CONTINUANCE INTENTION TO USE E-WALLET AS A PAYMENT INSTRUMENT AMONG GENERATION Z IN MALAYSIA – A BEHAVIOURAL STUDY

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This dissertation/thesis entitled "**CONTINUANCE INTENTION TO USE E-WALLET AS A PAYMENT INSTRUMENT AMONG GENERATION Z IN MALAYSIA**" was prepared by Wong Xin Yan and submitted as partial fulfillment of the requirements for the degree of <u>Master of Business Administration (Corporate Management)</u> at Universiti Tunku Abdul Rahman.

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(APPENDIX I)

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Form Title : **Sample of Submission Sheet for FYP/Dissertation/Thesis**			
Form Number : **FM-IAD-004**	Rev No: **0**	Effective Date: **21 June**	Page No: **1**

FACULTY OF BUSINESS AND FINANCE

UNIVERSITI TUNKU ABDUL RAHMAN

Date: 23/6/2023

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CONTINUANCE INTENTION TO USE E-WALLET AS A PAYMENT INSTRUMENT IN MALAYSIA- A BEHAVIOURAL STUDY

By

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A thesis submitted to the Department of Marketing,

Faculty of Business and Finance,

Universiti Tunku Abdul Rahman,

in partial fulfillment of the requirements for the degree of

Master of Business Administration (Corporate Management)

May 2023

ABSTRACT

**CONTINUANCE INTENTION TO USE E-WALLET AS A PAYMENT
INSTRUMENT IN MALAYSIA- A BEHAVIOURAL STUDY**

WONG XIN YAN

E-Wallet is adopted for online transactions through a computer or a phone. E-Wallet usage has grown during the pandemic but fell after the pandemic. This report will discuss the problem that users confronting when continue using E-Wallet. Since a sizable group exists in Malaysia, this research will focus on Generation Z (71%). Then, this research will provide managerial decision-makers with a beneficial indication of how to improve and persuade users to continue using E-Wallet based on a few primary factors. It has also given academics more understanding of why this topic should be studied and how this study is unique from others.

This project has adopted the Mobile Technology Acceptance Model, which included four variables: mobile usefulness, ease of use, security risk, and trust toward the service provider to define the continuance intention. Since limited research examines the MTAM model for E-Wallet, the current author will propose a new conceptual framework and validate the relationship between IVs and DV.

This research applies the quantitative approach, which is used to measure numerical data. The current author created the questionnaire that measured the variables by adopting 5 points Likert Scale (Strongly disagree, disagree, neutral, agree, strongly agree). Next, the current author distributed it to the 384 respondents using purposive sampling. Then, the current researcher will collect the questionnaire response and use those data to perform a test analysis like descriptive, inferential, and correlation results. Based on the findings, the mobile perceived security risk is an insignificant variable.

Further, the interpretations of the hypothesis findings will also be discussed whether the research objectives are achieved. It will also present the recommendation that solves the inefficiency of each hypothesis that provides indications for managerial decision-makers and academics. Lastly, the project limitations have been discussed, and this project has proposed recommendations and offered guidance to future researchers.

ACKNOWLEDGEMENT

DEDICATION

This research project is dedicated to my respectful supervisor, Dr Lam Siew Yong, who assisted me along the way by giving me feedback and advice. This project is also dedicated to my cherished family members and friends. I was pleased with their ongoing support, inspiration, and feedback for improvement; therefore, I was able to finish the project on time.

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LIST OF ABBREVIATIONS

DV: Dependent Variable

IV: Independent Variable

CI: Continuance Intention to use E-Wallet

MU: Mobile Usefulness

MEU: Mobile Ease of Use

MPSR: Mobile Perceived Security Risk

MPT: Mobile Perceived Trust

MPR: Mobile Perceived Risk

PS: Perceived Security

PS: Perceived Safety

PSR: Perceived Security Risk

PT: Perceived Trust

SPSS: Statistical Package for Social Science

TAM: Technology Acceptance Model

MTAM: Mobile Technology Acceptance Model

Gen Z: Generation Z

Gen Y: Generation Y

ANOVA: Analysis of Variance

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CHAPTER 1

RESEARCH OVERVIEW

This chapter introduces the E-Wallet's evolution, potential, challenges, and the government's effort to raise E-Wallet adoption among Malaysians. In the next section, the research has explored and identified problems that induce Malaysians to use fewer E-Wallets nowadays. Next, the research questions and objectives are laid out. Lastly, the research significance of the implications for managerial decision-makers and academics has been elaborated.

1.1 Research Background

Malaysia's payment system development has been changing in recent years. It involves expanding the range of payment methods and services and enhancing cost efficiency (Elinson & Byrne, 2022). Conventionally, the Malaysia payment system uses cash for the business transaction. Then, e- payment systems such as open banking, cross-border payments, real-time payments, or buy now, pay later were introduced (Elinson & Byrne, 2022). Recently, the E-Wallet, an electronic wallet, was introduced in Malaysia, in which users can transact via computers or smartphones (The Malaysian Reserve, 2022). In 2021, Malaysia's government

became the role model in instructing all government payments to use a cashless
or e-payment system in the future (Ng, 2022). The program under MyDigital,
Malaysia's digital economy blueprint, promoted the country's move to a cashless
or digital economy.

Nowadays, the adoption of cashless transactions is becoming prevalent in
Malaysia due to the advancement of technology and digital aid (The Malaysian
Reserve, 2022). An E-Wallet advancement has heavily influenced Malaysia's
business mode, capital markets, and payment structure. In this era, E-Wallet has
become an essential component of the Southeast Asia user market, financially
providing over a million people with access to them (Sidebar, 2022).

Based on the MasterCard Impact Study 2020, Malaysia is dominating Southeast
Asia in adopting mobile wallets, accounting for 40% of the market, ahead of the
Philippines (36%), Thailand (27%), and Singapore (26%) (Tan & Cheong, 2020).
In line with a Fintech News Malaysia article, there are 53 E-Wallets across
Malaysia, and this industry has taken up 19% of the nation's fintech sector (The
Malaysian Reserve, 2022). Several well-known E-Wallet providers in Malaysia
include Touch and Go (TnG) E-Wallet, GrabPay Wallet, JomPAY, WeChat Pay,
and Boost Pay. This digital payment instrument has benefited users with
convenience and flexibility. For instance, it eliminated the need for a physical

wallet like paying with cash or a card (Daragmeh et al., 2021). Apart from users, Malaysia's small and medium-sized enterprises (SMEs) have significantly used E-Wallets, contributing to the country's revenue and enhancing competitiveness locally and globally (Evolet, 2021). Touch'n Goes E-Wallets are preferred among users (The Malaysian Reserve, 2022).

As reported in the Visa Consumer Payment Attitudes (2021) research, over 74% of Malaysian consumers have changed their behaviour, and about 7 of 10 Malaysians will go cashless (Ridzaimi, 2022). It is supported by the Statista survey conducted in 2022 that 68% of Malaysian consumers have utilized an E-Wallet, the highest percentage share of people who use digital wallets since 2019 (Statista, 2022).

Moreover, the government has put effort into Malaysia's digital transformation. The government has launched the e-Penjana program under the Budget 2021 and 2022 to strengthen user awareness and comprehension of E-Wallet (Birruntha, 2020). For instance, individuals who have downloaded digital wallets like Boost, Touch 'n Go, and GrabPay and have qualified accounts can claim an additional RM150 of E-Wallet credit. Since the government has promoted a cashless society, Malaysia can combat corruption and organized crime in the nation, bringing accountability and transparency to the monetary system (Kadar et al., 2019).

This research targets Generation Z, people born between 1997 and 2012, who will be between the ages of 11 and 26 in 2023 (Tjiptono et al., 2020). According to the Oppotus report, Gen Z is Malaysia's most active E-Wallet users, representing 71%, followed by millennials at 60%, Gen X at 59%, and senior citizens at 43% (Sticpay, 2021) (Appendix A). In this case, they prefer rapid convenience and flexibility and have vital storage to use digital payments (Tjiptono, 2020). Also, Gen Z is the largest age group and is technologically proficient, making up about 29% of the population in Malaysia. Thus, they will comprise the most significant percentage of E-Wallet users (Mustafa et al., 2022).

Notwithstanding, the continuance intention to adopt E-Wallet has gained less attentiveness from the developers of E-Wallet (Halim et al., 2021). Hence, the E-Wallet service providers must motivate and maintain existing customers to continue using the E-Wallet app. Through this study, the continuance intention to use E-Wallet will be studied and further elaborated. Most past studies investigated behavioural intention, like how to implement behavioural intention theories to determine the user's intention of using an E-Wallet. Nonetheless, this study will study practices to enhance Gen Z's continuous intention to use E-Wallet and foster economic growth.

1.2 Research Problem

An E-Wallet speeds up the transaction process and stores money electronically conveniently, quickly, and effectively (Wardana et al., 2022). However, most Malaysian are preferred to use cash above other methods recently (Misbah, 2022). Although there are 68% of E-Wallet users in Malaysia, there are considered low compared to high-usage countries like China, which has the highest mobile payment adoption rate, accounting for 87.3% (Curry, 2023). Compared to China, the Chinese have adopted digital payments with street performers, street food vendors, and taxis, all providing QR codes to pay (Curry, 2023). Supported by a survey in 2022, 65% of consumers do not utilize electronic wallets to make payments, compared to only 45% of consumers who do (Statista, 2023).

The worldwide pandemic known as Covid-19 occurred in Malaysia in 2020, and cases have increased daily until 2022. The Malaysian government has enforced the Movement Control Order (MCO), like physical closure, to combat the pandemic. Eventually, the business models have turned from physical to online to reduce contact with others. Simultaneously, the awareness of digital payment has increased during the pandemic period (Bavel et al., 2020; The Star, 2020). In 2019, before Covid-19, E-Wallets' usage increased and achieved a 25% penetration rate (Peng, 2023) (Appendix B). During the pandemic, the Malaysia

usage rate escalated to 67%, recorded the highest in 2021, double the percentage before the pandemic (Peng, 2023). For that, the government has contributed mainly by implementing E-Wallet initiatives to form a cashless society, thus can reduce contact during a pandemic.

However, in 2021, the cases of the pandemic reduced in Malaysia, and the government opened the international broader and loosened the restriction rules. E-Wallet usage by Malaysians has dropped to only 45% in Quarter 4, 2022 (Peng, 2023) (Appendix C). The percentage dropped because consumers have other payment options without worrying about virus transmission. According to research, 34% of Malaysian consumers view cash as the preferred payment method, followed by debit cards at 19%, and E-Wallet is recorded at 15% of the preference (Peng, 2023) (Appendix D). For that, many small businesses do not use E-Wallet and only accept cash, which causes consumers inconvenience in bringing cash out (Wong, 2022).

In addition, users' initial acceptance of new technology (E-Wallet) is only the first phase, and final success remains unforeseen in its continued usage (Herjanto, 2020). The study findings on mobile app usage showed that after three months of an app installation, only 24% of the users would keep using the app. Then, the percentage of using the app after six months fell to 14%, and only 4% of the users adopted it after one year of installation (Halim et al., 2022). Many

individuals download E-Wallet applications as the government's incentives attract them, yet they do not continue to adopt E-Wallet after it expires (Halim et al., 2022). It creates a scenario whereby more people were using E-Wallet during the pandemic, while it declined after the pandemic (Yee & Singh, 2019). This is due to the pandemic; customers now prefer alternatives to E-Wallet for transactions, like cash, debit or credit card, and mobile banking.

In accordance with Ismail (2021) claims that the consistency of E-Wallet usage is considered low and disappointing as most Malaysian remain ignorant of the advantage of E-Wallet. This is owing to Malaysians facing complexity, understanding, security, and trust issues toward the system (Webmaster, 2022). Consequently, it will likely cause them to lack the continuance intention to perform their daily transaction through E-Wallet. Due to the E-Wallet's providers struggles to lure customer continuance intention to use, the users cannot enjoy convenience, effectiveness, and cost-saving (Seng & Hee, 2021).

Furthermore, some Malaysians found that E-Wallets are not useful for them; eventually, they do not keep using E-Wallet to conduct transactions. In this scenario, the users do not have sufficient knowledge about this new technology and are not exposed to this service. Importantly, consumers in rural areas still use cash payments instead of an E-Wallet (Izzah et al., 2022). They do not see how E-Wallet can improve their lifestyle in terms of time savings, cost savings,

and convenience (Subaramaniam & Kolandaisamy, 2020). In this case, some users sometimes feel that when they are using cashless transactions, they are focusing on what they need to buy, but sometimes they might not need all. It will lead to individual overbudgeting as an app can top-up automatically when the balance is lower than the set amount (Ramya, 2017).

The research also reveals that the E-Wallet app has technical issues like system malfunction, outages, or shutdowns that provoke users to feel that E-Wallet is not beneficial (Subaramaniam & Kolandaisamy, 2020). Consequently, it makes people restart the app and delay the transaction time. Some people will direct pay cash instead of an E-Wallet, and undeniably, the customers will feel frustrated and may stop to use the app. Additionally, some customers think E-Wallet is inconvenient as the app is not fully accessible in Malaysia (Misbah, 2022). For instance, E-Wallet is not popular in some rural areas. Some retailers only accept real cash and don't accept any kind of other payment approaches (Subaramaniam & Kolandaisamy, 2020). It forced people to bring cash when going out, causing inconvenience and dissatisfaction with E-Wallet's usefulness.

Another issue is that fewer merchants accept E-Wallet payments from their customers (Wong, 2021). For example, the different merchant has their preferred payment E-Wallet method. Then, the customers must install two or more E-

Wallet apps on their mobile devices and top-up their money in applications to confront the various merchants. Subsequently, it prevents the customers from taking advantage of flexibility in terms of usefulness. In short, it lowers their desire to continue using E-Wallet in transactions.

According to Nielsen's report, 38% of Malaysians view E-Wallet as not easy to use (Yee & Singh, 2019). Nowadays, Malaysians still prefer to pay by cash to purchase groceries or dine out, which is convenient, fast, and effective. Sometimes, consumers who use the E-Wallet for payment must wait for the response, delaying the overall transaction process (Johnson et al., 2018; Tavakoli et al., 2018).

In addition, Malaysian users who lack knowledge and awareness of the technology may find E-Wallet difficult to operate (Karim et al., 2020). Even though most Malaysian use smartphones, some are unfamiliar with new technology (Ellia, 2019). For instance, some illiteracy or aging users will feel confused when using E-Wallet. They don't understand how to function features like scan QR codes for payment or topping up money when the balance is insufficient. E-Wallet. It will make the whole transaction process ineffective, then delete the app and hinder them from continue using E-Wallet (Isrososiawan et al., 2019).

