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Factors Influencing E-Wallet Adoption among Adults During Covid-19 Pandemic in Malaysia: Extending The Tam Model

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Abstract

The e-wallet has emerged as a new alternative payment mechanism in recent years. Malaysia can fulfil its vision of being a cashless country and change the new norm as a cashless society by increasing E-wallet adoption. Previous e-wallet research has concentrated on factors such as perceived risk and variables from the Technology Acceptance Model (TAM) that influence e-wallet usage. However, the impact of government support and perceived risk on individual behaviour was not well studied during the COVID-19 epidemic. As a result, the purpose of this paper is to discuss the issues in the underlying theories relating to technology adoption as well as to investigate the effects of perceived risk, government support, behavioural intention, and perceived usefulness as mediating factors on the intention to use e-wallet among adults in Malaysia during the COVID-19 pandemic. The participants in this study aged 25 to 60 years old from Peninsular Malaysia, Sabah, and Sarawak who planned to engage in e-wallet transactions. The partial least square SEM was used to analyse the data (SmartPLS). The study investigates the causes as well as a number of difficulties that have arisen as a result of the past research findings that have been inconsistent. It also compares the integrated TAM model to other aspects and determines whether TAM is the dominating model in adjusting to new technologies like e-wallets. The outcomes of this study are crucial in establishing which determinants influence e-wallet usage in Malaysia during COVID 19. Furthermore, e-wallet marketers will learn more about consumer behaviour and the challenges of e-wallet adoption among Malaysian youth. The government may also help e-wallet companies develop their global e-commerce sales.

Keywords: E-wallet, Perceived Usefulness, Government Support, Perceived Risk, Behavioural Intention

Introduction

The global outbreak of Coronavirus Disease 2019 (COVID-19) has prompted the Malaysian government to declare Malaysian Movement Control Order (MCO) on March 18th, 2020. As a result, the public and commercial sectors are collaborating to improve coordination and close the service gaps (Ab Malik et al., 2020). The business climate is competitive nowadays, and businesses must endeavour to provide excellent products and services to their clients (Wei et al., 2009). M-commerce refers to the fast-growing wireless and mobile networks that provide new platforms for businesses to sell their products more efficiently (mobile commerce).

According to Schwiderski-Grosche and Knospe (2002), M-commerce is a subset of e-commerce that refers to wireless e-commerce in business to business (B2B) or business to consumer (B2C) settings. Mobile commerce is good for customers because it saves them a lot of time and effort when they go shopping. Mobile financial services (m-banking, m-payment, and m-brokering), mobile shopping (m-retailing, m-ticketing, and m-auctions), and mobile entertainment (m-gaming, m-music, m-video, and m-betting) are the three components of m-commerce in terms of services (Khalifa & Shen, 2008).

For instance, online ordering is preferred over traditional ordering methods especially during Covid 19. This scenario can encourage small company owners and consumers to embrace digital payments, which are safer, cashless, and more efficient because the payment system has switched from cash to electronic money (e-wallet) (Yang et al., 2021). Digital currency and smartphone apps for internet banking are also used in e-wallet transactions, making them more accessible at any time and any place (Sohail et al., 2018).

Furthermore, e-wallet offers a simple cash reloading system that accepts cash, debit/credit cards, and bank transfers. In fact, transaction tracking through e-wallet is simple and allows users to keep track of their spending because an e-wallet keeps track of everything they spend (Bakar et al., 2020). Therefore, to ensure that e-wallet becomes an acceptable payment option for clients, the area of e-wallet implementation must cover a large area of consumption. Figure 1 illustrates the areas of e-wallet implementation for digital currency payments.

