e-wallet application. In this study, data from 257 respondents will be utilized. Per-person use of an e-wallet is not restricted to a single e-wallet type. One individual can use multiple electronic wallets. ShopeePay, DANA, OVO, and GoPay are the most frequently utilized e-wallet applications. With 174 responses or 67.7% of the total, ShopeePay was selected as the e-wallet application by the majority of respondents. DANA is the second-most popular application among respondents, with 138 responses (or 53.7%). In addition, the OVO application received 137 responses or 53.3%, GoPay applications received 97 responses or 37.7%, and other application options received only 33 responses or 12.8%.

The time spent using e-wallets and the frequency of e-wallet use are also essential pieces of information because they pertain to the actual use of e-wallet services. According to the data analysis results, most respondents have used the e-wallet application for more than six months, specifically 203 respondents or 79%. In addition, most respondents (155, or 60.3%) reported using e-wallets fewer than ten times per month. If we attribute the low frequency of use to the respondents' demographic characteristics, we know that most respondents are students. Students are typically still financially dependent on their parents or require parental consent. Most respondents have incomes between IDR 1,000,000 and IDR 3,000,000, which falls within the two groups with the lowest incomes in this study.

4.2. Result of Data Analysis

This study employs IBM SPSS AMOS software to conduct a structural Equation Model (SEM) analysis. Before developing a comprehensive SEM model, the variables' constituent factors will be evaluated. Confirmatory Factor Analysis (CFA) will be utilized to conduct the test. Testing is conducted until the appropriate model is obtained (fit). The results of CFA data processing indicate that some of the fit model criteria did not meet the conditions specified by Hair et al. (2010). The nineteen indicators have been demonstrated to fail to meet the required loading factor criteria.

Table 2. Result of Goodness of Fit

GoF	Threshold	Result	Conclusion
CMIN/DF	< 5	2.321	Good Fit
GFI	> 0.90	0.884	Marginal
AGFI	> 0.90	0.842	Marginal
IFI	> 0.95	0.943	Marginal
TLI	> 0.95	0.929	Marginal
CFI	> 0.95	0.942	Marginal
RMSEA	< 0.08	0.072	Good Fit

Modifications to the measurement model were made using AMOS. The results obtained after modifying the measurement model were much better, though they did not meet the required cut-off criteria. According to Hair et al. (2010), obtaining data that meet the perfect fit criteria in behavioural research is extremely difficult because no model can accurately describe the real observation phenomena. Various fit model flaws may present opportunities for additional knowledge development (Hair et al., 2010). After all of the criteria for testing the measurement model have been met, the next step is to test the proposed hypothesis, as shown in Table 3.

Table 3. Result of Hypothesis Testing

	Path Analysis	Estimate	S.E.	C.R.	P-Value
Mindfulness	---> Perceived Usefulness	1.154	0.134	8.608	0.000
Mindfulness	---> Perceived Ease of Use	1.243	0.147	8.459	0.000
Perceived Usefulness	---> Intention to Use	1.443	0.202	7.161	0.000
Perceived Ease of Use	---> Intention to Use	-0.119	0.13	-1.529	0.126
Intention to Use	---> Actual Use	0.888	0.101	8.818	0.000

Table 3 displays that mindfulness has a significant positive effect on perceived usefulness and ease of use. Also, perceived usefulness has a significant positive effect on the intention to use. Besides that, perceived ease of use does not influence the intention to use. Intention to use has a significant positive effect on actual use.