Moreover, information violation issues continue in Malaysia, leading consumers to decrease their confidence and desire to keep using mobile wallets (Mohamed & Ahmad, 2012). According to the survey, 46% of users view security concerns as the most significant barrier (Yee & Singh, 2019). For example, some users have been attacked by password attacks, and regardless they have changed their password and backed up their data, they will uninstall the app because they lack confidence in it. Then, 59% consider E-Wallet can bring debit and credit card fraud; 38% are worried about missing transactions, and 36% are concerned with fake websites masquerading as being from mobile payments (Yee & Singh, 2019). Based on the Central Bank of Malaysia (2019), customers have stopped using E-Wallets because they know their security features. They worry about the high risk of security issues like data loss when a card is linked to a bank, identity theft, unsecured transactions, and cybercrimes that harm user satisfaction (Omar et al., 2022).

Besides, Gen Z is less likely to keep using mobile payment because of the risk related to online transactions (Halim et al., 2021). It includes risks like financial loss, wasted time, or other losses that make customers feel unfavourable during the transactions. For example, users are worrying E-Wallet safety is not secure. Thus, it is unsafe for them to top up their balance to a huge amount. Also, the E-Wallet service providers do not take any required protection for users and may let the users stop using E-Wallet (Alam et al., 2021).

According to Kiser et al. (2018), Malaysians have no trust in accepting innovation and lack trust in continue using E-Wallet. This is because mobile payment technology has confronted security breaches in the past, eventually making loyal users feel less confident about continuing the use of E-Wallet (Kiser et al., 2018). Furthermore, individuals do not believe in the advantage provided by the E-Wallet's service provider. It makes them feel holding cash is more secure and they have stopped using the E-Wallet (Subaramaniam et al., 2020). Based to Marria (2018), individuals who have experienced E-Wallet system problems would not trust E-Wallet security. They might worry their account would be hacked again and money was stolen since it is linked to a bank account. Simultaneously, Abrazhevich (2001) revealed that the E-Wallet's service provider and system setting failed to meet user expectations. In brief, the study concludes that consumers lack confidence in using E-Wallet and will not suggest the app to their surrounding families or friends as they lack trust in E-Wallet (O'Connor, 2022).

The study discovered that Malaysians still use cash to make payments, which is not conducive to economic development. According to the United Nations, most Malaysians are under the age of 15 (29.6%), between 15 and 64 (65.4%), and over 65 (5%) are still using cash for transactions (Nizam et al., 2019). This issue motivates the current researcher to investigate the factors influencing Gen Z's continuance intention to use E-Wallet as a payment instrument in Malaysia. The

BCG research concluded that the economy that turns to digital mode is more successful (Sullivan, 2019). Therefore, Malaysians should collaborate with the government to move toward a cashless economy to achieve a higher standard of living.

Many previous studies use Technology Acceptance Model (TAM), which includes two original variables, to study the user's behavioural intention to use E-Wallet. However, the topic is related to the user's continuance intention, and it found that the users react differently in an electronic environment compared to mobile. Hence, the TAM model is not suited to be adopted in these studies. In order to close the research gap, this study used an extended Model Technology Acceptance Model (MTAM) that includes variables like mobile perceived usefulness, mobile perceived ease-of-use, mobile perceived security risk, and mobile perceived trust to study users' continuance intention to use E-Wallet.

1.3 Research Questions

From the problems elaborated above, the research questions of this study are:

1. Do E-Wallet mobile usefulness and mobile ease of use influence Generation Z's continuance intention to use E-Wallet as a payment instrument in Malaysia?

2. Do E-Wallet mobile perceived security risk and mobile perceived trust influence Generation Z's continuance intention to use E-Wallet as a payment instrument in Malaysia?

1.4 Research Objectives

The research objectives are to examine the behavioural factors influencing Generation Z's continuance intention to use E-Wallet as a payment instrument in Malaysia. The specific objectives are as follows:

1. To examine the influence of E-Wallet's mobile usefulness and ease of use on Generation Z's continuance intention to use E-Wallet as a payment instrument in Malaysia.
2. To examine the influence of E-Wallet's mobile perceived security risk and E- Wallet's mobile perceived trust on Generation Z's continuance intention to use E-Wallet as a payment instrument in Malaysia.

1.5 Research Significance

1.5.1 To managerial decision maker

E-Wallet is transitioning from traditional to mobile payment, becoming an established part of international payments. It is undeniable that using an E-Wallet offers numerous advantages for users, including easy money transfer, quick and timely payments, and secure and fast data analysis (Yasar, 2023). Aside from users, the E-Wallet adoption will benefit managerial decision-makers in terms of profitability. Although the government and E-Wallet developers have devoted efforts to building awareness of E-Wallet across all ages, the growth in Malaysia is still slow and unsatisfactory (Mustafa et al., 2022).

This research will highlight the significance of variables influencing the user's continuance intention to use E-Wallet. The managerial decision-maker can identify the obstacles that may restrict the user's continuance intention for using the E-Wallet through the collected data from the target respondents. Moreover, based on the important variables agreed upon by respondents, the decision maker can devise strategies to increase users' intent to continue utilizing E-Wallet. Throughout this study, the government and decision-makers will realize it is insufficient to merely promote incentives to increase E-Wallet usage. Inversely,

it is essential to comprehend the problems that users care about most and propose methods to enhance their intention to keep using E-Wallet.

The irregular use of E-Wallet has motivated the current author to study Gen Z's continuous intention to utilize E-Wallet to ensure Malaysia is moving to the digital economy. Although previous studies have targeted other demographic groups, like Gen Y or working adults. However, the respondent's identity was still not accurately recognized compared to this study, which defined the Gen Z age range as 11 to 26. Hence, this research is emphasized Gen Z, the largest segment in Malaysia, born in the technological era, addicted to social media and the Internet, and open to trying new things. It is important to target the right segment as it will yield useful results for the public and decision-makers in structuring tactical strategies.

In brief, this finding will be helpful for the decision maker to take reference and plan implications to retain existing users by strengthening E-Wallet's service quality. They will comprehend how the following behavioural variables- E-Wallet mobile usefulness, ease of use, security risk, and trust affect users' desire to keep using E-Wallet. If the related hypotheses are accepted, the decision makers should increase E-Wallet usefulness by upgrading the app's function and consistently improving app design to ensure it is easy for all ages. Next, if the

security risk variable plays an important role, the decision maker should advance the security measure by launching two-factor authentication. Also, the decision maker should prioritize user interest to boost their trust and confidence in continue using the app if the trust hypothesis is supported.

1.5.2 To Academics

There are various research examining young consumer intention to adopt E-Wallets in developing nations like Indonesia (Varsha & Thulasiram, 2016), India (Trivedi, 2016), and China (Teng et al., 2018). In Malaysia, most research studied E-Wallet adoption and attitude toward E-Wallet usage (Abdullah, 2020; Saadon & Long, 2022; Kadir, 2022). Nonetheless, only limited research in Malaysia studies Gen Z's ongoing intent to use E-Wallet (Mustafa et al., 2022). As the mobile wallet market grows, the rivalry among E-Wallet companies will become competitive. Consequently, it raises providers' difficulty in maintaining existing users and attracting new opportunities to increase E-Wallet usage. Hence, the current researcher is studying the variables that affect Gen Z's willingness to keep using E-Wallet. It contributes to the academics having more understanding of users' continuance intention to adopt E-Wallet.

Regarding the theoretical basis for continuance intention, this research relies on the Mobile Technology Acceptance Model (MTAM). Inversely, other research mainly relied on SOR or UTAUT model to investigate the user's continuance intention, which founds the limitation between intention and behaviour (Abbasi et al., 2022; Moorthy et al., 2022). Some research applies the MTAM theory, yet the research investigated all users in Malaysia or solely focused on Gen Y (Tay et al., 2022). This study focuses on Gen Z in Malaysia as respondents. For that, it discovered Gen Z is the largest population in Malaysia; thereby, they can be defined as the largest potential users to use E-Wallet.

Some past studies only focused on studying respondents' intentions using ease of use, and usefulness, two elements (Kustono et al., 2020). However, this research will use two elements and additional variables, including security risk and trust to study the user's continuance intention. Research supported that these two additional IVs influenced respondents' continuance intentions (Tay et al., 2022; Chan et al., 2020; Zhang et al., 2019). In brief, by investing in new variables, this study can provide academics with more insight into Gen Z's behaviour and continuance intention toward the E-Wallet system.

In summary, this present study extends the literature about E-Wallet differently. Firstly, it examines the factors influencing users' continuance intention to use E-Wallet, which has gained less attention from academics. Then, the research

studies the MTAM model, hence devoting it to the literature by giving a
comprehensive picture of the MTAM model in which the variables play an
essential role. By reviewing studies on the MTAM model, the academic may
find MTAM model is more suited and can solve problems identified in prior
research studies. In order to confirm the relationship, this study has broadened
the literature by examining the relationship between variables and continuance
intention to use E-Wallet. Hence, academics can gain more insight into the
relationship between variables and explore the unknown ones.

1.6 Organization of the project

In sum, chapter 1 is concerned with explaining the background of this study to
influence Gen Z's continuance intention to use E-Wallet in Malaysia. Further,
the problem influencing continuing E-Wallet use among Malaysians has been
identified and discussed. Then, the study's research objectives, questions, and
significance to the managerial decision-makers and academics are also explored
in detail.

Chapter 2 started with the literature review, which is the theoretical framework
of the TAM model. However, due to a few limitations, the research has used the:
Mobile Technology Acceptance Model (MTAM) to identify users' continuance

intention to use E-Wallet. Next, the current researcher conducts the MTAM past studies' research to enrich the recent research and, at the same time, identify the literature gaps. Further, the author developed the hypothesis to find the relationship between variables and conclude based on empirical evidence. At the end of Chapter 2, the current research's conceptual framework is formed.

Chapter 3 reviews the research methodology used in the project. It includes research design, sampling design, development of the questionnaire, data collection method, and an analysis tool to validate data reliability and validity. The current research has also carried out the pre-test and pilot study to ensure the questionnaire's context is the feasibility of this research process.

Chapter 4 presents the descriptive and inferential analysis results to validate the current researcher's hypothesis. In Chapter 5, the research continues to discuss the accomplishment of the current study's objective. It proposes an implication for policymakers and academics to increase better users' continuance intention to use E-Wallet. Lastly, the research limitations and recommendations for future research have been explained in detail.

CHAPTER 2

LITERATURE REVIEW

This chapter will discuss the underlying theory of the MTAM model. Hence, the current author can identify the literature gaps and develop a new conceptual model. Besides, the relevant past additional variables of behavioural studies also have been discussed. Then, the current author proposes a hypothesis development that fills the literature gap between IVs and DV. Finally, it can give the researchers indicators to solve the issues.

2.1 Underlying Theory

2.1.1 Technology Acceptance Model (TAM)

The Technology Acceptance Mode (TAM) was proposed by Davis (1989) (Marikyan & Papagiannidis, 2022). TAM is revised based on the theory of Reasoned Action (TRA) created by Fishbein (1975) and dAjzen (1975) and the Theory of Planned Behaviour (TPB) by Ajzen (1991). The TAM theoretical model aims to anticipate behaviour and justifies the effective application of new technology in the workplace.

There are two essential components in the TAM model, including Perceived
Usefulness (PU) and Perceived Ease Of Use (PEU) (Marikyan & Papagiannidis,
2022). The model additionally suggested that ease of use is a predecessor to
usefulness. These two elements impact an individual's decision to use new
technology. Perceived Usefulness is the user's belief that utilizing a specific
application system will strengthen their work or lifestyle efficiency (Davis,
1989). Perceived Ease Of Use is the extent to which individuals believe that
adopting a specific system does not require any physical or mental energy (Tahar
et al., 2020).

The researcher has broadly utilized the grounding framework of the TAM to
study the respondent's intention to employ new technology with the two primary
factors, including perceived usefulness and perceived ease of use (Paul et al.,
2003) (see Figure 2.1).
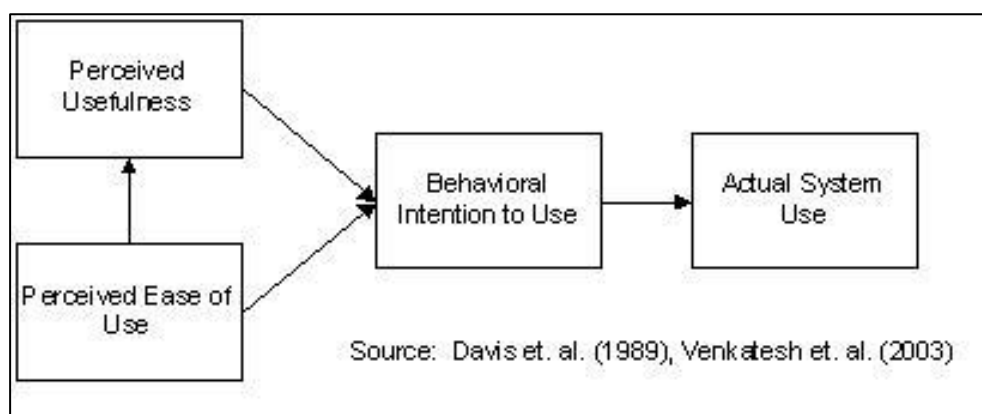
**Figure 2.1: The Theoretical Framework of Technology Acceptance Model
(TAM)**

Source: Davis et. al.,1989; Venkatesh et. al., 2003

Note. From "A theoretical extension of the technology acceptance model: Four
longitudinal field studies," by V. Venkatesh, & F. D. Davis, 2000,
Management science, *46*(2). p. 86-204. Copyright 2023 by the INFORMS.

Nevertheless, some TAM limitations and criteria influence the outcome and accuracy of using this model. Firstly, the TAM model only focuses on the variable related to an individual's behaviour; hence it only measures via subjective means like behavioural intention or interpersonal influence (Ajibade, 2018). For instance, the TAM model did not consider external variables like respondents' demographic profile, environment, etc. (Ajibade, 2018). Eventually, the result of the respondent's intention is not accurate.

Additionally, the behaviour cannot be measured exclusively through empirical research due to subjective factors like societal standards, ideals, and personal characteristics (Ajibade, 2018). For example, social influence has also influenced the intention to use technology (Ang et al., 2015). Further, the TAM model is emphasized and extensively used to evaluate an individual's attitude toward technology (Armenteros et al., 2013). Thereby, it can be said that the TAM model is not the best approach to measure users' behavioural continuance intentions. Lastly, few academicians have cited factors from other fields of study in the setting of mobile technology. This acknowledges an issue with applicability since various people react differently to electronic and mobile settings (Ooi & Tan, 2016).