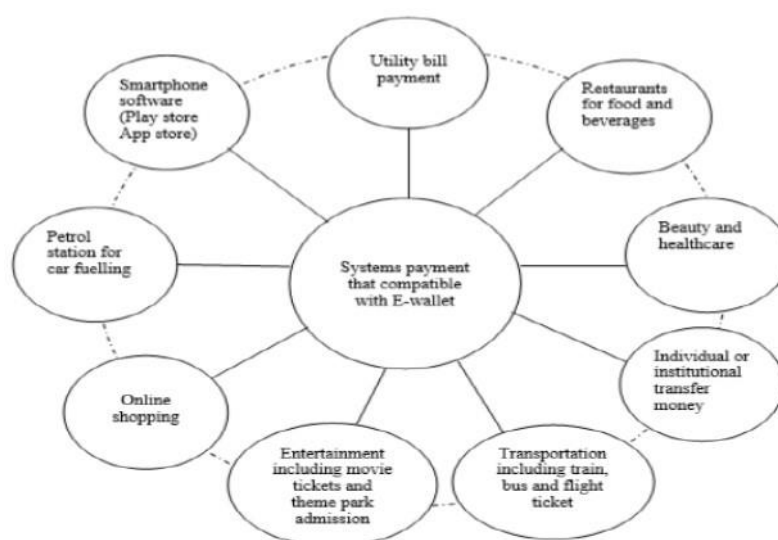


Figure 1. Applicable area of e-wallet for payment transaction

Source: Bakar et al (2020)

Fintech Malaysian report (2021), 53 e-money issuers have online and mobile banking penetration of 112.5 percent and 61.8 percent, respectively. According to the Ker (2019), the first half of 2018 to the end of 2019, there are three well-known e-wallet which have providers successfully dominated the market in Malaysia; Grab Pay, Touch n Go and Boost. Figure 2 shows the rating of e-wallet based on the number of active users. From the third quarter of 2018 to the fourth quarter of 2019, Grab Pay has constantly dominated the market. Grab apps have been downloaded over 20 million times as of 2020 (Hassan, 2020). Touch n Go and Boost, on the other hand, have 5 million and 4.8 million users, respectively and currently they have over 100,000 retailers on their platforms.








Ranking	Year					
	2018		2019			
	3 rd Quarter	4 th Quarter	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
1 st						
2 nd						
3 th						

Figure 2. Top e-wallet in Malaysia

Source: Ker (2019)

Besides that, Bank Negara Malaysia (BNM) has created the Interoperable Credit Transfer Framework (ICTF) as a payment infrastructure that connects any bank or non-bank account. BNM has released the Financial Sector Blueprint 2011-2020 to eliminate the use of paper checks and promote the use of electronic payments (Teoh et al., 2020). Furthermore, Payments Network Malaysia Sdn Bhd (PayNet) has created the Real-time Retail Payment Platform (RPP), which enables safe payments utilising basic identifiers from individuals such as company registration numbers, Identity Card (IC), and Quick Response (QR) codes through mobile phones (*The Star*, 2020).

In Malaysia, e-wallet use is growing because the government, banks, and businesses together to make e-wallet the most popular payment method for clients. The Shariah Advisory Council Bank Negara Malaysia ruling on e-money (2020) highlighted the operationalization structure of e-wallet in Figure 2. There are several steps of using the e-wallet. Firstly, the user registers and places funds into the e-wallet account. Secondly, the user makes a transaction by purchasing the products and making payment to merchant. Thirdly, the approved e-wallet issuer makes settlement to the merchant on the behalf of the user. Lastly, the authorized issuer charges the merchant according to the contractual agreement between both parties.