4.3. Discussion

The findings demonstrated that mindfulness has a significant effect on perceived usefulness. Mindfulness has been shown to impact perceived ease of use significantly. It has been demonstrated that perceived usefulness significantly impacts the level of intention to use. Perceived ease of use has been shown to have no significant effect on the intention to use, while the intention to use has been shown to have a significant effect on actual use. Mindfulness can help to increase e-wallet adoption by reducing uncertainty and increasing the perceived usefulness of the technology. The level of mindfulness with which a person adopts an e-wallet application encourages the individual to investigate the e-wallet in greater detail regarding the context of its use and other available alternatives. The findings of this study demonstrate that greater mindfulness in e-wallet adoption significantly impacts perceived usefulness. According to Sun & Fang (2010), mindfulness is a good predictor of perceived usefulness in adopting new technologies. This study also supports the findings of Sun et al. (2016). They created a new concept (the MTA concept) based on the traditional mindfulness theory of technology adoption to investigate the relationship between mindfulness and technology adoption. According to Ganesan et al. (2014), mobile devices can facilitate mindfulness practices by changing consumer perceptions of adopting and using technology. This study's findings support previous researchers' findings because individuals with mindfulness pay more attention to the functions of technology, such as ease of use and usefulness, which affects their attitude toward technology.

As previously stated, a mind full person will investigate technology's functions, features, and applications. As a result, the perception of ease of use is an important consideration for someone mindful of adopting new technology. The more mindful a consumer is, the more aware they are of perceived ease of use. It will encourage providers to develop features, functions, and additional benefits from technology that prioritizes user-friendliness. Venkatesh et al. (2003) state usability is the fundamental pillar of technological development. The statement is also consistent with the findings of a study conducted by Sun et al. (2009) and Sun et al. (2016), which found that when deciding whether to accept or reject technology, a person pays full attention (mindful) to the technology he will adopt based on his or her needs and actively searches for information about the technology before making a decision. Sun & Fang (2010) also state that mindfulness is a good predictor of perceived ease of use because it indicates that the individual is very aware of the technology that will be used. The ease and functionality of the technology serve as the foundation for use.

According to previous research, perceived usefulness is an important predictor of an individual's intention to adopt and use new technology (Chan & Lu, 2006; Davis, 1989; Peng et al., 2012; Sun et al., 2009). The findings revealed that the attitude of consumers' attention to the e-wallet, such as curiosity, features, benefits, and usability of the e-wallet itself, could predict the intention to use an e-wallet. As a result, perceived usefulness influences consumers' intentions to use e-wallet applications. Consumers will be more likely to use an e-wallet if they believe the system is simple and can increase their productivity, reflected in actual usage conditions. Bailey et al. (2017) studied mobile payment adoption and discovered that perceived usefulness significantly affected usage intentions. Venkatesh et al. (2003) and Venkatesh et al. (2012) state in their study that perceived usefulness significantly encourages individuals to consider whether or not it is necessary to direct their desires in the form of intentions, which leads to behaviour adopting the system. This study's findings support the researchers' conclusion that perceived usefulness affects a person's perception by believing that the usefulness of a digital wallet e-wallet will be able to bring benefits, which, in turn, affects their decision-making process in intention to use.

An E-wallet is a digital wallet rather than an application that can replace banking functions. The convenience of making purchases at e-wallet-related merchants is a benefit of using an e-wallet. Assume that customers are regular customers of related merchants such as online motorcycle taxis and e-commerce. In that case, they will be tempted to use e-wallet applications because of the perceived benefits. Consumers believe that the value obtained has a greater influence when compared to the perceived ease of use of the e-wallet application itself. Given the demographic data of respondents not from Indonesia's major cities, the perceived benefits of using e-wallets were not as great as the ease of use. This phenomenon is practically based on real-world phenomena as an important factor that causes perceived ease of use to have no significant effect on use intention.

Previous research has found that use intention strongly predicts actual use (Kim et al., 2010; Rigopoulos & Askounis, 1970; Sun et al., 2016; Sun & Fang, 2010; Sun et al., 2009). Venkatesh et al. (2003) extended the technology acceptance model and discovered that use intention influences user behaviour significantly. Furthermore, Yi & Hwang (2003) research on predicting the use of web-based information systems discovered that intention to use significantly influenced actual use. Based on the findings of previous studies, there is no doubt that intention to use influences actual use. This concept is still very relevant to be adopted in the context of e-wallets. This study will then adopt and develop measurement indicators of usage intentions for the e-wallet digital payment system in the following stage. This study's findings are consistent with previous research that found that purchase intent is a strong predictor of actual use of e-wallet applications (Bailey et al., 2017; Muñoz-Leiva et al., 2017; Rigopoulos & Askounis, 1970; Sun et al., 2009; Venkatesh et al., 2003).