Due to the constraints and limitations of the TAM model, the researcher has nominated a new model, the Mobile Technology Acceptance Model (MATM), which contains mobile users and mobile use to determine the user's continuance intention.

2.1.2 Mobile Technology Acceptance Model (MTAM)

The authors, Ooi and Tan (2016) designed Mobile Technology Acceptance (MTAM) to expressly customize information technology search to the requirements of the mobile environment (See Figure 2.2). The MTAM model has two components: Mobile Usefulness (MU) and Mobile Ease of Use (MEU). MU refers to how efficiency is constructed via technology, while MEU refers to how technology can make things easier (Ooi et al., 2019). In other words, MU is the extent to which an individual assumes that adopting a particular system would increase task efficiency (Davis, 1989). Inversely, MEU implies the extent to which individuals expect the system to be effortless (Halim et al., 2022). However, the researcher has declared that the two variables in the MTAM framework are insufficient to explain the individual's intention to adopt mobile technology (Lee et al., 2020).

Apart from the existing variables, the researchers have revised MTAM by including reliable and current components to make the model more comprehensive (Jaradat, 2013). According to Alam et al. (2021), Mobile Perceived Security Risk (MPSR) is an important crucial variable deciding a user's decision to continue using mobile technology services. Mobile Perceived Trust (MPT) is also one of the additional variables in the MTAM (Chan et al., 2020). The MTAM model has significantly been applied in numerous research areas like mobile banking, academic libraries, mobile wallet, and mobile clinic registration (Hanif & Lallie, 2021; Islam et al., 2021; Lew et al., 2020; Lai et al., 2016).

Nevertheless, the findings of MTAM research's hypothesis among MTAM variables are inconsistent. This is because the respondents reacted differently toward the measure items statement. Therefore, the current researcher must compile the respondents' findings and determine whether the hypothesis is validated.

In a nutshell, this research will use the extended MTAM model to study the continuance intention of Gen Z to use E-Wallet as the payment method in Malaysia. Those additional IVs in the MTAM model, including MPSR and MPT, discussed and determined how these variables affect the continuance intention of Gen Z to adopt an E-Wallet in Malaysia.
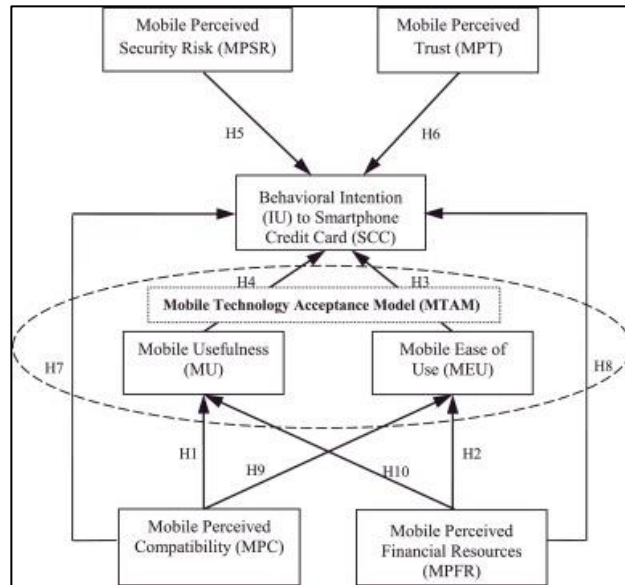
**Figure 2.2: The Theoretical Framework of the Mobile Technology
Acceptance Model (MTAM)**

Source: Ooi & Tan, 2016

Note. From "Mobile technology acceptance model: An investigation using
mobile users to explore smartphone credit card," by K. B. Ooi & G.W.H. Tan,
2016, *Expert Systems with Applications*, 59, p. 33-46. Copyright 2023 by
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2.2 Relevant Past MTAM Studies

Figure 2.1 shows the framework of the TAM model. This model has some

constraints and limitations, as elaborated above. This study adopted the MTAM

model to solve the gap mentioned above. Few past studies have investigated

consumer behaviour toward E-Wallets using the MTAM model. Also, it is found

that various perceptions and findings have been published globally (Rosli et al.,

2023). In accordance with Chalik et al. (2022) declaring that MPT is one of the

important variables that keep users to continue using E-Wallet. Conversely,

Halim et al. (2022) claim MPT does not influence the user's intention to continue.

Further, most of the study regarding E-Wallet using the MTAM model is adapted

from current years. Even though the theory is widely utilized, there are limited

past studies investigating the consumer's continuance intention to use E-Wallet.

Most past research concerns E-Wallet adoption (Kapooret al., 2014; Qasim &

Abu-Shanab, 2016; Teng & Khong, 2021).

Table 2.1 demonstrates the combination of past research that employed the

MTAM model in measuring the user's response/intention toward new

technology. It can notice that all the past research is studied with additional

variables in the different research areas. For example, Chan et al. (2020) added MPSR and user mobility, while Yuan et al. (2021) took Learning Content Quality and Interactivity as the additional variables.

Overall, less past research examines the users' continuance intention toward E-Wallet. Besides, fewer past studies apply the MTAM model to develop a conceptual framework for studying E-Wallet. Hence, these studies aim to erect the literature gap mentioned above by employing the MTAM model as the basic theory. A total of 4 variables will be used in this research, including the two original variables in the MTAM model: MU and MEU. Also, this research will enrich the theory by inserting two additional variables: MPSR and MPT. By referencing past and current research, this research will reveal more information about the factors influencing the continuance intention to use E-Wallet in Malaysia.

Table 2.1: The Development of Conceptual Model in Past MTAM Studies

Authors (Year)	Research Area & Variables	Main results
Chan et al. (2020)	**E-Wallet** Dependent variable (DV): Behavioural Intention to use E-Wallet Independent variable (IV): IV1: Mobile Perceived Usefulness IV2: Perceived Ease of Use IV3: Mobile Perceived Compatibility IV4: Mobile Perceived Security Risk IV5: Mobile Perceived Trust IV6: Mobile User Mobility	• IV1, IV3, IV6, can affect DV, but IV2, IV4, 1V5 cannot.
Yuan et al. (2021)	**Mobile Learning** DV: Experience Response in Mobile Learning IV1: Mobile Usefulness IV2: Mobile Ease of Use IV3: Learning Content Quality IV4: Interactivity IV5: User Interface IV6: Connectivity	• IV1, IV2 can affect DV. • IV3, IV5, IV6 has positive relationship to both IV1, IV2. • IV4 has positive relationship to IV1, but not have relationship with IV2.
Ooi et al. (2016)	**Smartphone Credit Card** DV: Behavioural Intention to Smartphone Credit Card IV1: Mobile Usefulness IV2: Mobile Ease of Use IV3: Mobile Perceived Compatibility IV4: Mobile Perceived Financial Resources IV5: Mobile Perceived Security Risk IV6: Mobile Perceived Security Trust	• IV1, IV3, IV6 can affect DV, but IV2, IV4, IV5 cannot affect. • IV3, IV4 have positive relationship to IV1. • IV3 has significant to IV2, but IV4 is not non-significant with IV2.

Lee et al. (2020)	Mobile Wallet DV: Behavioural Intention to adopt Mobile Payment IV1: Mobile Usefulness IV2: Mobile Ease of Use IV3: Perceived Critical Mass IV4: Perceived Enjoyment IV5: Mobile Self-efficacy IV6: Technology Self-efficacy	• IV1, IV2, IV4 and IV5 have positive relationship to DV. • IV4, IV5 have positive relationship to both IV1 and IV2. • IV3 has significant relationship to IV4.
Lew et al. (2020)	QR Code and Mobile Payment DV: Behavioural Intention to adopt QR code m-payment IV1: Mobile Usefulness IV2: Mobile Ease of Use IV3: Perceived Transaction Convenience IV4: Perceived Transaction Speed IV5: Optimism IV6: Personal Innovativeness	• IV1, IV5 have direct impacts to DV. • IV2 and IV6 do not have significant relationship to DV. • IV3 have positive relationship to IV1. • IV4 has positive relationship to IV2. • IV4 has significant relationship to IV2.

2.3 Past Studies Related to Mobile Perceived Security Risk and Mobile Perceived Trust

This research will examine the user's continuance intention toward E-Wallet using the MTAM model and enrich the model by inserting two additional variables. The current researcher needs to examine previous research that has studied the specific additional variables and find the relationship between them.

2.3.1 Relevant Past Mobile Perceived Security Risk Behavioural Studies

Few past studies focused on the relationship between MPSR and users' CI to use E-Wallet. According to Chan et al. (2020), MPSR influences users' intention to continue to use an E-Wallet. The users will evaluate the security or safety of technology before continuing to utilize it. In this case, the users will continue to adopt the technology due to the advancement of technologies and the safety of tools. When the E-Wallet system has been enhanced, and no undesired actions will occur, the consumer will feel safer and secure and continue adopting an E-Wallet (Yeoh, 2022).

Besides, the research on single-platform E-payment has also proved a positive relationship between MPSR and the CI to use E-payment (Chan et al., 2012; Lai et al., 2016). In other words, the user's confidence in the E-Wallet depends on a

sense of security and safety (Siagian et al., 2022). When users feel protected in their payment processing, they will promote the E-Wallet app to his/her surrounding friends and have the intention to use the E-Wallet in the future. Moreover, MPSR is an important variable preventing users from adopting innovations like a mobile wallet. When the users assume the E-Wallet is dangerous and unsafe, they will not continue to use the app as they worry about any money loss or data breaches (Chan et al., 2020).

Some studies have claimed that digital payment is more reliable than conventional payment methods like cash. Still, many users oppose this statement as they feel mobile payment is more vulnerable (Johnson et al., 2018). Then, it creates a gap between actual security and the user's perceived security, highlighting a question for the current researcher of whether MPSR impacts the user's CI to use E-Wallet.

Supported by previous past research, it provides evidence that PS directly influences technology adoption, like mobile payment (Hartono et al., 2014; Dahlberg et al., 2015; Khalilzadeh et al., 2017; Schierz et al., 2010). Also, the researcher's study in the E-Wallet area concludes that MPSR is significantly positive with the CI to use E-Wallet even after the pandemic (Tau et al., 2022). In brief, the MPSR should be added as an additional variable to examine how it affects the CI to use E-Wallet.

2.3.2 Relevant Past Mobile Perceived Trust Behavioural Studies

Several past studies have added MPT as a variable affecting users' continuance intention to use E-Wallet (Chan et al., 2020; Ooi et al., 2016). When the users feel the E-Wallet service provider is honest and reliable, it will enhance the customer's intention to longer use the service (Cham et al., 2016). As supported by Arvidsson (2014), the user's trust can influence the user's CI to adopt mobile services or payment services by E-Wallet. In this scenario, if the user believes in technologies that can improve their life quality and promises will be safe and reliable, it will positively affect the user's CI.

The past research findings revealed that since the target respondents are Gen Z, thus MPT is non-significant to CI to use E-Wallet. They lack knowledge about security issues, fraud, and information theft (Qasim & Abu-Shanab, 2016). Further, past studies have shown that the application and service provider's rules do not strongly affect perceived trust (Azizah et al., 2018). This is because some respondents do not understand the application provider regulations, policies, or procedures; thus, MPT is not an important factor in CI.

Despite that, the above statement contradicts past research in Indonesia. The MPT enhances users' CI to make online payments in Indonesia (Sasongko et al., 2022). If the service provider enhances privacy, seal, and security policies, is aware of their commitment, and gives prompt feedback, it can reduce security

concerns and increase user trust directly toward mobile payment. The researchers, Sasongko et al. (2022), also concurred that trust in reputable providers would decrease E-Wallet service vulnerabilities.

Generally, the users will expect to use E-Wallet as it is free of theft and risk. It is confirmed that there is a relationship between MPT and CI (Sharma & Sharma, 2019). In short, the current researcher needs to study how the MPT has affected the user's CI to use E-Wallet.

2.4 Hypotheses Development

In answer to the first research question of the current study, the researcher suggests two hypotheses and another two hypotheses to address the second research question.

2.4.1 The Mobile Usefulness of E-Wallet and Continuance Intention to use E-Wallet

In line with Shaw and Sergueeva (2019), who evaluated E-Wallet using the TAM Model framework, they discovered that PU significantly affects users' behavioural intention to continue using E-Wallet. MU is controlled by the perception of the usefulness and sacrifices needed to employ an E-Wallet because consumers would think about the continuity of using an E-Wallet (Hsu

& Lin, 2018). Additionally, if users desire the highest satisfaction from the service, they must involve themselves in experiencing high PU (Cho, 2016). Generally, MPU consists of an individual's desire to utilize an E-Wallet. If there is greater usefulness of E-Wallet apps, more consumers will remain to use apps (Halim et al., 2022).

The study highlighted that if users perceive they will benefit from mobile technology, they favour consumer CI. In addition, the study conducted by Chen and Li (2017) concluded that if consumers perceived the E-Wallet has bringing convenience and flexibility, the users had CI. Further, the researchers, Arrifin et al. (2021), revealed that if technology boosts productivity and time efficiency, and at the same time, the consumers find it can improve payment processing, they will keep using mobile payment. The notion agreed by Phuong (2020), who examined E-Wallets in Vietnam and found them to have high CI if E-Wallets improve comfort and make the process more efficient.

Although the E-Wallet has many advantages, it still cannot attract all the users to keep using it to conduct the transaction (Halim et al., 2022). The result is consistent with the study proposed by Liao et al. (2019). For that, the users already understood the function and usefulness of E-Wallet. Eventually, it will not be a reason to promote user CI to use E-Wallet unless new features are

introduced. This statement is consistent with Rantung et al. (2020), who explore E-Wallet in Indonesian. The findings suggest that MPU does not impact the user's intention to continue as the users don't consider E-Wallet as convenience, time-saving, and effective in a transaction.

Many past studies confirmed that MU is a significant indicator of the continuance intention to use an E-Wallet (Tay et al., 2022). The researchers, Daragmeh et al. (2021), revealed that users' decision to keep using a technology or mobile application might depend on their perspective on the value perceived and usefulness of the technology. If the users greatly utilize the E-Wallet functions, it can reduce trouble and make life easier. Lastly, the current researcher assumes that if the E-Wallet service providers can introduce new functions that increase users' interest, they will continue to use E-Wallet. In summary, a hypothesis is formed:

H1: The Mobile Usefulness of E-Wallet is positively related with continuance intention to use E-Wallet.

