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Factors Influencing Malaysian Intention to Use E-Wallets

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Abstract
The study aims to determine the factors influencing Malaysian consumers to use e-wallets. Based on Roger's diffusion of innovation theory, the conceptual framework has been developed. Five factors were hypothesised to influence intention which are relative advantage, compatibility, complexity, trialability and observability. Data were collected using a self-administered survey method. Data from 318 respondents were obtained and analysed using multiple regression. The result shows that compatibility, trialability and observability have a significant relationship with a consumer's intention to use an e-wallet. The findings enable e-wallet service providers, marketers and policymakers to plan a suitable strategy to ensure continued usage of e-wallets among the target market.
Keywords: E-Wallet, Intention, Diffusion Of Innovation, Consumers, Malaysian

Introduction

An e-wallet is an electronic mobile payment system that is widely promoted to replace the function of a physical wallet. It is an app-based technology that allows users to make payments, receive, transfer and top-up funds via mobile devices (Wong & Mohamed, 2021). It provides convenience by linking the mobile application to the user's bank account, storing value in the wallet, transferring funds to anyone and anywhere across the world, and accessing credit or insurance products (Donner & Tellez, 2008). It eliminates the need to carry a lot of cash and cards in a physical wallet by storing all user payment information securely and compactly. The use of e-wallets has allowed mobile devices to become tools for buying movie tickets, transportation tickets, hotel reservations, and food reservations, thus making consumers' life easier.

Worldwide, the usage of e-wallets in various countries is increasing. In 2016, China recorded a transaction of US$9 trillion compared to the United States which was US$112 billion (Moneycompass, 2018). In the year 2018, more than a third of internet users used mobile payment services, with the highest usage from the Asia Pacific region, particularly Thailand and China (Best, 2021). The use of e-wallet apps such as Apple Pay and Google Pay is expected to grow exponentially, with the usage in North America expected to double by 2025, while the market size in Asia will be much larger. In general, China was seen as the

world's leading country in the use of e-wallets especially due to the popularity of its two leading service providers – Alipay and Tenpay (Best, 2022).

The adoption of e-wallets in Malaysia began not far from China which is in 2015 (Noordin & Subramaniam, 2019). With the hope of turning Malaysia into a cashless nation, the government has approved a total of 48 licensed non-bank companies to provide e-wallet services in Malaysia. As of March 2022, the leading e-wallet app in Malaysia was Touch'n Go, followed by Boost and Maybank's e-wallet service (Hirschmann, 2022). To provide further encouragement, the government has launched several incentives named as e-Tunai Rakyat, e-Penjana and e-Pemula, by providing a certain amount of credit that can be claimed by Malaysian citizens through e-wallets.

However, despite the incentives provided by the government and the growing interest of the consumers, studies have shown that the majority of consumers in Malaysia are still comfortable using cash (Tusyanah et al., 2021; Wong & Mohamed, 2021). Several issues have been highlighted as a drawback of e-wallets including their complete dependence on applications and smartphones, which make them easy to dysfunction due to various factors such as internet interruption or mobile phone problems (Basaruddin, 2019). The situation will also be worsened if the location has no banking facilities or no other payment method. In addition, e-wallet users are also vulnerable to identity theft and the loss of important information (Ramdan, 2020). The risk of online fraud cases and information hacking will also increase due to many individuals switching to digital payment. Thus, in the effort to transform society to use a cashless payment system, it is interesting to know the reasons that could lead Malaysians to use the e-wallet application. Hence, this study is conducted

- to determine the factors that influence the usage of e-wallets among Malaysian consumers.

Literature Review

The diffusion of innovation model developed by Rogers (1983) is one of the most used models in studying innovation adoption. The innovation decision-making process according to Rogers (1983) starts from the process where a decision maker obtains knowledge to form an attitude toward innovation, followed by a decision stage either to use or to reject the innovation. The last stage is to adopt the new ideas and confirm the decision that has been taken. The model in general introduces five (5) characteristics of innovation which are relative advantage, compatibility, complexity, trialability, and observability (Rogers, 1983). These characteristics play an important role in influencing the attitude and intention of an individual towards an innovation. The characteristics also have been identified as determining factors that influence the phase of innovation used (Hsu et al., 2007).