5. Conclusions

In conclusion, this study identified that mindfulness significantly affects perceived usefulness and ease of use. Also, perceived usefulness has a significant positive effect on the intention to use. Besides that, perceived ease of use does not influence the intention to use. Intention to use has a significant positive effect on actual use. This research provides empirical and practical contributions for e-wallet application developers to improve the quality of their services for consumers in the future. Some practical contributions for digital wallet application developers include: (1) expanding the range of use of digital wallet applications as an easy and convenient means of payment by increasing the number of related merchant outlets, and (2) e-wallet application developers need to improve the functions and benefits that users feel in their daily activities. E-wallets are expected to support more payment transactions from related merchants in the future, both digitally and physically, to make it easier for users to use them. One of the factors limiting the widespread use of this e-wallet is the limitations of offline merchants.

Author Contributions: Conceptualization, S.A.P. and F.E.S.; methodology, S.A.P.; software, F.E.S.; validation, S.A.P., F.E.S., M.S. and S.A.; formal analysis, S.A.P. and F.E.S.; investigation, S.A.P. and F.E.S.; resources, S.A.F.; data curation, F.E.S., M.S. and S.A.; writing—original draft preparation, S.A.P. and F.E.S.; writing—review and editing, S.A.P., F.E.S., M.S. and S.A.; visualization, S.A.P.; supervision, F.E.S., M.S. and S.A.; project administration, F.E.S., M.S. and S.A.; funding acquisition, S.A.P. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Acknowledgments: The author would like to thank University of Bengkulu, Indonesia, for supporting this research and publication. We would also like to thank the reviewers for their constructive comments and suggestions.

Conflicts of Interest: The authors declare no conflict of interest.

References

- Alam, M. M., Awawdeh, A. E., & Muhamad, A. I. Bin. (2021). Using e-wallet for business process development: challenges and prospects in Malaysia. *Business Process Management Journal*, 27(4), 1142–1162. <https://doi.org/10.1108/BPMJ-11-2020-0528>
- Baer, R. A., Smith, G. T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., Walsh, E., Duggan, D., & Williams, J. M. G. (2008). Construct Validity of the Five Facet Mindfulness Questionnaire in Meditating and Nonmeditating Samples. *Assessment*, 15(3), 329–342. <https://doi.org/10.1177/1073191107313003>
- Bailey, A. A., Pentina, I., Mishra, A. S., & Ben Mimoun, M. S. (2017). Mobile payments adoption by US consumers: an extended TAM. *International Journal of Retail & Distribution Management*, 45(6), 626–640. <https://doi.org/10.1108/IJRDM-08-2016-0144>
- Bhattacharjee, & Premkumar. (2004). Understanding Changes in Belief and Attitude toward Information Technology Usage: A Theoretical Model and Longitudinal Test. *MIS Quarterly*, 28(2), 229–254. <https://doi.org/10.2307/25148634>