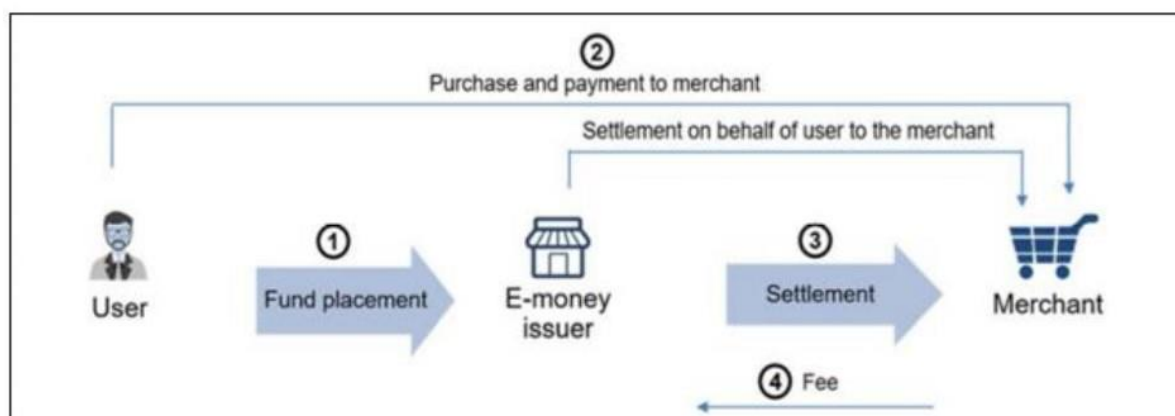


Figure 3. Operationalization structure of e-wallet

Sources: *Shariah Advisory Council Bank Negara Malaysia ruling on e-money 2020*

In Malaysia, the concept of e-wallet has been a great interest since it will have a significant impact on the country's business model, financial markets, and payment system since it will have a significant impact on the country's business model, financial markets, and payment system. Hence, the objectives of this paper are: (i) to determine the effect of perceived risk and government support on the intention to use e-wallet during COVID-19 pandemic and (ii) to examine the perceived usefulness mediating the effect of government support and perceived risk on intention to use e-wallet. This study supports our government's recent announcement of an e-wallet incentive for all Malaysian residents aged 18 and above, as well as for those who have their annual income of less than RM100,000 as part of the Malaysian Budget 2020. This policy reflects the government's aim to move rapidly toward a cashless society. This policy aims to accelerate e-wallet adoption in Malaysia by encouraging the public, small businesses, and retail stores to accept digital payments in Malaysia. As a result, this study helps to identify the factors that influence the usage of e-wallet and this will tremendously assist Bank Negara Malaysia and the government in providing insight and information on e-wallet adoption from the consumer's perspective. Malaysia's ability to successfully shift to a high-efficiency cashless society in the future is determined by the using of E-wallets (Teoh et al., 2020).

Literature Review

There are several arguments pertaining to e-wallet research, each with its own set of features and underlying ideas. This section will discuss on the most important ideas in the field of technology adoption, as well as some of the weaknesses.

Table 1
Comparison of Theories in Technology Adoption

Theories	Key Idea	Weaknesses
Diffusions of Innovation (DOI)	The process of transferring an idea from its inception to its eventual consumers which consist of five classes namely innovators, early adopters, early majority, late majority, and laggards.	There are various adopters who are innovators or early adopters in the context of technological advancements, but they do not swiftly accept the innovation (Downs & Mohr, 1976). When the adopter gets information from a lot of different sources, the one-way paradigm does not work and it needs lot of new communication routes (Geroski, 2000).
Theory of Reasoned Action (TRA)	The theory explains individual usage behaviour based on subjective norms, attitudes, and behavioural intention.	The issue in TRA is that behaviour must be voluntary, with attitudes and subjective norms being determined by the individual's decision. However, behaviours such as habitual is not permitted because it may not be voluntary (Bentler & Speckart, 1979). TRA can only explain 40% of the variance in behaviour (Ajzen, 1991). An individual may not engage in a behaviour because he or she lacks specific abilities and opportunities, he or she rather chooses not to engage in the behaviour voluntarily (Liska, 1984).
Theory of Planned Behavior (TPB)	This theory incorporates a new aspect known as "perceived behavioural control," which is important for non-voluntary users.	TPB ignores other external factors such as personality-related factors, cultural factors, and demographic variables, all of which influence individual behaviour (Hanson, 2005). Factors in TPB such as subjective norm, attitude, and perceived behavioural control were not sufficiently operationalized and exhibited little variance among the variables, based on the findings from a literature review (Ogden, 2003)
Innovation Diffusion Theory (IDT)	The theory intends to gain a better understanding of individual reactions to innovation, particularly technological innovation which consist of five (5) stages: knowledge, persuasion, decision, execution, and confirmation.	The problem occurs when the theory ignores the potential for individual behaviour to adopt or reject new technology, implying a lack of attention to inventive features and how they develop over time (Wolfe, 1994). The nature of knowledge use in the transmission of innovations is complicated by the conflict between direct adoption (replication) and reinvention (adaptation) (Charters & Pellegrin, 1972)

From the explanation above, it shows that there are four models or theories that have many problems, especially when it comes to using new technologies. Hence, the next section discusses the Technology Acceptance Model (TAM) which solves the limitation for other theories.