The diffusion of innovation model has been tested in more than 6,000 research studies in various fields, making it one of the most reliable models in the field of social sciences (Robinson, 2009). Among previous research that have used this theory were studies by Dutta and Omolayole (2016) that examine the differences between men and women in using innovative technology and Mahdzan et al (2017) who studied the use of Islamic banking services in Malaysia. To date, the diffusion of innovation model has been widely used in various studies that involve understanding the recipients of innovation at the macro level, i.e. organizations, or at the micro level, i.e. individuals. Thus, based on these arguments, this theory is considered suitable to be used in this study.

Intention
Behavioral intention refers to an individual's preference to own, use or discard a product or service in certain ways. It also relates to a person's subjective probability or likelihood to realize or attain something in a specific amount of time (Ajzen, 1988). A person who has an intention to do something will have a strong desire to achieve it and will not allow anything to interfere with their aim to achieve the goal (Effendy et al., 2021). In the field of marketing, consumers' intention to use or buy a product could be used as a guide to predict the sales of a product or service. In the context of this study, intention refers to the intensity of a consumer's willingness to use or purchase something using an e-wallet, which could be a guide to predicting a consumer's behavior or decision on e-wallet usage in the future.

Relative Advantage
Relative advantage refers to an individual perception related to the level of benefits obtained from the use of an innovation. If consumers believe that the new innovation is better than the previous one, the new innovation has a greater relative advantage (Rogers, 1983). Relative advantage is considered one of the best predictors of innovation intention and adoption (He et al., 2006). The greater the relative advantage of an innovation, the greater the change in consumers' behavior (Ooi et al., 2011). Previous studies showed that relative advantages in mobile business (Chung, 2014) and mobile payments (Duane et al., 2014) change consumer attitudes towards its adoption. Yang et al. (2012) also found relative advantage as a significant antecedent of intention to use mobile payment systems. In addition, a study conducted by Knudsen and Roman (2015) shows that relative advantage is a less important feature of innovation. Compared to using a physical wallet, the main advantage of an e-wallet is that it can be used at any time even when there is no cash in hand. Users can access e-wallets to get information and use its services anytime and anywhere. This provides great convenience and value to users and can promote their transition from using a physical wallet to an e-wallet. Thus, based on these, it is hypothesized that:

H1 Relative advantage has a positive and significant influence on consumers' intention to use e-wallets.

Compatibility
Compatibility is considered one of the important elements in the technology adoption model. It is believed that the incompatibility of an individual's value with innovation could prevent its adoption (Rogers, 1983). Compatibility is defined as the extent to which the use of a new system or innovation is considered consistent with values, behavioral patterns, and experiences (Schierz et al., 2010). The more compatible the innovation with the needs and values of the users, the more changes in the behavior (Chung, 2014). Innovation compatibility is positively related to the rate of its adoption (Rogers, 1983). This is confirmed by the study of Chang and Tung (2008); Kapoor et al (2014) and Knudsen and Roman (2015) which shows that the higher the compatibility of an innovation, the higher the adoption rate. Using an e-wallet gives the same feeling as using a regular wallet. Additionally, the option to collect reward points and cashback makes it more compatible and easier to use for users. Thus, it is hypothesized:

H2 Compatibility has a positive and significant influence on consumers' intention to use e-wallets.

Complexity
Complexity refers to the user's feelings related to the level of difficulty in learning, handling and understanding an innovation (Rogers, 1983). Innovations that are less complex and user-friendly are easily accepted by consumers (Chung, 2014). Cheung et al. (2000) defined complexity as the extent to which an innovation is considered relatively difficult to understand and use. A previous study by Kapoor et al. (2014) found that an innovation complexity has a negative effect on adoption. On the contrary, Duan et al. (2010) found that perceived complexity in e-learning does not significantly influence students' intentions. In the context of an e-wallet, users will be deterred from using an e-wallet if they feel it requires more mental effort, time-consuming or frustrating. Thus, it is proposed:
H3 Complexity has a negative and significant influence on consumers' intention to use e-wallets.

Trialability
Trialability refers to the ability to experiment with new technology before adopting it. Potential users who are allowed to try the innovation will feel more comfortable with it and are more likely to use it (Rogers, 1983). This is supported by Tan and Teo (2000) who argue that if customers are given the opportunity to try an innovation, it will minimize fear of the unknown, and lead to adoption. Innovation that can be tried or tested by users increases the attitude of users to accept it (Chung, 2014). Kapoor et al. (2014) in his study found that the lack of trialability contributes to the lack of use. Therefore, it is hypothesized that:
H4 Trialability has a positive and significant influence on consumers' intention to use e-wallet.