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84(4), 822–848. <https://doi.org/10.1037/0022-3514.84.4.822>
- Cardaciotto, L., Herbert, J. D., Forman, E. M., Moitra, E., & Farrow, V. (2008). The Assessment of Present-Moment Awareness and Acceptance. *Assessment*, 15(2), 204–223. <https://doi.org/10.1177/1073191107311467>
- Chan, S., & Lu, M. (2006). Understanding Internet Banking Adoption and Use Behavior. In *Journal of Global Information Management (JGIM)* (Vol. 12, Issue 3, pp. 308–330). IGI Global. <https://doi.org/10.4018/978-1-59140-923-6.ch014>
- Cheung, R., & Vogel, D. (2013). Predicting user acceptance of collaborative technologies: An extension of the technology acceptance model for e-learning. *Computers & Education*, 63, 160–175. <https://doi.org/10.1016/j.compedu.2012.12.003>
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
- Ganesan, V., Noor, S. M., & Jaafar, M. (2014). Communication Factors Contributing to Mindfulness: A Study of Melaka World Heritage Site Visitors. *Journal of Sustainable Development*, 7(3), 49–58. <https://doi.org/10.5539/jsd.v7n3p49>
- Glavee-Geo, R., Shaikh, A. A., & Karjaluoto, H. (2017). Mobile banking services adoption in Pakistan: are there gender differences? *International Journal of Bank Marketing*, 35(7), 1090–1114. <https://doi.org/10.1108/IJBM-09-2015-0142>
- Goodhue, D. L., & Thompson, R. L. (1995). Task-Technology Fit and Individual Performance. *MIS Quarterly*, 19(2), 213–233. <https://doi.org/10.2307/249689>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: Pearson College division*. Person.
- Hutami, L. T. H. (2019). Intensi Penggunaan Electronic Wallet Generasi Millennial Pada Tiga Startup “Unicorn” Indonesia Berdasarkan Modifikasi TAM. *Jurnal Manajemen*, 8(2), 136–145. <https://doi.org/10.26460/jm.v8i2.702>
- Igbaria, M., Iivari, J., & Maragahh, H. (1995). Why do individuals use computer technology? A Finnish case study. *Information & Management*, 29(5), 227–238. [https://doi.org/10.1016/0378-7206\(95\)00031-0](https://doi.org/10.1016/0378-7206(95)00031-0)
- Kim, C., Mirusmonov, M., & Lee, I. (2010). An empirical examination of factors influencing the intention to use mobile payment. *Computers in Human Behavior*, 26(3), 310–322. <https://doi.org/10.1016/j.chb.2009.10.013>
- Legris, P., Ingham, J., & Collette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information & Management*, 40(3), 191–204. [https://doi.org/10.1016/S0378-7206\(01\)00143-4](https://doi.org/10.1016/S0378-7206(01)00143-4)
- Liébana-Cabanillas, F., Sánchez-Fernández, J., & Muñoz-Leiva, F. (2014). Antecedents of the adoption of the new mobile payment systems: The moderating effect of age. *Computers in Human Behavior*, 35, 464–478. <https://doi.org/10.1016/j.chb.2014.03.022>
- Matemba, E. D., & Li, G. (2018). Consumers' willingness to adopt and use WeChat wallet: An empirical study in South Africa. *Technology in Society*, 53, 55–68. <https://doi.org/10.1016/j.techsoc.2017.12.001>