2.4.2 The Mobile Ease of Use of E-Wallet and Continuance Intention to use E-Wallet

The past studies' findings show that PEU directly influences continuance intention (Olivia et al., 2022). It implies that if more customers are perceived the E-Wallet function as easy to use, then the higher they will continue to use the E-Wallet. This statement is supported by Phuong et al. (2020) and, Shang & Wu (2017) and Singh et al. (2020) regarding the connection between MEU and CI. For instance, when the users feel the E-Wallet user interface is more understandable, they will continue to use it in their transactions (Abbasi et al., 2022). Besides, the users will make fewer mistakes when they find E-Wallet is easy to conduct payment transactions (Qu et al., 2018; Arrifin & Lim, 2020). It substantially will lead to a positive attitude and a continuance intention that engages with mobile payment.

Numerous scholars have examined the E-Wallet's advantage among users has coerced the usage of a digital wallet. In keeping with the Payment and Clearing Association for China (PAAC), it conveys that 95.6% of consumers will use mobile payment apps due to higher satisfaction with the system interface, ease of operation, and confronting fewer problems during transactions (Chen et al., 2019; Trivedi, 2016; Abbasi et al., 2022). Finally, the current research proposes that the MEU of the E-Wallet is positively related to the respondent's CI to use the E-Wallet. Therefore, the following assertion is formed:

**H2: The Mobile Ease of Use of E-Wallet is positively related with
continuance intention to use E-Wallet.**

2.4.3 The Mobile Perceived Security Risk of E-Wallet and
Continuance Intention to use E-Wallet

Several past studies have examined the relationship between Perceived Security
(PS) and CI using E-Wallet. The researchers Shao et al. (2019) evaluated the use
of mobile payment's CI and discovered that it is associated with a MPSR. It also
can be said that the E-Wallet security mechanism will influence the willingness
of users whether continue the service (Garrouch, 2021). Moreover, Zhang et al.
(2019), who investigated the impact of MPSR on mobile payment toward CI,
concur with the findings. The study states that the user's continuity of the E-
Wallet experience will improve if the E-Wallet system is safe to use and
information is encrypted to the highest level of security possible.

However, the researchers Aprilia and Amalia (2022) mentioned that MPSR is
irrelevant to the user's CI. This is because only having a security system is
insufficient to attract users to continue using the service. Other research studies
have also aligned with these findings, whereby PS has no relationship to the
user's intention to continue using E-Wallet (Talwar et al., 2020; Gotama &
Indarwati, 2019).

Under the government's implementation to form a cashless society, the security risk is the main barrier that discourages users from using E-Wallet (Tan, 2019). For example, users are worried about debit and credit card fraud, missing transactions, and face websites when using E-Wallet (Alam et al., 2021). Gen Z is highly reliant on new technology like E-Wallet, so the current researcher must develop security and risk as the increasing information violation issues in the nation may impact users' continuance intention to use E-Wallet (Mohamed & Ahmad, 2012). As a result, the following hypothesis is established.

H3: The Mobile Perceived Security Risk of E-Wallet is positively related with continuance intention to use E-Wallet.

2.4.4 The Mobile Perceived Trust of E-Wallet and Continuance Intention to use E-Wallet

Previous studies have found that PT significantly predicts technology adoption (Killian & Kabanda, 2017). In other words, trust influences E-Wallet continuance intention (Kumar et al., 2018; Zhou, 2013). Following Halim et al. (2022), MPT is an important variable that raises users' continued use and satisfaction of users to conduct E-Wallet activities. Since the E-Wallet offers a personalized service, the users will continue to focus on the confidentiality and protection of the information on the mobile device. In keeping with Han and

Windsor (2011), Hajli (2014) concludes that customers will intend to buy the products if they trust on merchant's reputation. Some researchers opined that consumer trust in E-Wallet could be raised if the system is reliable and can reduce the possibility of fraud (Kinis & Tanova, 2022). Therefore, a positive impact on user trust will bring a CI using E-Wallet (Zhou, 2011; Kumar, 2018; Chawla & Joshi, 2019). People who trust the E-Wallet payment will use it in daily transactions.

Notwithstanding, Halim et al. (2022) argued that the continuance use of E-Wallet was not significant to the trust variable. In past studies, the respondents involved in the research were young consumers. They are unaware of the fraud, data risk, and privacy concerns; hence, they will not be concerned about the E-Wallet system's trustworthiness and continued intention to use mobile payment. Although some IT-savvy comprehends that E-Wallet transactions may be risky, they still believe in the applications (Qasim & Abu-Shanab, 2016). But they will also worry about their bank information and personal details. The researcher Singh and Shivastava (2018) found no evidence that trust predicts the likelihood of adopting technology or devices. This discrepancy might result from consumers in Gen Z, who are technologically astute.

Although several studies have established a weak connection between trust and continued usage intentions, but the researchers oppose the statement (Pratama & Renny, 2022). If users are trusting technological issues can be settled and that

the service provider's laws and regulations can prevent difficulties when using E-Wallet, then their confidence and happiness will increase, and they will continue to use E-Wallet for longer (Pratama & Renny, 2022). As a result, it can be concluded that MPT and CI to use an electronic wallet are significantly correlated (Novita & Budiarti, 2022; Viviana & Mulyono., 2022; Lin et al., 2020; Tay et al., 2022). Thus, the current author makes the following predictions:

H4: **The mobile perceived trust toward E-Wallet positively related with continuance intention to use E-Wallet.**

In brief, table 2.2 shows the relationship between the current study's research objectives and the respective hypotheses.

**Table 2.2: The Relationship between Current Study's Research Objectives
and Relevant Hypothesis**

Research Objective	Related Hypothesis
RO1: To examine the influence of E-Wallet's mobile usefulness, E-Wallet 's mobile ease of use on Generation Z's continuance intention to use E-wallet as payment instrument in Malaysia?	H_1: The mobile usefulness of E-Wallet has a positive influence on continuance intention to use E-Wallet. H_2: The mobile ease of use of E-Wallet has a positive influence on continuance intention to use E-Wallet.
RO2: To examine the influence of E-Wallet's mobile perceived security risk, E-Wallet's mobile perceived trust E on Generation Z's continuance intention to use E-wallet as payment instrument in Malaysia?	H_3: The mobile perceived security risk of E-Wallet has a positive influence on continuance intention to use E-Wallet. H_4: The mobile perceived trust toward E-Wallet has a positive influence on continuance intention to use E-Wallet

2.5 Proposed Conceptual Framework

Based on the MTAM framework and references from past studies, the
conceptual framework is proposed below (See Figure 2.3).
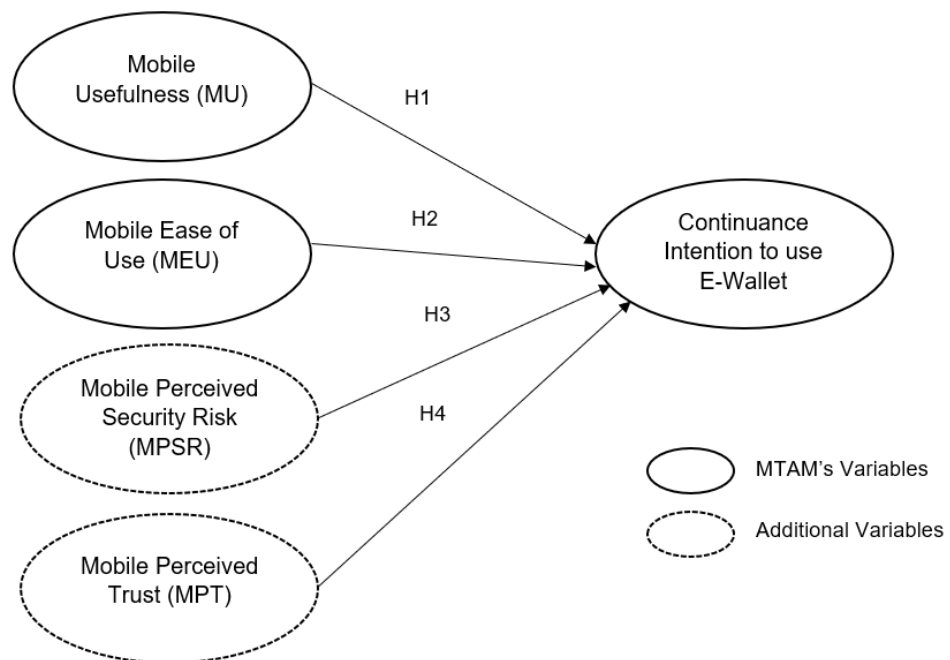
Figure 2.3: Proposed Conceptual Framework

Source: Developed for current study

The research framework is based on the MTAM model. It shows the relationship
between four IVs and a DV. DV is continuance intention to use E-Wallet, while
4 IVs are MU, MEU, MPSR, and MPT, which will be discussed in this project.

2.6   Summary of Literature Review

Most previous researchers have adopted the TAM model for the research framework's theory. Regardless, supported by past researchers, TAM has numerous limitations that prevent it from producing precise outcomes. Hence, the MTAM model was adopted. Still, few past researchers use the MTAM model to explore the user's continuance intention to use an E-Wallet. Generally speaking, this current research will modify the MTAM model by adding two additional variables, MPSR and MPT, to better understand users' continuance intention to use E-Wallet from a different perspective. Besides, the research framework and hypothesis were defined and validated by the theory model examined, past studies, and journal articles.

The following chapter will cover the research methodology and data analysis tool.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter explains the approach used by this project. Firstly, the discussion of the research methodology from different aspects. It includes research design, sampling design, sample size, development of the questionnaire, data collection method, and data analysis tool. The pilot test and pre-test of the study have been implemented to verify the item statements in the questionnaire are high validity and reliable.

3.1 Research Design

Research design is the structural framework of the research approach that combines the elements logically and coherently to address the research issues (McCombes & Bhandari, 2022). This research utilizes a quantitative approach to collect and interpret the numerical data (Bhandari, 2020). Also, it is used to create predictions, uncover patterns and averages, validate relationships, and gain greater insight and understanding among wider populations (Bhandari, 2020). This research used a quantitative approach to collect the primary data. The survey questionnaire in the Google Form was distributed to the intended respondents via social media platforms like Facebook, Instagram, and WhatsApp.

Many past behavioural studies used a quantitative approach to collect the data. The research is deductive logic, which aims and testing the theory (Streefkerk, 2019). Also, it explains the relationship between concepts and variables. For example, the deductive approach is when researchers develop a hypothesis based on existing theory and then collect data using research methodology to support the hypothesis. All the data will be collected from a large sample size to get objectivity and accuracy for the research outcome (Streefkerk, 2019). Using the MTAM model, a few past researchers used the quantitative approach (See Table 3.1).

Table 3.1: The Source of Data for Past Studies that used MTAM

Authors' name (year)	The source of data	Reasons of using the sources of data
Ooi & Tan (2016)	Quantitative	To study the relationship between each of the following variables: mobile usefulness, mobile ease of use, mobile perceived compatibility, mobile perceived financial resources, mobile perceived security risk and mobile perceived security trust.
Chan et al. (2020)	Quantitative	To study the relationship between each of the following variables: mobile perceived usefulness, perceived ease of use, mobile perceived compatibility, mobile perceived security risk, mobile perceived trust and mobile user mobility.
Lew et al. (2020)	Quantitative	To study the relationship between each of the following variables: mobile usefulness, mobile ease of use, mobile self-efficacy, technology self-efficacy, perceived critical mass and perceived enjoyment in the hospitality industry.
Yan et al. (2021)	Quantitative	To study the relationship between each of the following variables: mobile usefulness, mobile ease of use, perceived transaction convenience, perceived transaction speed, optimism, personal innovativeness in retail industry.

Source: Developed for research

3.2 Sampling Design

3.2.1 Target Population

According to Casteel and Bridier (2021), the target population is conceptually bounded as a potential group that the researchers perceive can capture the characteristics of the interest population and generate the outcome. Gen Z is the target respondent as they occupy the largest age group population in Malaysia (29%) (Tjiptono et al., 2020). Compared to other generations, Gen Z or Zoomers is relatively more tech-savvy. Hence, understanding Gen Z's continuance intention toward E-Wallet is essential in planning cashless marketing strategies.

The target respondents of this research are Gen Z in Malaysia, born between 1997 to 2012 and aged 11-26 years old (Tjiptono et al., 2020). Also, the respondents chosen must have used E-Wallet in the past six months and then be eligible to participate in this research to get the precise result.

3.2.2 Sample Size

Sample size refers to the number of samples or respondents in any statistical. The sample size should be large enough to represent the population better and offer a more precise outcome (Andrade, 2020). In line with Minsel (2023), a sample size of 200 to 300 respondents is advised since it provides a reasonable margin of error and is below the limit of decreasing returns.

Due to the non-availability of population count published data, this research will

set the sample size based on Morgan's Table of Sample Sizes (1970). Therefore,

the sample size of this research will be set to 384 respondents since the total

population of Gen Z is about 29% of the total population of 32.9 million, which

is 9.5 million in Malaysia (Department of Statistics Malaysia, 2022).

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—N is population size. S is sample size.

Figure 3.1: Morgan's Table for Sample Size

Source: Krejcie & Morgan, 1970

3.3 Development of Questionnaire

The current researcher has designed the questionnaire survey to collect the

primary data from target respondents. The questionnaire is designed in English.

There are three sections in the questionnaire.

Firstly, Section A is the screening questions. This questionnaire has set 2 qualifying questions at the beginning of the questionnaire to ensure that all the participants achieve the criteria. Firstly, the age range option has been provided to ensure all the participants are Gen Z, aged between 11 and 26. They cannot continue the questionnaire if they are not in this age range. Secondly, the questions include whether the participant is an E-Wallet user. If the individuals are not using it before, they stop filling in the form, and the system will show thank you for participation page.

Section B is the respondent's demographic data (gender, age, race, average personal monthly gross income, preferred E-Wallet payment method, and frequency of using E-Wallet weekly). It consists of 6 questions.

Section C relates to the respondent's response to the measured variables to determine their continuance intention in using E-Wallet as a payment instrument in Malaysia. In Section C, it was associated with one DV (CI), while the total of 4 IV questions for each dimension: were MU, MEU, MPSR, and MPT, a total consisting of 25 questions.

Section C applies the Likert scale method to collect respondents' preferences toward the measured items statement. The questionnaire uses the 5 points Likert

range, in which respondents may indicate their positive to negative strength of agreement level toward a question statement (Mcleod, 2023). For instance, the range will start from 1 to 5, where 1 indicates 'Strongly Disagree', and 5 represents 'Strongly Agree.' For each item statement in Section B, the respondents were only required to tick one scale option. Therefore, respondents may answer the data more effectively while the researcher can reach into the true emotions of the respondents by using the Likert scale.