Observability
Observability refers to the extent to which the results of innovation can be seen by others (Rogers, 1983). Observing the innovation motivates individuals to discuss it with their friends and neighbors and creates a positive intention to use the technology (Duan et al., 2010). Chung (2014) found that the convenience of making mobile commerce observations increases its use among consumers. In contrast, Kapoor et al (2014) however show that observation is not related to the application of ISO standards. A study by Knudsen and Roman (2015) shows that perceived observability is an important innovation characteristic that influences innovation adoption decisions. Therefore, it is hypothesized:

H5 Observability has a positive and significant influence consumers' intention to use an e-wallet.

Methodology
The study was conducted quantitatively. Data were collected using a self-administered survey approach and a convenience sampling technique was adopted to reach the respondents. 318 questionnaires were collected and all are valid for further analysis.

The items for the survey instrument were adapted from various sources. The items for intention were adopted from Dawkins and Frass (2005) while the items for relative advantage and compatibility were adapted from He et al (2006) as well as Liao and Lu (2008). Items for complexity and observability on the other hand were adapted from He et al (2006), while trialability was operationalised from (Park and Chen, 2007). The questionnaire was prepared in Malay and English using the back-translation technique. To reduce common method bias during the data collection stage (Podsakoff et al., 2003), a seven-point Likert scale was used

to measure the dependent variable, while the independent variables were measured using a five-point Likert scale. The questionnaire also included questions on respondents 'profiles such as age, gender, education and monthly income.

The data was analysed using SPSS version 24. A multiple regression analysis was conducted to test the hypotheses. The use of multiple regression is considered suitable because there are more than one independent variable predicted to influence intention (Hair et al., 2009). Thus, multiple regression could test the strength of relative advantage, compatibility, complexity, trialability and observability on intention to use an e-wallet.

Results

Demographically, the majority of the respondents were male (62.6%), aged between 18-30 years old (66.3%), possess a diploma or certificate (45.9%), with a monthly income between RM2001 to RM3000 (37.1%). Most of the respondents have used more than one e-wallet application with the majority of them having experienced using Touch'N Go e-wallet (87.7%), followed by Grab Pay (28.6%) and Boost (21.7%). Among the reasons stated for using e-wallets are to follow the trend (55%), to claim government incentives (93.1%), and because it is the only way available to make a particular payment (25.5%).

To test the internal consistency of items (Sekaran & Bougie, 2009) and to check whether items in the same dimension are measuring the same underlying construct (Pallant, 2005), a reliability analysis was performed. The result is presented in table 1. Since Cronbach's Alpha of all the constructs is more than 0.70, the reliability is considered good.

Table 1.0
Reliability Analysis

Variables	Number of Items	Cronbach's Alpha
Relative advantage	4	0.822
Compatibility	5	0.937
Complexity	3	0.789
Trialability	4	0.769
Observability	5	0.879
Intention	4	0.951

Then, a multiple regression analysis was performed to examine the relationship between the variables. The analysis showed that the R^2 for the model is 0.782, indicating that the independent variables tested in this study explained 78.2% of the dependent variable. The ANOVA result shows that the model is statistically significant with an F value of 228.02. Overall, from the five hypotheses proposed, three hypotheses are significant. The result shows that compatibility, trialability and observability are significant in influencing consumers' intention to use e-wallets. Compatibility shows the largest positive significant value ($\beta = 0.593$, p = 0.000), followed by observability ($\beta = 0.217$, p = 0.000), and trialability ($\beta = 0.069$, p = 0.042). Thus, hypotheses 2, 4 and 5 are supported.

Table 2
Regression result

Variable	Unstandardized beta	Standardized beta	*t*	*p*	Result
Outcome: Intention					
Constant	0.257				
Relative advantage	0.121	0.076	1.488	0.138	Not supported
Compatibility	0.833	0.593	11.371	0.000	Supported
Complexity	-0.019	-0.013	-0.486	0.627	Not supported
Trialability	0.117	0.069	2.042	0.042	Supported
Observability	0.361	0.217	4.690	0.000	Supported
Adjusted R^2	0.782				
F	228.02				

*significance at $\alpha = 0.05$

Discussion
The result shows that three factors which are compatibility, trialability and observability are significant in influencing the intention to use an e-wallet. The R^2 of the model is 78.2% which is considered high. This shows that the study has used a suitable model to determine the antecedents of consumers' intention in using e-wallets.