- Mexon, J., & Kumar, A. (2020). *Business Research Methods*. Skyfox Publishing Group. <https://doi.org/10.22573/spg.020.BK/S/026>
- Moore, G. C., & Benbasat, I. (1991). Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation. *Information Systems Research*, 2(3), 192–222. <https://doi.org/10.1287/isre.2.3.192>
- Muk, A., & Chung, C. (2015). Applying the technology acceptance model in a two-country study of SMS advertising. *Journal of Business Research*, 68(1), 1–6. <https://doi.org/10.1016/j.jbusres.2014.06.001>
- Muñoz-Leiva, F., Climent-Climent, S., & Liébana-Cabanillas, F. (2017). Determinants of intention to use the mobile banking apps: An extension of the classic TAM model. *Spanish Journal of Marketing - ESIC*, 21(1), 25–38. <https://doi.org/10.1016/j.sjme.2016.12.001>
- Pandy, S. M., & Crowe, M. (2017). Choosing a Mobile Wallet: The Consumer Perspective. *Federal Reserve Bank of Boston*, 9, 1–23.
- Park, N., Rhoads, M., Hou, J., & Lee, K. M. (2014). Understanding the acceptance of teleconferencing systems among employees: An extension of the technology acceptance model. *Computers in Human Behavior*, 39, 118–127. <https://doi.org/10.1016/j.chb.2014.05.048>
- Pavlou, P. A. (2003). Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model. *International Journal of Electronic Commerce*, 7(3), 101–134. <https://doi.org/10.1080/10864415.2003.11044275>
- Peng, R., Xiong, L., & Yang, Z. (2012). Exploring Tourist Adoption of Tourism Mobile Payment: An Empirical Analysis. *Journal of Theoretical and Applied Electronic Commerce Research*, 7(1), 5–6. <https://doi.org/10.4067/S0718-18762012000100003>
- Phonthanukitithaworn, C., Sellitto, C., & Fong, M. W. L. (2016). A Comparative Study of Current and Potential Users of Mobile Payment Services. *SAGE Open*, 6(4), 215824401667539. <https://doi.org/10.1177/2158244016675397>
- Rigopoulos, G., & Askounis, D. (1970). A TAM Framework to Evaluate Users' Perception towards Online Electronic Payments. *The Journal of Internet Banking and Commerce*, 12(3), 1–6.
- Rilo Pambudi, S. E. (2012). *Analisis Pengaruh Big Five Personality terhadap Perilaku Penggunaan Teknologi Electronic Wallet (e-Wallet) dengan moderasi Awal Kepercayaan (Initial Trust)*. Universitas Gadjah Mada.
- Roberts, N., Thatcher, J., & Klein, R. (2007). Tying context to Post-Adoption Behavior with information Technology: A conceptual and operational definition of mindfulness. *Association for Information Systems - 13th Americas Conference on Information Systems, AMCIS 2007: Reaching New Heights (2007)*, 4, 2798–2803.
- Sekaran, U. (2006). *Metodologi penelitian untuk bisnis edisi 4*. Salemba Empat.
- Shaw, N. (2014). The mediating influence of trust in the adoption of the mobile wallet. *Journal of Retailing and Consumer Services*, 21(4), 449–459. <https://doi.org/10.1016/j.jretconser.2014.03.008>
- Shin, D.-H. (2009). Towards an understanding of the consumer acceptance of mobile wallet. *Computers in Human Behavior*, 25(6), 1343–1354. <https://doi.org/10.1016/j.chb.2009.06.001>
- Suki, N. M., & Suki, N. M. (2011). Exploring the relationship between perceived usefulness, perceived ease of use, perceived enjoyment, attitude and subscribers' intention towards using 3G mobile services. *Journal of Information Technology Management*, 22(1), 1–7.
- Sun, H., & Fang, Y. (2010). Toward a model of mindfulness in technology acceptance. *ICIS 2010 Proceedings - Thirty First International Conference on Information Systems (2010)*, 12–15.
- Sun, H., Fang, Y., & Zou, H. (2016). Choosing a Fit Technology: Understanding Mindfulness in Technology Adoption and Continuance. *Journal of the Association for Information Systems*, 17(6), 377–412. <https://doi.org/10.17705/1jais.00431>
- Sun, Q., Wang, C., & Cao, H. (2009). An Extended TAM for Analyzing Adoption Behavior of Mobile Commerce. *2009 Eighth International Conference on Mobile Business*, 52–56. <https://doi.org/10.1109/ICMB.2009.16>
- Szajna, B. (1996). Empirical Evaluation of the Revised Technology Acceptance Model. *Management Science*, 42(1), 85–92. <https://doi.org/10.1287/mnsc.42.1.85>
- Tangke, N. (2004). Analisa Penerimaan Penerapan Teknik Audit Berbantuan Komputer (TABK) Dengan Menggunakan Technology Acceptance Model (TAM) Pada Badan Pemeriksa Keuangan (BPK) RI. *Jurnal Akuntansi Dan Keuangan*, 6(1), 10–28.
- Venkatesh, Morris, Davis, & Davis. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27(3), 425–478. <https://doi.org/10.2307/30036540>
- Venkatesh, Thong, & Xu. (2012). Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly*, 36(1), 157–178. <https://doi.org/10.2307/41410412>
- Wu, J.-H., & Wang, S.-C. (2005). What drives mobile commerce? *Information & Management*, 42(5), 719–729. <https://doi.org/10.1016/j.im.2004.07.001>

Yi, M. Y., & Hwang, Y. (2003). Predicting the use of web-based information systems: self-efficacy, enjoyment, learning goal orientation, and the technology acceptance model. *International Journal of Human-Computer Studies*, 59(4), 431–449. [https://doi.org/10.1016/S1071-5819\(03\)00114-9](https://doi.org/10.1016/S1071-5819(03)00114-9)