The questionnaire item statements were drafted according to past studies. Table 3.2 demonstrates how the current researcher modified the statement so that the items still measure the same concept and, in the context, are related to E-Wallet. After completing the draft, the item statements need to be vetted using two procedures: pre-test and pilot study.

Table 3.2: Modified Item Statements Based on Related Past Studies Variables

Variables	Code	Measuring Items	Sources of Adoption
Continuance Intention to use E-Wallet	CI1	I intend to continue using E-Wallet instead of discontinuing its use.	Abbasi et al. (2022).
	CI2	I will consider continue to use E-Wallet in the future.	Alraimi et al. (2015).
	CI3	I will keep using E-Wallet as it offers me many advantages.	Aji et al. (2020).
	CI4	My intentions are to continue using the E-Wallet than use any alternative payment methods.	Halim et al. (2021).
	CI5	I will always try to use E-Wallet to conduct financial transaction.	
Mobile Usefulness	MU1	I can choose different E-Wallet methods when making payments, bringing transaction flexibility to me.	Abbasi et al. (2022).
	MU2	Making payments by using E-Wallet is more convenient.	

	MU3	Using E-Wallet can increase my effectiveness in the transaction process.	Trivedi (2016).
	MU4	E-wallet as a payment tool is less time consuming.	Venkatesh & Davis (2000).
	MU5	E-Wallet can help me to manage expenses.	Devi et al. (2021).
Mobile Ease of Use	MEU1	I find E-Wallet easy to use when making the actual payment.	Sarmah et al. (2021).
	MEU2	I rarely feel confused when using an E-Wallet.	Trivedi (2016).
	MEU3	I rarely make mistakes when using an E-Wallet.	
	MEU4	I find that the E-wallet user interface is understandable.	Abbasi et al. (2022).
	MEU5	I like payment done via E-Wallet as it does not require much mental effort.	
Mobile Perceived Security Risk	MPSR1	I feel a low chance of getting fraud when performing online transaction through an E-Wallet.	Abbasi et al. (2022).

	MPSR2	I immediately receive notifications where there is an error in an E-Wallet transactions.	Lan et al. (2021).
	MPSR3	I am comfortable with having my bank card integrated into E-Wallet.	Luarn & Lin (2005).
	MPSR4	The service in E-Wallet is safer than traditional payment options e.g. (credit card, cash).	Chawla & Joshi (2019).
	MPSR5	E-Wallet ensures protection against financial loss.	Vetrivel & Razack (2020).
Mobile Perceived Trust	MPT1	I believe E-Wallet service provider is trustworthy.	Halim et al. (2021).
	MPT2	I believe E-Wallet as the app have featured promised by the providers.	Pat et al. (2020).
	MPT3	I believe the E-Wallet providers will assist me in case of any issues.	Chawla & Joshi (2019).
	MPT4	I trust the E-Wallet service providers are competent in handling any transaction.	Halim et al. (2021).
	MPT5	I trust that E-wallet providers. prioritize users' interests.	Kumar et al. (2018).

3.3.1 Pre-test

Before the current researcher sets up the questionnaire, it is essential to ensure the question statement is valid and easy to comprehend for respondents. Hence, the researcher conducted the pre-test, which engaged with an academic expert, like an academic supervisor, to review the first-drafted questionnaire. The academic supervisor must certify that the item statements in the research can accurately describe the variables, relate to the study context, and are not identical to other item statements from the main study respondents. Also, the questionnaire created must have past researchers evaluating those statements.

The academic supervisor has suggested that the current author modify some sentences as some are irrelevant to the variables (See Table 3.3).

**Table 3.3: Suggestions on Adopted Variable Item's Statements as Suggested
by the Expert**

	Statements	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
Continuance Intention to use E-Wallet (DV)						
CI1	I intend to continue using E-Wallet instead of discontinuing use.					
CI2	I will strongly recommend to the people who are important to me to adopt E-Wallet. This sentence refers to an intention to use, not continuance intention. I will consider continue to use E-Wallet in the future.					
CI3	I will keep using E-Wallet as it offers me many advantages.					
CI4	I will use E-Wallet in the future. This sentence can be lengthened. What purpose for using E-Wallet? Suggestion: I will always try to use E-Wallet to conduct financial transaction.					
CI5	I plan to use E-Wallet when the opportunity arises. Can find a more related sentence to replace it, like intention to use an electronic payment method compared to the traditional approach. Suggestion: My intentions are to continue using the E-Wallet than use any alternative payment methods.					
Mobile Usefulness (IV1)						
MU1	I can choose different E-Wallet methods when making payments, bringing transaction flexibility to me.					
MU2	Making payments by using E-Wallet is more convenient.					
MU3	Using E-Wallet can increase my effectiveness in the transaction process.					
MU4	E-Wallet as a payment tool is less time consuming.					
MU5	E-Wallet can improve the quality of transactions performed. How to improve the quality, from which aspect? Can provide a more detailed sentence. Suggestion: E-Wallet can help me to manage expenses.					

Continue next page

	Statements	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
Mobile Ease of Use (IV2)						
MEU1	I find E-Wallet easy to use when making the actual payment.					
MEU2	I rarely feel confused when using an E-Wallet.					
MEU3	I rarely make mistake when using an E-Wallet.					
MEU4	I find that the E-Wallet user interface is understandable.					
MEU5	Interaction with E-Wallet doesn't require much mental effort. Make the sentence more complete. Suggestion: I like payment done via E-Wallet which do not require much mental effort.					
Mobile Perceived Security Risk (IV3)						
MPSR1	I feel a low chance of getting fraud when performing online transaction through an E-Wallet.					
MPSR2	The security system constructs in E-Wallet are more reliable. I suggest that can mention how users perceive security risk in their transactions. Link with the users and make them feel more connected. Suggestion: I immediately receive notifications where there is an error in an E-Wallet transactions.					
MPSR3	I feel confident in the E-wallet security when I pay in the store. Suggestion: I am comfortable with having my bank card integrated into E-Wallet.					
MPSR4	I trust the ability of E-Wallet to protect my privacy. This sentence refers to perceived trust. Not related to the security risk. Suggestion: The service in E-Wallet is safer than traditional payment options e.g. (credit card, cash).					
MPSR5	I believe that E-Wallet will keep all users' data and will not be exposed without permission. This sentence refers to perceived trust, irrelevant to specific variables. Suggestion: E-Wallet ensures protection against financial loss.					
Mobile Perceived Trust (IV4)						

MPT1	E-Wallet ensures protection against financial loss. This item is referring to which variables? Suggest replacing the sentence that can reflect with trust variables. E.g.: I believe the E-Wallet service provider is trustworthy.						
MPT2	I ~~continue to use~~ E-Wallet as the app have feature promised by the providers. Change the words 'continue to use' to 'believe' to better reflect the variables. Suggestion: I believe E-Wallet as the app have feature promised by the providers.						
MPT3	I can rely on E-Wallet to do the transaction. Discuss the service provider in providing the service. E.g.: I believe the E-Wallet providers will assist me in case of any issues.						
MPT4	E-Wallet keeps my financial information secure. This sentence refers to security, not trust. Suggest changing the statement. Suggestion: I trust the E-Wallet service providers is competent in handling my transaction.						
MPT5	I trust that E-wallet providers prioritize users' interests.						

3.3.2 Pilot test

After the review and examination by the academic supervisor, the first draft questionnaire was created. However, it is insufficient to prove that the questionnaire has been set up perfectly and can be distributed to the target respondents. The current author has considered the respondent's perspective and conducted the pilot test. A pilot study is a small scale of feasibility that helps plan and modify the main study, then improves the context and efficiency of the research (Simkus, 2023).

Before collecting large-scale data, the current researcher conducted a pilot study by distributing a modified question to a small group of 30 respondents. In line with Hagaman and Wutich (2017), sample sizes of 20-40 respondents are required to get data saturation for this project. Also, our trial sampling of small group respondents is about 10% of the sample size; therefore, several 30 respondents are targeted. The current researcher has employed a computer-assisted survey. A questionnaire was created in Google Forms and sent to the 30 respondents via social media platforms like Facebook, Instagram, and WhatsApp. All of them answered the questions based on their own experience.

After they complete fulfill the survey, they can click the submit button. The current researcher has calculated the duration for the respondents to finish the questionnaire to be about 10 minutes. Another is 30 survey questionnaires submitted, which meet the initial sample size of 30. Nevertheless, the current author discovered that one of the questionnaires was invalid. This is because the respondent is unwilling to reveal his/her data. In order to validate that the questionnaire collected is aligned with the sample size, the current author sends the questionnaire to additional respondents. In short, there was a total of 31 survey hand-up, but an overall 30 survey questionnaire was valid.

Further, based on the respondent's feedback, they said the item statement is easy to understand and has no issues like wording and jargon shown in the questionnaire. Lastly, the researcher collected the 30 Google Form survey to compute each variable's reliability coefficient or Cronbach alpha score. All the data was input into the SPSS data analysis software to verify data reliability.

Table 3.4 shows that Cronbach alpha score to test the respective variable's reliability. Table 3.4 displays that all the Cronbach alpha scores were between 0.80 and 0.95. On this account, it can conclude that the measurement variables are good/high reliability. The reliability coefficient score for each variable is higher than the threshold value of 0.6 (for a smaller sample size). Then, it implies the respondents have examined the variable consistently and agree. Finally, the drafted questionnaire is used in the main study. A copy of the complete questionnaire survey is attached in Appendix E. Afterward, the questionnaire was forwarded to the 384 respondents through online tools.

Table 3.4 : The Reliability Test Result for Pre-test's Data

Variables	Number of Items	Cronbach Alpha score
Mobile Usefulness	5	0.855
Mobile Ease of Use	5	0.916
Mobile Perceived Security Risk	5	0.907
Mobile Perceived Trust	5	0.941
Continuance Intention	5	0.949

3.4 Data Collection Method

3.4.1 Distribution of Main Study's Questionnaire

The finalized questionnaire was distributed to the respondents as a softcopy
called e survey. By doing this, not only involves low cost and convenience but
can also target respondents in a wide area instead of being limited to one state.
The current researcher created the questionnaire using Google Forms as they can
interpret and get the instant survey results with charts and graphs. It does not
require any other software. The respondents involved in the questionnaire are
Gen Z, people born between 1997 and 2012. The age is in the ranges of 11 and
26 in 2023.

After the current researcher designed the completed questionnaire, they sent its
Google Form survey to their respondents through social media platforms like
WhatsApp, Instagram, and Facebook. Those social media platforms can engage
with Gen Z more easily as they are connected to this platform daily. Hence, it
allows the researcher to collect the data and analyze their response toward the
measured variable. For example, the researcher posted the Google link on their
Instagram story or sent the link to WhatsApp/Facebook group, then asked her
surrounding friends/families to fulfill.

Besides, only eligible individuals are allowed fulfilling the survey. After the e-
questionnaire was fulfilled, the respondents can click submit on the end page.
Meanwhile, the researcher received the response in the Google Form feedback.
The estimated duration for data collection was taken around two weeks.

3.4.2 Sampling Method

The finalized questions are proposed to be disseminated using purposive
sampling as it is cost and time effective. It means a collection of non-probability
sampling techniques in which individuals are chosen as they meet the criteria
necessary for the research being studied (Nikolopoulou, 2022). In other words,
respondents are chosen 'on purpose' in purposive sampling.

Purposive sampling, or judgmental sampling, is where the researcher depends
on his/her judgment and selects a smaller sample size from the study population
(Nikolopoulou, 2022). Purposive sampling is influential in determining the
individuals that provide the data that help the current researcher to achieve the
objectives.

The current researcher starts the purposive process by identifying the surrounding friends, families, and other social networks. Since Gen Z is techno-savvy, thus E-questionnaire is formed. They are two filtering questions created in the questionnaire to select the qualified respondents and validate the result accuracy. The respondents were asked to complete the questionnaire if they fulfilled the criteria. Once the respondents have completed the questionnaire, the researcher will continue to seek other respondents. The current researcher will distribute the questionnaire in Google Forms into social media groups like WhatsApp, Facebook, Instagram, and other digital channels. All the surveyors were invited to complete and return the questionnaire online.

However, not everyone can complete the questionnaire unless they are Gen Z, aged 11-26 years old, and have used E-Wallet before. If the individuals do not achieve the criteria, they cannot proceed to the next sections. Besides, the current researcher will target mostly university students as they identify as the Gen Z group, and most are using E-Wallet for the transaction. The processes were continued until the questionnaire's collected response had attained this study's targeted sample size, 384.

3.5 Data Analysis Tool

The data collected in this research was interpreted by adopting SPSS Statistic.
Therefore, the current researcher can develop descriptive and inferential analysis
and extract useful information from its data.

3.5.1 Descriptive Analysis

The descriptive analysis has been conducted to describe and simplify the raw
research data (William, 2021). This research uses descriptive analysis to analyze
respondents' demographic information, like age, gender, and race. It will allow
the researchers to gain insight into the data set. There are two measurements in
descriptive statistics involving central tendency and variability.

3.5.2 Inferential Analysis

Inferential Analysis is applied to measure the reliability of the conclusion about
the population based on data collected from a population sample (Calvello,
2020). Cronbach's Alpha Coefficient rules were adopted to confirm the collected
data's validity and reliability and define the research result (Everitt & Skrondal,
2010).

Table 3.5 shows the range of Cronbach's alpha scores and their corresponding reliability indication. It shows that each variable's minimum Cronbach's alpha score is 0.7 (for a larger sample size), which is considered acceptable reliability (Gaikar & Marakarkandy, 2015). Therefore, Cronbach's alpha with a higher value means that the respondents have answered more consistently to all items used to measure specific variables. To sum up, the data is more reliable if the alpha score is higher than the threshold value of 0.7 for a larger sample size.

Table 3.5: Rule of Thumb Measures for Cronbach's Alpha

Cronbach's alpha	Internal consistency
Alpha ≥ 0.9	Excellent reliability
0.8≤ Alpha<0.9	Good reliability
0.7≤Alpha <0.8	Acceptable reliability
0.6≤Alpha <0.7	Questionable reliability
0.5≤Alpha <0.6	Poor reliability
Alpha<0.5	Unacceptable reliability

Source: Gaikar & Marakarkandy, 2015

Apart from checking the variable's reliability, the current researcher must adopt the Q-Q plot to assess the similarity of the distributions between the two datasets (Zach, 2021). It is crucial to confirm all the data are normally distributed. Further, the normally distributed only means for the calculated expected values don't have a bigger difference compared with the observed value provided by the respondents in the same variable.