First, compatibility has the most significant role in influencing consumers' intention to use e-wallets. This is consistent with Yang et al (2021) that found a similar relationship between compatibility and e-wallet adoption. The result indirectly shows that the existence of e-wallets is in line with the needs of society and does not conflict with the prevailing values and norms. Consumers may also find that the use of e-wallets is compatible with their experience in using existing payment systems such as credit/debit cards as well as cash.

Second, observability has the second largest significant influence on consumers' intentions. This indicates that the easier it is for someone to see the results or benefits of using an e-wallet, the greater the possibility of using it. The result is supported by Duan et al (2010) who proved that the observability character of innovation could prompt individuals to discuss it with their friends and neighbors thus creating a positive intention to use the technology.

Third, trialability has a positive significant influence on consumers' intentions. The result is consistent with Ghani and Khalil (2021) which shows that the trialability nature of e-wallets influence the adoption intention among small companies in the retail industry. This finding could be the outcome of the various government initiatives through e-Tunai Rakyat and e-Penjana programs which provided a certain amount of money to encourage Malaysian to use e-wallets. As the process of trying is facilitated by the government thus reducing financial risk, this has caused more consumers to continue using it.

Finally, the result shows that relative advantage and complexity are not significant in influencing consumers' intention to use e-wallets. Despite contradicting findings from similar studies such as Menzli et al (2022) which found a significant relationship between both factors and adoption, some other studies such as Ghani and Khalil (2021) however confirmed that complexity indeed does not play a significant impact on intention to use e-wallets. Knudsen and Roman (2015) on the other hand also show that relative advantage is a less important feature of innovation. This could be due to several factors such as consumers could easily use the system and do not perceive it as complex or consumers in general willing to learn and accept the challenge to learn it as they could reap some benefits from it. In the context of consumers who claimed for e-Tunai or e-Penjana, complexity may not be significant as they try their best to learn to get the incentive offered by the government. Meanwhile, a relative advantage may not be significant as consumers see that the cash value or other current systems are easier to use and have more advantages than e-wallets.

Implications

Several implications could be drawn from this study. First, the result of the study provides an understanding not only to the e-wallet service providers but also to the policymakers on factors that could increase Malaysian consumers' intention to use e-wallets. As the competition between providers is high since Malaysia has 43 active registered e-wallet in Malaysia competing for the 32 million population, several factors found to be significant in this study could be used as a guideline to plan for a suitable strategy.

Second, looking at the result one by one, as the trialability aspect is important, service providers should make the trial process as easy and as less risky as possible. The government initiative through e-Pemula, e-Penjana and e-Tunai Rakyat could be continued as it provides a boost for Malaysians to try using e-wallets. Other than that, since the observability aspect is also important, marketing campaigns either from the provider or the government side should try to make the usage and benefits of e-wallets clear so that consumers understand its advantage. On the other hand, marketing campaign also could focus on the compatibility of e-wallets with the current payment system, to make it easy for consumers to decide whether to use them or not, since compatibility also is one of the factors influencing consumers' intention.

Finally, the non-significant relationship between relative advantage and complexity with intention also needs to be given intention. If relative advantage is not significant in influencing consumers' intention because consumers are unable to see the advantage of using e-wallets, service providers, therefore, should make sure that the benefits of using e-wallets are visible to encourage more consumers to use them. On the other hand, despite the non-significant result, service providers still need to make the e-wallet system less complex because the study does not measure the level of complexity that could be tolerated by consumers.

Conclusion

In summary, the study examined the influence of relative advantage, compatibility, complexity, trialability and observability in influencing intention. Three factors were found to be significant with the highest influence coming from compatibility, followed by observability and trialability. Two factors however are not significant which are relative advantage and complexity.

However, there are several limitations of this study. First, the study uses non-random sampling and as such limit the generalizability of the findings. Future studies could use

random sampling to ensure the generalizability of the result. Second, the study focuses on certain characteristics of the innovation only and does not look into the technical aspect such as ease of use and performance. As such, future studies may look into these aspects to add richness to the result.

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