Technology Acceptance Model (TAM)

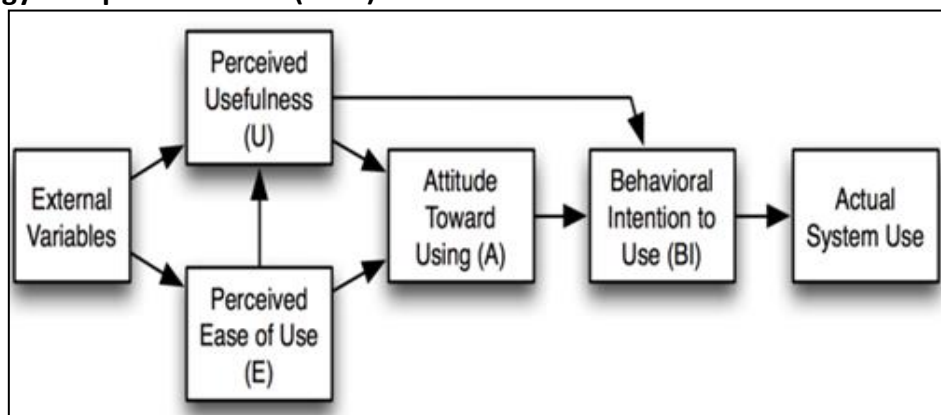


Figure 4. Model of Technology Acceptance Model (TAM)

Source: Adopted from Davis (1989)

TAM is based on a theory of reasoned action which explores the relationship between perception individual adoption and usage of new technologies (Davis et al., 1989). Additionally, TAM incorporates two additional characteristics, namely perceived usefulness and perceived ease of use. The degree to which an individual feels a system or technology is advantageous, and as a result, he or she will be more inclined to adopt it, this is known as perceived usefulness. On the other hand, perceived ease of use relates to people's opinions of whether a technology may help them perform better or it may be used straightaway (Davis, 1989). On the other hand, behavioural intention to use is a construct that is based on the user's attitude and it determines his or her usage of a new technology (Davis, 1989). TAM has been implemented in various studies and recorded in a huge literature, notably in the context of e-wallet, and it has been well-established throughout the decades due to its resiliency (Singh & Ghatak, 2021; Yaakop et al., 2021; Karim et al., 2020; Ming et al., 2020; Taufan & Yuwono, 2019; Lonare et al., 2018; Seetharaman et al., 2017). As a result, the TAM model is the most popular and dominant theory, and it has been demonstrated to be extremely effective in practical studies including the adaptation to new technologies such as e-wallet.

Factors that Influence Behavioural Intention in Adopting E-Wallet

Behavioural Intention

The strength of one's desire to engage in a particular behaviour is known as behavioural intention (Amoroso & Magnier-Watanabe, 2012). According to Leong et al. (2013), the using of e-wallet has a direct impact on behavioural intention. As a result, the simplified e-wallet approval processes have influenced perceived utility, which in turn influences behavioural intention (Mcmillan, 2018). An estimated variation in behavioural intention to utilise new technologies such as e-wallet platforms has been employed in the conceptual framework model of this study.

Government Support

Government support is a plan or strategy that affects how individuals and corporations make decisions. The government support has a significant impact on e-wallet usage in Malaysia. This conclusion is in line with the findings of Aji et al (2020); Victoria and Amir (2018), who found that Malaysians are enthusiastic supporters of their government and actively participate in COVID-19 activities. The Malaysian government periodically gives an "Economic Stimulus Package Concerning the People" and it has scheduled 29 packages under the "PRIHATIN" programme to assist Malaysians during the COVID-19 pandemic. According to Aji et al (2020), perceived usefulness influences the relationship between government support, perceived risk, and behavioural intention. In other words, customers believe that using e-wallet is a highly beneficial strategy during the COVID-19 outbreak since it helps them to help them acquire things and services. When the government supports e-wallets, it has an effect on how Malaysians think about them and how much money they spend on e-wallets.