Then, Pearson Correlation Coefficient Analysis is applied to identify the correlation between each pair of IV and DV (Kenton, 2021). It also can aid in determining the direction of a variable's relationship. But there is a requirement that the variables should be connected before the effect that brings by the IVs on the DV. The research uses the correlation coefficient to determine the MU, MEU, MPSR, and MPT relationship. The correlation coefficient (r) is the component used to identify a connection's strength (Stephanie, 2021). The positive correlation coefficient value means a strong positive relationship between DV and IV variables, and vice versa for the negative value of the correlation coefficient.

Table 3.6 shows the correlation coefficient range and the corresponding association strength between the variables.

Table 3.6: Correlation coefficient range and Interpretation

Size of Correlation	Interpretation
.90 to 1.00 (−.90 to −1.00)	Very high positive (negative) correlation
.70 to .90 (−.70 to −.90)	High positive (negative) correlation
.50 to .70 (−.50 to −.70)	Moderate positive (negative) correlation
.30 to .50 (−.30 to −.50)	Low positive (negative) correlation
.00 to .30 (.00 to −.30)	negligible correlation

Source: Stephanie, 2021

The linear multiple regression analysis was conducted to study the relationship between the DV and each IV (Bevans, 2020). The analysis is essential as it will show which IV is significant or not significantly related to the DV. Also, it will demonstrate the estimated accumulation effect caused by all significant variables. However, preventing multicollinearity is important as it undermines an IV's statistical significance (Taylor, 2022). It occurs when an IV is highly correlated with one or more other IVs in a multiple regression equation.

The variable inflation index (VIF) coefficient was used to test the correlation level between IVs and the strength of the correlation (Frost, 2023). If the VIF coefficient is less than the threshold value of 10, the IVs are not strongly correlated (Wu, 2020). Inversely, if the VIF coefficient is more than the threshold value of 10, it is considered to have a high correlation with other IVs.

Then, the multicollinearity problem exists. The current researcher should remove the highly correlated IVs or combine both IVs to become a new IV variable. In short, the researcher should confirm that the IVs are not strongly correlated.

In the regression analysis, the t-test is a statistical hypothesis testing tool used to examine whether there is a significant difference in the linearity of IVs and DV (Kumar, 2023). In another way, it implies which IV has significantly influenced

the change of DV. If the t-test result for the respective relationships between the IV and DV is at a significant level of 0.05, then it was used to confirm the present hypotheses between the two variables (Keim, 2020). Conversely, the relationship is considered 'insignificant' if the significant value is over 0.05.

The equation of multiple linear regressions is as below:

$$CI = a + \beta_1(MU) + \beta_2(MEU) + \beta_3(MPSR) + \beta_4(MPT)$$

Where,

CI = Continuance Intention to use E-Wallet

MU = Mobile Usefulness

MEU= Mobile Ease of Use

MPSR = Mobile Perceived Security Risk

MPT = Mobile Perceived Trust

3.6 Ethical Considerations

Before distributing the questionnaire to the target respondents, the current researcher has filled in the ethical clearance and must give UTAR's ethical committee to review all research information, including the questionnaire. The committee needs to know how the respondents will collect the data and how the data will be disposed of after completing the project.

After the department had checked and approved, the current researcher prepared the personal data protection statement (PDPS) on the initial page of the questionnaire. The respondents must acknowledge and agree to the PDPS statement before answering the questionnaire. The PDPS assures the respondent that all personal information will be kept private and is only used for academic purposes. Besides, the respondent's personal information and response will remain anonymous from collecting the data until analyzing the process.

The respondents were approached using the rule of informed consent. After receiving consent from the respondents willing to participate in this research, the questionnaire was sent to the respondents. The current researcher had to ensure all the respondents were voluntary and carry out the process in private and secure conditions. Lastly, the current researcher has written personal contact details in the PDPS statement for further assistance.

3.7 Summary of Present Research Methodology

Firstly, this research used the quantitative approach to collect and interpret the numerical data. The current researcher has performed descriptive and inferential analysis and extracted the result to assure data validity and reliability. On top of that, the current researcher designed the questionnaire and then conducted the pre-test, which gives academic experts a chance to check. Meanwhile, the pilot test occurred with a smaller sample of respondents to evaluate the question

construct. The feedback and outcomes from the pilot test and pre-test were used to construct the final questionnaire for the main study.

After collecting the main study's data, the current researcher assessed the reliability, normality, correlation, and linearity between variables before verifying the hypotheses. In summary, the current researcher must interpret the detailed research methodology to guarantee that the data obtained is reliable and valid. Finally, those data can generate a more precise output that assists the researcher in studying the respondents' behaviour toward E-Wallet.

CHAPTER 4

RESULT AND DISCUSSION

This chapter will focus on questionnaire results and findings. The current researcher used the Statistical Package for Social Sciences (SSPS) to interpret the findings collected from the 384 samples questionnaire. Also, the descriptive and inferential statistical results are explored and discussed in the following sub-topics.

4.1 Descriptive Result

4.1.1 Survey Response

The current researcher has set the minimum number of questionnaires collected as 384. After sending the questionnaire to the social networks, and platforms, a total of 403 responses were received. Upon examining the response's validity, it was determined that certain responses were invalid for various reasons. For instance, some respondents are not Malaysian or have not previously used E-Wallet, are not in the specific age range, or are not permitted to disclose their information.

Therefore, only 384 answered questionnaires were valid and accumulated using purposive sampling. All the questionnaires collected are completed to fill in the information as all the respondents have answered the demographic questions. Also, they provided feedback based on their experience using the E-Wallet when answering the questionnaire that measured each variable item. In summary, 19 questionnaire responses were voided, and SPSS used to interpret 384 valid responses.

4.1.2 Respondent Personal Profile

There are two sections in the questionnaire. Section A is related to the respondent's personal profile. There are six questions, including gender, age, race, average personal monthly gross income, most frequently used E-Wallet payment method and frequency of using E-Wallet.

Table 4.1 shows that male respondents occupied 156 (40.6%), while female respondents represented 228 (59.4%). Most respondents are female, as females are more likely to devote themselves to the questionnaire.

Also, the table demonstrates that the age group between 11-16 years old is 26 respondents (6.8%), the least aged group. Then, the respondents aged between 17-22 contain the most significant percentage (48.2%), with 185 respondents.

For this age range, the respondents are highly tech-savvy, seeking jobs and having an income after secondary graduation. Hence, the respondents are highly engaged in using E-Wallet and more engaged in the questionnaire. Lastly, it is followed by 173 respondents (45.1 %) who are 23 years old and above participated in this questionnaire. Most of these respondents are working, and thus they apply the E-Wallet when making payments, boosting effectiveness and efficiency when rushing for work.

Furthermore, most respondents are Chinese, with 270 accounting for 70.3%. This is because the questionnaire is distributed more to the current researcher's friends, family members, relatives, or social networks. Next is followed by Malay with 61 respondents (15.9%) and Indian with 53 (13.8%), respectively. The current researcher has uploaded the questionnaire to the "Malaysia University Survey Group"; hence, it attracted Malay and Indian respondents to participate in this questionnaire.

Besides, 249 respondents (64.8%) earn an average personal monthly income of less than RM2,000. It can be assumed that they are students and don't have a job or stable income. Next, 68(17.7%) and 46 (12%) respondents earned income from RM 2,001-RM 4,000 and RM 4,001-RM 6,000, respectively. Also, about 16 respondents (4.2%) get a personal income of RM6,001 – RM8,000. Lastly, only 5 respondents (1.3%) earned more than RM 8,001 for their job.

Additionally, the table displays that Touch 'n Go is the most favourable app, which was voted by 264 respondents (68.8%) among other apps. They perceived that Touch n' Go was more convenient as the users commuted using tolled highways like Touch n' Go or RFID. Then, 45 respondents (11.7%) prefer to choose Grab Pay when making the transaction. At the same time, 34 respondents (8.9 %) go for Shopee Pay, which the users believe is easier to use and more secure, providing a face ID and fingerprint scan feature before payment. Only 23 respondents (6.0%) use Boost and 11 (2.9%) use WeChat Pay. Lastly, only 5 (1.3%) pay with Aeon Wallet, while 2 respondents (0.5%) pick MAE and BigPay.

Lastly, it shows that 103 respondents (26.8%) have had over 15 times for using E-Wallet weekly for making transactions. Thus, it can be concluded that the users rely heavily on using E-Wallet instead of cash daily, as E-Wallet is more convenient and effective for transactions. Next, 100 (26%) voted to only use E-Wallet 6-10 times. It is followed by 90 respondents (23.4%) who have used E-Wallet below 5 times weekly. In the end, 91 respondents (23.7%) utilize E-Wallet 11-15 times weekly.

Table 4.1: Distribution of Personal Profile Data

	Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Gender				
• Male	156	40.6	40.6	40.6
• Female	228	59.4	59.4	100.0
Total	384	100.0	100.0	
Age				
• 11-16 years old	26	6.8	6.8	6.8
• 17-22 years old	185	48.2	48.2	54.9
• 23 years old and above	173	45.1	45.1	100.0
Total	384	100.0	100.0	
Race				
• Malay	61	15.9	15.9	15.9
• Chinese	270	70.3	70.3	86.2
• Indian	53	13.8	13.8	100.0
Total	384	100.0	100.0	
Average Personal Monthly Gross Income				
• Less than RM 2,000	249	64.8	64.8	64.8
• RM 2,001 – RM 4,000	68	17.7	17.7	82.5
• RM 4,001 – RM 6,000	46	12.0	12.0	94.5
• RM 6,001 – RM 8,000	16	4.2	4.2	98.7
• Above RM8,000	5	1.3	1.3	100.0
Total	384	100.0	100.0	

Most Frequent Used E-Wallet
Payment Method

• Boost	23	6.0	6.0	6.0
• Touch n'Go	264	68.8	68.8	74.8
• Grab Pay	45	11.7	11.7	86.5
• Wechat Pay	11	2.9	2,9	89.4
• Shopee Pay	34	8.9	8.9	98.3
• Aeon Wallet	5	1.3	1.3	99.6
• Others	2	0.5	0.5	100.0
Total	384	100.0	100.0	

Frequency of Using E-Wallet
Weekly

• 1-5 times	90	23.4	23.4	23.4
• 6-10 times	100	26.0	26.0	49.4
• 11-15 times	91	23.7	23.7	73.1
• Over 15 times	103	26.8	26.8	100.0
Total	384	100.0	100.0	

4.2 Inferential Result

There are several statistical analyses conducted before validating the current research's hypotheses. The current researcher must ensure all the data adapted from the questionnaire are reliable and valid. The data is collected from 384 respondents, considered a large sample size.

4.2.1 Reliability Result

The reliability test uses Cronbach Alpha's Score to confirm the collected data's reliability. If the Cronbach Alpha's score of each variable is higher than the threshold value of 0.7, then the data can consider as high reliability (Taber, 2018).

Table 4.2 demonstrates that each variable's Cronbach Alpha score exceeded the threshold value of 0.7. Hence, it indicates that all the respondents have answered consistently toward the items measuring the same variable. It shows that the gathered data is high reliability.

Table 4.2: Reliability Test's Results

Variables	Number of Items	Cronbach Alpha score
Mobile Usefulness	5	0.831
Mobile Ease of Use	5	0.879
Mobile Perceived Security Risk	5	0.871
Mobile Perceived Trust	5	0.882
Continuance Intention	5	0.880

4.2.2 Normality of Data Distribution

Q-Q plots were created to ensure that all the variable's data is normally distributed (Zach, 2021). By referring with figure 1, it displays the Q-Q plots for the DV and IV. It can be observed that the outlier's line does not exactly follow the plotted line. This may be due to the respondents disagreeing with certain measured variables. Thus, the current researcher concludes that the variable's observed data shows some variance from their expected data.

Notwithstanding, the current researcher claims that the data is linearly distributed since there is only a small difference between expected and observed values. Also, it appears to be normally distributed because the plots don't illustrate the remarkable trend like a parabola (U-shape) or inverted parabola (Internal U-Shape). Lastly, all the variables' data trend is upward, so it can be summed up that all the IVs and the DV are linear correlations.

IV1: Mobile Usefulness	IV2: Mobile Ease of Use
IV3: Mobile Perceived Security Risk	**IV4: Mobile Perceived Trust**
DV: Continuance Intention	
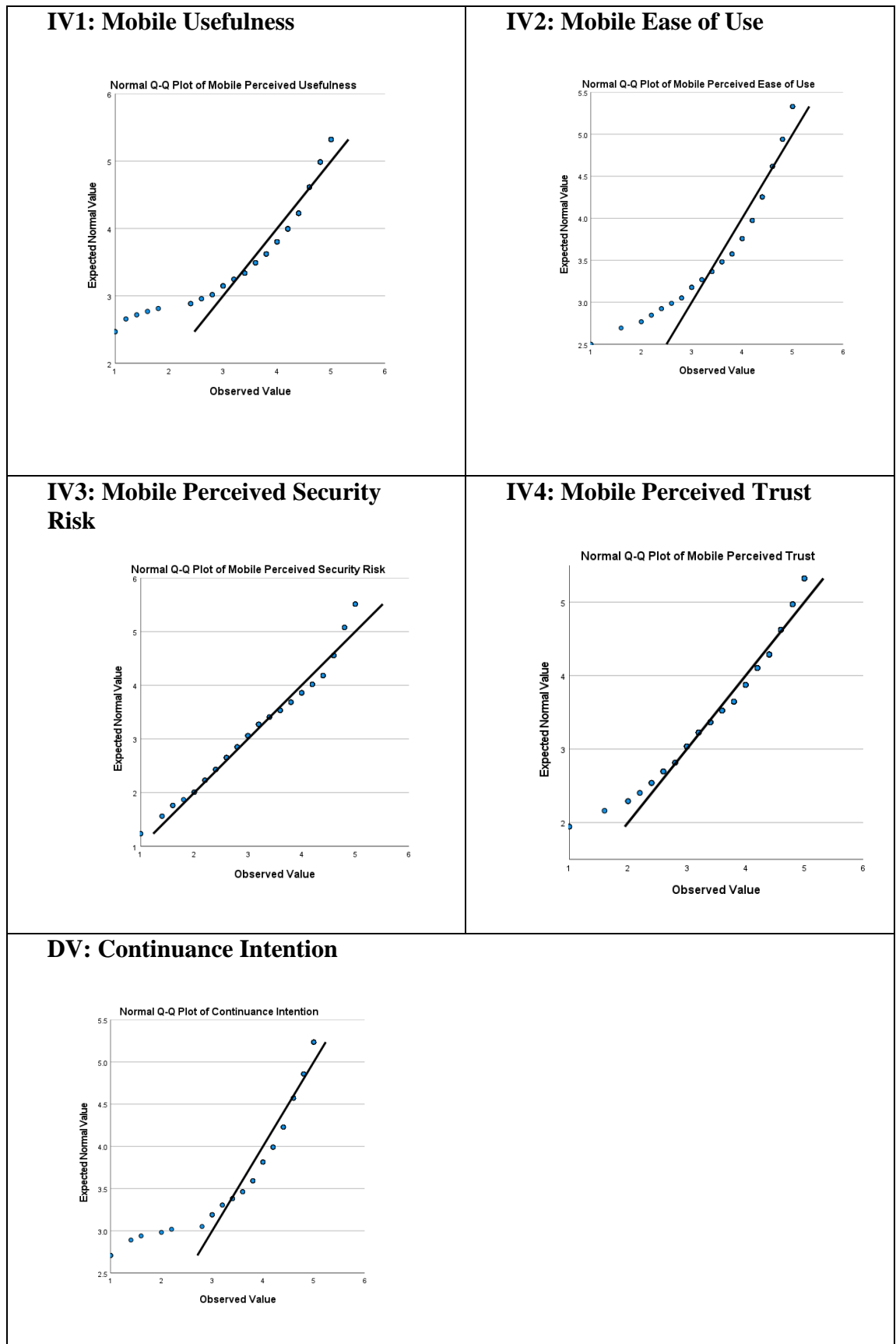
Figure 4.1: The Normally Data Distribution of Each Variable

4.2.3 Correlation Result

The Pearson correlation coefficient is carried out to examine the strength of the relationship between each IV and DV, for instance, whether the relationship between variables is positive or negative (Kenton, 2021). The correlation coefficient value between each IV and DV must be above 0.6. The positive correlation relationship means that when the value of one variable increases/decreases, then the value of another variable will also increase or decrease, or vice versa.

Table 4.3 indicates the E-Wallet's MU and MEU are more than 0.6. It implies a strong positive associated with the CI to use E-Wallet (DV). Conversely, the MPSR and MPT toward E-Wallet are less than 0.6, which is weakly associated with DV. Then, the causal relationship will be carried out by applying the regression analysis. Before examining the causal relationship, the IV and DV must have a correlation relationship.

Further, MU and MEU are more than 0.6 at a p-value below 0.05 ($p < 0.01$). This indicates that MU and MEU have a significant and strong association with CI. The significance value of MPT is less than 0.6 at a p-value below 0.05 (P=0.007), which means that MPT and CI have a significant association. Lastly, MPSR is less than 0.6 at a p-value below 0.05 (p=0.313), implying that MPSR has a non-significant and weak association with CI.

Table 4.3 Correlation Result

Correlations

		Mobile Usefulness	Mobile Ease of Use	Mobile Perceived Security Risk	Mobile Perceived Trust	Continuance Intention
Mobile Usefulness	Pearson Correlation	1	.642**	.322**	.406**	.689**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001
	N	384	384	384	384	384
Mobile Ease of Use	Pearson Correlation	.642**	1	.425**	.479**	.658**
	Sig. (2-tailed)	<.001		<.001	<.001	<.001
	N	384	384	384	384	384
Mobile Perceived Security Risk	Pearson Correlation	.322**	.425**	1	.561**	.333**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001
	N	384	384	384	384	384
Mobile Perceived Trust	Pearson Correlation	.406**	.479**	.561**	1	.440**
	Sig. (2-tailed)	<.001	<.001	<.001		<.001
	N	384	384	384	384	384
Continuance Intention	Pearson Correlation	.689**	.658**	.333**	.440**	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	
	N	384	384	384	384	384
**. Correlation is significant at the 0.01 level (2-tailed).						

4.2.4 Multicollinearity and Multiple Linear Regression Results

Multiple linear regression is adopted to examine the relationship between two or more independent variables (IVs) with the dependent variable (DV) (Bevans, 2020). When IV is closely correlated with the other IVs, it is important to avoid multicollinearity issues from happening. It will lead to producing a regression model result that is less reliable. Hence, the current researcher has applied a "stepwise method" that only involves those significant IVs has a relationship with the DV in the regression model. Those IVs that do not have a significant relationship with the DV will be omitted. In order to increase data reliability, a few rounds of analysis were conducted until no crucial IV was found.

Table 4.4 shows that only mobile perceived security risk is omitted from the

regression model. This is because it has a non-significant impact on the DV's

variation.

Table 4.4: Excluded Variables from Current Regression Model

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Tolerance	VIF	Minimum Tolerance
							Collinearity Statistics	
1	Mobile Ease of Use	.367[b]	8.215	<.001	.388	.587	*1.703*	.587
	Mobile Perceived Security Risk	.124[b]	3.208	.001	.162	.896	*1.116*	.896
	Mobile Perceived Trust	.192[b]	4.868	<.001	.242	.835	*1.197*	.835
2	Mobile Perceived Security Risk	.038[c]	1.009	.313	.052	.815	*1.227*	.534
	Mobile Perceived Trust	.106[c]	2.723	.007	.138	.754	*1.326*	.530
3	Mobile Perceived Security Risk	-.009[d]	-.217	.828	-.011	.654	*1.530*	.514

a. Dependent Variable: Continuance Intention
b. Predictors in the Model: (Constant), Mobile Usefulness

c. Predictors in the Model: (Constant), Mobile Usefulness, Mobile Ease of Use
d. Predictors in the Model: (Constant), Mobile Usefulness, Mobile Ease of Use, Mobile Perceived
Trust

Based on Table 4.5 shows that the regression results on whether there are any

IVs are the essential factor that influences the continuance intention of Gen Z to

use E-Wallet. There are 56.2% of the variance of the DV has been justified by

the several IVs: MU, MEU, and MPT toward E-Wallet. The left balance of the

DV's variation (43.8%) is accounted for by other variables not investigated in

this study.

Table 4.5: Regression's Model Summary Result

Model Summary^d

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.689^a	.474	.473	.46569
2	.744^b	.553	.551	.42979
3	.750^c	.562	.558	.42622

a. Predictors: (Constant), Mobile Usefulness
b. Predictors: (Constant), Mobile Usefulness, Mobile Ease of Use
c. Predictors: (Constant), Mobile Usefulness, Mobile Ease of Use, Mobile Perceived Trust
d. Dependent Variable: Continuance Intention

4.2.5 ANOVA Regression Result

Table 4.6 (ANOVA Table) shows a minimum of one of the significant IVs (E-Wallet's MU, MEU, MPT) might associate with the DV (CI to use E-Wallet) at the significant level of 0.001. The P value represents how probable the results are due to the chance. Since these 3 IVs have significant levels, P<0.001, then implies that the chances are only 1 in a thousand.

Table 4.6: ANOVA of Regression Result

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	74.681	1	74.681	344.357	<.001[b]
	Residual	82.844	382	.217		
	Total	157.525	383			
2	Regression	87.146	2	43.573	235.883	<.001[c]
	Residual	70.379	381	.185		
	Total	157.525	383			
3	Regression	88.492	3	29.497	162.372	<.001[d]
	Residual	69.033	380	.182		
	Total	157.525	383			

a. Dependent Variable: Continuance Intention
b. Predictors: (Constant), Mobile Usefulness
c. Predictors: (Constant), Mobile Usefulness, Mobile Ease of Use
d. Predictors: (Constant), Mobile Usefulness, Mobile Ease of Use, Mobile Perceived Trust

4.2.6 Regression Coefficient Result

In a multiple regression analysis, multicollinearity exists when an IV is closely associated with another IV (Daoud, 2017). In confirming that multicollinearity is avoided, the variable inflation index (VIF) coefficient was applied to measure each variable. The results are displayed in Table 4.7. If the VIF score exceeds the minimum value of 10, the tested IVs have highly correlated with other variables in the model. Therefore, the tested IV is not a reliable correlation of model predictors, or vice versa. Conversely, a value between 5-10 signifies a moderate variable.

Table 4.7 displays that all the VIF results for the significant IVs are below the threshold value of 10. Hence, it seems logical that all the statistically significant IVs are not highly correlated. In short, no multicollinearity issues occurred.

Further, the regression t-test was then carried out to determine which IV could explain the change in DV. According to Table 4.7, MU has the highest regression coefficient score, then mobile ease of use and mobile perceived trust.

Table 4.7: Regression Coefficient Result for Each Significant Variable

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistic	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.536	.153		10.051	<.001		
	Mobile Usefulness	.664	.036	.689	18.557	<.001	1.000	1.000
2	(Constant)	1.029	.154		6.680	<.001		
	Mobile Usefulness	.437	.043	.453	10.133	<.001	.587	1.703
	Mobile Ease of Use	.347	.042	.367	8.215	<.001	.587	1.703
3	(Constant)	.911	.159		5.744	<.001		
	Mobile Usefulness	.420	.043	.435	9.710	<.001	.575	1.740
	Mobile Ease of Use	.310	.044	.328	7.023	<.001	.530	1.886
	Mobile Perceived Trust	.090	.033	.106	2.723	.007	.754	1.326

a. Dependent Variable: Continuance Intention

Lastly, a normal P-P plot confirms a linear relationship between all relevant IVs
and DV. Below figure 4.2 illustrates a linear relationship between all the
significant IVs and the DV.
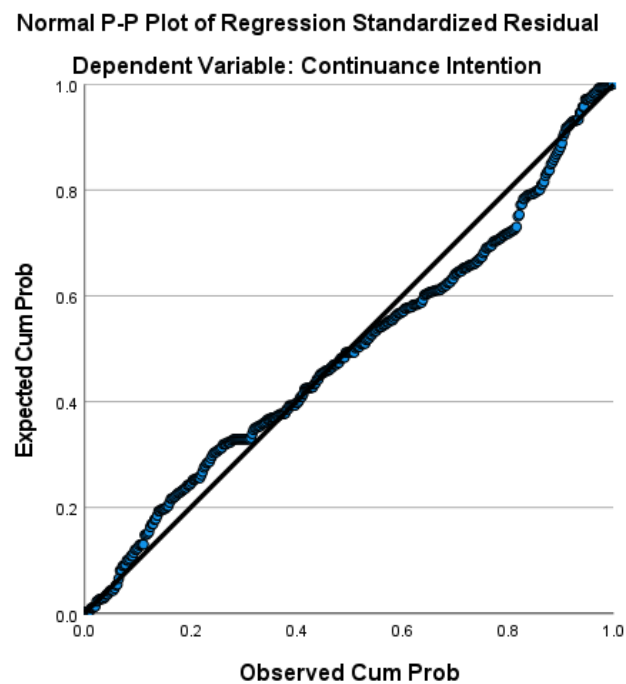
**Figure 4.2: The Normal P-P Plot of Regression Standardised
Residual**

The Table 4.6 displays the t-statistics result. Attached below the multiple
regression equation for this research is shows at below:

CI = 0.911 + 0.420 MU + 0.310 MEU+ 0.090 MPT

Where,

CI = Continuance Intention to use E-Wallet

MU = Mobile Usefulness

MEU= Mobile Ease of Use

MPT = Mobile Perceived Trust

4.3 Current Developed Research Model

To summarise the findings above, the final research conceptual model for this
research is demonstrated in Figure 4.3.
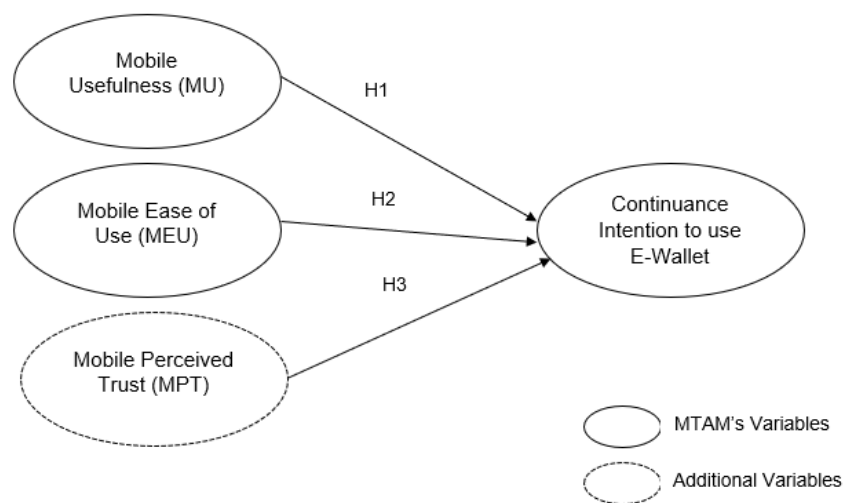
Figure 4.3: Current Developed Research Model

4.4　Conclusion of the Statistical Result

In short, all the results obtained are high reliability and normally distributed, with a linear relationship between IV and DV and no multicollinearity issues throughout the study. The summary of the confirmation of the current hypothesis is shown in Table 4.8. It concluded that only three hypotheses were supported, while one was not supported. The data is collected from the questionnaire that participated by 384 respondents.

Table 4.8：　Summary of the Confirmation of Current Hypotheses

	Details of Hypotheses	Remarks
H1	The mobile usefulness of E-Wallet is positively related with continuance intention to use E-Wallet.	Supported
H2	The mobile ease of use of E-Wallet is positively related with continuance intention to use E-Wallet.	Supported
H3	The mobile perceived security risk of E-Wallet is positively related with continuance intention to use E-Wallet.	Not supported
H4	The mobile perceived trust rust toward E-Wallet is positively related with continuance intention to use E-Wallet.	Supported

CHAPTER 5

CONCLUSION AND IMPLICATIONS

5.1   Accomplishment of Research Objectives

This research studies the CI to use E-Wallet as a payment instrument among Gen
Z in Malaysia. After studying E-Wallets' background in Malaysia, the current
researcher has developed two specific research objectives. The first objective is
to examine the relationship between MU (H1) and MEU (H2) toward Gen Z's
continuance intention to use the E-Wallet. The results findings revealed that the
H1 and H2 are supported.

In this situation, the support of H1 suggests that E-Wallet usage will increase if
Gen Z finds that E-Wallet is useful in flexibility, convenience, effectiveness,
time-saving, and improved expense management. It conforms with past studies
that found the MPU positively correlated to the user's CI to use E-Wallet (Olivia
& Marchyta, 2022; Sujana et al., 2022). The user's behaviour will be influenced
by PU, an external motivation that arouses the continuance usage of an E-Wallet
(Kumar et al., 2018). Besides, Foroughi et al. (2019) revealed that MPU is an
important factor influencing an individual's mindset to continue using E-Wallet

services. This statement is agreed upon by Hsu and Lin (2018), whereby MPU will be considered when users make decisions about continuity. According to Halim et al. (2022), the higher the PU of the E-Wallet app, the greater number of users will keep using E-Wallet.