H1: Government support positively affects behavioural intention to use e-wallets

H2: Government support positively affects perceived usefulness

H6: Government support positively affects perceived usefulness on behavioural intention to use e-wallets

Perceived Risk

Perceived risk is the level of danger a client feels when making a purchasing decision (Cox & Rich, 1964). Using data for commercial purposes and advertising purposes could deem a breach of trust or exploitation of personal data (Mcmillan, 2018). Furthermore, the digital business world is marked by frequent data breaches, fraud, and constant monitoring (Morosan & DeFranco, 2016). It may, for example, advise the customers to protect their personal information or refrain from adopting technology-required behaviours. The adoption of e-wallet platforms by young adult customers is influenced by their perception of risk (Razif et al., 2020). As a result, e-wallet providers should use perceived risk as an opportunity to learn more about their customers' needs and desires. As a result, banks and online transaction providers are working hard to increase e-wallet adoption. Customers must have faith in e-wallet providers, policymakers, and financial institutions to make sure the whole system stays safe.

H3: Perceived risk negatively affects behavioural intention to use e-wallets

H4: Perceived risk negatively affects perceived usefulness

H7: Perceived risk negatively affects perceived usefulness on behavioural intention to use e-wallets

Perceived Usefulness

Perceived usefulness, as defined by Davis (1989), is the degree to which customers believe a system would increase their work performance. Perceived usefulness relates to the acceptability of using specific systems to improve the performance of an e-wallet platform (Davis et al., 1989). People are more likely to adopt e-wallet if the practice improves the overall effectiveness and productivity of the task. According to Venkatesh and Davis (2003), usability factors such as database structures, are crucial indicators of contentment. The usability of the scheme is tied to the evolution of the page. Users should be able to navigate and use the platform more easily if providers make it more user-friendly. According to Davis et al (1989), e-payment consumers find value in the system. User adoption of e-payment is influenced by the perceived value of extensive study. Perceived utility components and the

intention to utilise e-wallet platform have a positive relationship (Razif et al., 2020). The usability and simplicity of using a website should be prioritised in its design. It can measure its influence on perceived usefulness and increase customer motivation. Banks and financial institutions stress the need for a marketing campaign utilising an e-wallet platform.

H5: Perceived usefulness positively affects behavioural intention to use e-wallets

Methodology

This research applies cross-sectional study at a single point in time. An online survey form was used to collect primary data in accordance with the government's mobility control order, which was implemented in response to the COVID-19 pandemic's social distancing. The survey form was made using Google Forms, and its link was sent to all responders by email, WhatsApp, and Facebook. All participants to fill in consent form and were briefed on the research goal prior to participating. The instructions for filling out the survey were recorded and transmitted via WhatsApp. The convenience sample technique was used to distribute questionnaires to respondents aged 25 to 60 in Malaysia. This research has chosen Malaysian working adults because they had wages that contributed to society in terms of daily cash flow. Furthermore, the survey was divided into two categories: demographic information and variables impacting e-wallet usage (perceived risk, government support, perceived usefulness, and behavioural intention). The questionnaire was given in both languages: Malay and English. This is because it helps to provide a better understanding of the questions and more accurate response. Finally, data was evaluated using partial least square SEM (SmartPLS).

Conclusion

The findings of the study will be beneficial to customers, e-wallet operators, and the Malaysian government. This is consistent with the government's strategy, which includes the e-PENJANA e-wallet stimulus, the Shop Malaysia Online programme, and the Micro, Small, and Medium Enterprises (MSME) E-commerce Campaign. The government support has a significant impact on the economy, where variety of packages that have been supplied to help customers cope with the COVID-19 pandemic. The Malaysian government should establish strict laws for those who are using e-wallet to reduce risk. Furthermore, the outcome will add value to the TAM model's theoretical viability in assessing customer perception and the use of e-wallet. This study helps Malaysian e-wallet providers such as Boost Pay, Touch N' Go Wallet, Vcash, Razerpay, and Grab Pay in their marketing efforts. Finally, e-wallet providers should develop user-friendly software to make e-wallet payments as simple as possible for users.

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