Regarding H2, the respondents acknowledged that if E-Wallets are easy to use and have a clear user interface, they will continue to utilize them in future transactions. This outcome is reinforced by prior research indicating that younger generations are more receptive to E-Wallets than older generations, who find them simple (Pertiwi et al., 2020). When users are satisfied with the E-Wallet system interface, ease of operation, and confronting fewer difficulties during payment, it will enhance their satisfaction level toward E-Wallet applications, lastly positive impact on their CI to use E-Wallet (Halim et al., 2022). This statement is agreed by Arrifin et al. (2021), whereby when users found E-Wallet can enhance transaction effectiveness and processing, they bring a positive attitude and higher CI to use E-Wallet.

The second objective is to examine the relationship between MPSR (H3) and MPT (H4) toward Gen Z's CI to use E-Wallet as a payment instrument in Malaysia. From the outcome interpreted, it finalized that H3 is not supported while H4 is supported.

The non-support of H3 reflects that the respondents are not mutually consent that the E-Wallet MPSR will impact their CI to use E-Wallet. This is because some respondents believe this is not the main factor that lures them to continue using E-Wallet. For example, if E-Wallet has a secure privacy system but does not benefit users like cashback, rapid system, and a complex user interface. Eventually, the users will quit using E-Wallet as they cannot enjoy any sake and increase their satisfaction and happiness. Generally, when users keep using the app, they will focus on the customer loyalty program that gives exclusive products or services to them. For example, once the users download the app, they only claim the incentives provided by the government, like RM150 E-Wallet. They don't worry about the internal security system when there is no data and financial loss. In brief, the respondents don't consider the SR of E-Wallet will affect their CI to use E-Wallet.

The result is consistent with a past study by Aprilia and Amalia (2022), which highlighted no relationship between MPSR and CI using E-Wallet. The aforementioned statement supports that only having a security system is inadequate to make users continue using E-Wallet. Nevertheless, the authors argue that PS will directly influence user satisfaction and attitude, then impact CI (Abdul-Halim et al., 2021; Daragmeh et al., 2021). Thus, it can be explained that PS has no direct effect on the user's CI. In summary, H3 is not supported.

Lastly, the support of H4 implies that the respondents agree on the importance of MPT that influences their CI to use E-Wallet. When the respondents perceived trust that E-Wallet service providers are trustworthy, prioritize user interest, are competent in handling customer service, and realize the promise, these increase the user's intention to continue to use E-Wallet. Also, H4 is further confirmed by the case studies carried out by Pat et al. (2020); Novita and Budiarti (2022); Viviana and Mulyono., (2022); Lin et al. (2020) that users will be more eager to continue using E-Wallet if the company privacy policies are trustworthy. Besides, when the users believe that the E-Wallet service provider's regulations will protect them from facing any transaction difficulties, it may increase their trust level and intention to use it longer (Pratama & Renny, 2022). In brief, the perceived trust is positively associated with the user's continuance intention to use E-Wallet.

5.2 Implications

5.2.1 Implications for Managerial Decision Maker

The findings will benefit the E-Wallet service providers by implementing the approach to optimize the existing E-Wallet system and usage. The current researcher has proposed several strategies to aid the relevant parties for reference to improve the system.

Since the result is shown that MPU (H1) is supported, the users are more likely
to keep using mobile payment if they believe E-Wallets are useful. Thus, the
managerial decision-maker must consider the user's requirements and needs in
developing the E-Wallet system. The managerial decision-maker should develop
infrastructure to guarantee Internet accessibility in rural and urban areas. In this
scenario, the E-Wallet service provider can collaborate with telecommunications
providers to advocate seamless and fast transactions.Therefore, users can utilize
the E-Wallet for a transaction without worrying about network issues, and it can
be used everywhere and anytime. This strategy can offer users rapid transactions
and time-saving that avoid waiting for system loading. Eventually, it can
promote users' desire to continue to use E-Wallet.

Besides, the government can foster the merchant acceptance network expansion**.**
The government should incentivize merchants and food vendors to accept E-
Wallet payments with lower transaction fees, promotional campaigns, and
training opportunities. This can expand the E-Wallet acceptance among
merchants and boost the user's convenience by paying via E-Wallet for offline
or online sellers. Furthermore, the managerial decision maker should
adopt continual improvement and innovation whereby introducing new E-Wallet
features like combining government services (electricity bills, public
transportation fees). It can make the users feel that the E-Wallet is practical and

can pay anything only with the E-Wallet app. Finally, it triggers the user's
mindset to keep using the E-Wallet.

In accordance with the MEU (H2) support, the E-Wallet service provider can
hold an education and awareness campaign to convey the functionalities of E-
Wallet to Malaysians. For instance, the service provider can upload instructions,
tutorials, or workshops that assist users in gaining a deeper understanding of E-
Wallet. The users can follow the instructions for making payments and
transferring money, which makes the app easier to use, increasing continuance
intention to use E-Wallet. Additionally, the E-Wallet designer should
emphasize crafting an intuitive and user-friendly interface for the E-Wallet
application. For example, the designer should execute user research and
comprehend the user's preferences. Then, the interface should constantly be
optimized and improve the app structure, navigation, and function to enhance
the existing user's experience and pleasure. In order to enhance E-Wallet's MEU
for users, E-Wallet providers can simplify the registration and verification
process. For example, the developers can launch the Know Your Customers
(KYC) strategy to reduce the need for documentation and facilitate the
registration procedure. Since of the ease of the process, people will eventually
come around to E-Wallet and continue using it for the foreseeable future.

Contrarily, our research's findings showed that MPSR (H3) is not a significant factor influencing users' continuance intention to use E-Wallet. However, previous studies have indicated that MPSR considerably influences the user's CI to use E-Wallet (Tau et al., 2022; Siagian et al., 2022). Therefore, the managers could highlight the security risk to fostering the user's intention to continue using E-Wallet. Past studies have mentioned that users are concerned about fraud, data breaches, and information loss when using E-Wallet. When users pay with an E-Wallet, they are just required to enter a six-digit password. Passwords are not secure as they can be transferred, predicted, or stolen. Firstly, the practitioner should create strong authentication that involves users applying two-factor authentication (2FA) or biometric authentication when utilizing the E-Wallet app. Therefore, users can make payments using their fingerprints, facial characteristics, hand shape, or voice behaviour to reduce crime issues. These provide users with a high level of high security and assurance, as the payment will only be made if the person matches the registered identity.

Moreover, practitioners could focus on security by employing a robust encryption technique to safeguard sensitive data, including user identity and transaction data. Encryption can avoid unauthorized access and protect private data remains secure and safe. Collaborating with security partners also positively impacts reducing fraud risk and attracting users to keep using E-Wallet. The

service provider can work with reputable cybersecurity firms specializing in E-Wallet security to conduct regular security audits and penetration testing. As a result, it can determine the vulnerabilities and guarantee that the platform's security is reliable and secure for financial transactions. Overall, the managerial decision-maker should focus on security risks and execute the strategies above to combat scammers and boost users' confidence and desire to keep using E-Wallet.

The support of H4 suggests that Gen Z is focused on the trustworthiness of E-Wallet's service providers. Therefore, the service provider should deliver strong customer service to tackle the user's problems. For example, each user should be furnished with prompt assistance, making them feel confident in the app's dependability and trusting their interest is prioritized. Further, the E-Wallet service provider can acquire social proof through reviews from existing users to boost confidence in the application. In this scenario, the service provider can gather positive feedback from satisfied users and publish it online to attract potential customers and turn them into loyal E-Wallet customers. Finally, the service provider must follow through once a promise has been made to the users. They can focus on the issues users are most worried about and continuously innovate by launching new features that pique users' interest. This can demonstrate a dedication to innovation that instil trust, elevates user experience, and encourages continued usage of E-Wallet.

5.2.2 Implications for Academics

Malaysian is experiencing a payment mode change from a cash method to a cashless transaction for goods and services (Gomes, 2022). The contactless payment approach has been reinforced in response to the pandemic emergency, as the public is aware of Malaysia's social distancing (Lim et al., 2023). Undeniably, the E-Wallet has become more pervasive with the assistance of technology, and its development was escalated due to the pandemic. Even with this, using E-Wallet remarkably has been diminished due to several factors. Past studies have shown no agreement about what factors affect individuals to continue using E-Wallet.

This research is investigating Malaysian Gen Z's CI to use E-Wallet. Much earlier research applied the Technology Acceptance Model (TAM) or Modified Unified Theory of Acceptance and Use of Technology (UTAUT2) to clarify the continuance intention to utilize E-Wallet (Olivia & Marchyta, 2022; Santosa et al., 2021). Anyhow, it was found that both theories have some limitations inherent in technology. The UTAUT2 employs the self-reported scale to examine the user's intention, which exists an inability to validate the reflection of actual behaviour (Venkatesh et al., 2012). Consequently, it will jeopardize the research result's accuracy and validity. Also, the TAM is like UTAUT2, which is confronted with the threat of common approach variance (Sharma et al., 2009).

Therefore, the Mobile Technology Acceptance Model (MTAM) was endorsed to reflect the user's continuance intention to use a certain technology. It is supported by a few prior studies that also embrace the MTAM model to study users' intention or continuance to use E-Wallet (Chan et al., 2020). Even though the MTAM model has been greatly utilized to study other past research, there are insufficient past studies that use the MTAM model that investigate the E-Wallet. Hence, this research is going more resistant to the MTAM model by filling the literature gap and providing the reference to academics.

Compared to other research, this research has offered useful implications to academics. Primarily, past studies examine the relationship between the MTAM model, consisting of MU and MEU. This research has assisted academics with the theoretical comprehension that aids them in understanding the IVs effect on DV. To enrich the model, this researcher added two additional variables: MPSR and MPT. This is because the current researcher found that both additional IVs are related to DV, as reinforced by past studies.

Lastly, this research is developing a proposed new theoretical framework with four IVs and a DV to discuss detail related to the user's continuance intention toward E-Wallet. By doing this, the academics can gain insight into the factors the user's concerned about most and study the relationship between them. Further,

this study has executed a questionnaire that specifically spotted Gen Z in Malaysia since Gen Z is the largest population in the country. The findings show that the E-Wallet's usefulness (MU), ease of use (MEU), and trust (MPT) are crucial to enhance the user's continuance intention to use E-Wallet. Overall, this research will prove that the MTAM model is appropriate and reliable for determining the user's behaviour toward new technology. It is distinctive from other prior studies as it can give insight to future academics about the factors that have not been discovered.

5.3   Limitations of Study

Due to the Covid-19 pandemic outburst, people were obliged to implement safety precautions like wearing masks and social distancing. Individuals prefer staying at home to lessen the chance of the pandemic spreading. Even after the government announced that Standard Operation Procedures (SOP) are no longer mandatory, individuals still adhere to those regulations, and the practice has become a new norm. Thence, the current researcher uses the E-survey to gather the respondent's information to gauge their behaviour toward E-Wallet usage. In this scenario, the present researcher creates a Google Form questionnaire, which will be sent to the intended respondents via social media platforms like Facebook and Instagram.

Notwithstanding, it could greatly increase the likelihood of survey fraud for responders. If the respondents are confronted with complicated or confusing questions and are too passive to seek clarification from the researcher, they may act mindlessly to complete the survey. They are just perfunctory to submit the form without being engaged with the questions. Besides, the respondents may also complete a few responses and then submit them to achieve the target respondents. Unfortunately, it led to the incorrect consensus view toward the measured variables. Meanwhile, since the current author cannot monitor the respondents' behaviour and expression, thus they presume every question that respondents understand. Finally, the data obtained is unreliable and does not reflect exactly the consumer's behaviour on their continued intention to utilize an E-Wallet.

Another drawback of this research is the questionnaire's language obstacle. Since English is the country's second language, hence the author expects that all the respondents have comprehended English. Hence, the questionnaire is entirely in English. After that, the current author misjudged the condition, undermining data reliability. This research focuses on Gen Z of various ethnicities like Chinese, Malay, and Indian. Consequently, it is not guaranteed that all respondents speak English and recognize the questions. For example, some respondents probably are illiterate as they don't have access to higher education, and eventually, they might not know English. It creates a situation whereby when

respondents are asked to complete the questionnaire; they simply answer without understanding the questionnaire. As a result, the current researcher will perceive that the data is precise and then compute the results that project respondents' continuance intention. In truth, the data is inaccurate as it developed based on respondents' opinions and feelings.

Besides, the data collection methodology in this project, which utilizes the purposive sampling technique, is another flaw. In this way, the current researcher uses his/her judgment or, subject to researcher bias, to distribute the survey to participants who the researcher believes are qualified. Under this approach, the researcher is based on subjective assumptions when selecting the respondents involved in the questionnaire. Occasionally, the researcher's incorrect presumption may result in a biased sample and a wrong conclusion.

Further, the study toward respondents was also one of the study constraints. Since this study focuses on Gen Z, the current researcher cannot assume the findings signify Malaysian perceptions. For that, the users may have different attitudes, opinions, or agreements toward E-Wallet continuance intention. In addition, policymakers and academics should not compare the behaviour of Gen Z to that of other generations. This is because Gen Z was born during the technological era, whereas other generations were not. As an outcome, it is

possible that the other generation may have a gap with Gen Z and then does not have a stronger desire to keep using the E-Wallet. Accordingly, the policymaker might implement various E-Wallet usage-increasing strategies based on the behavioural intentions of various generations. Inversely, they shouldn't emphasize a certain generation to determine that all generations have identical responses toward the E-Wallet. It might cause the method to become ineffective, as they don't know the actual demand from various generations.

Moreover, there is an unbalanced distribution of respondents throughout the survey. The majority of respondents is discovered to be female, with only a small percentage (%) being male. This skewed distribution across age and gender may have impacted the validity and generalizability of the study's findings. Last but not least, insufficient prior studies examined the E-Wallet continuance intention by applying the MTAM model. Most studies use the TAM or UTAUT 2 model to explore users' intentions toward E-Wallet. Hence, it is more challenging for the present researcher to propose a new conceptual framework by agreeing on the findings of previous investigations.

5.4 Recommendation for Future Research

Appointed to the survey fraud issues, future research is suggested to interview the respondents through video conferencing or learning platforms. It includes platforms like Zoom, Microsoft Team, and Google Meet. Hence, the researcher can have an accurate screening by monitoring the respondents' behaviour, opinion, and response. For instance, the researcher can instantly acknowledge the respondents' inaccurate or irrelevant answers. To ensure that no response is "based on the assumption," the interviewer will immediately provide clarification if the respondents do not comprehend the questions. This allows the interviewer to validate that all the questionnaire's items are clear and have no jargon or double meaning for the respondents. Finally, the data collected for the questionnaire is more accurate and reliable since the process is carried out under supervision. Next, the researcher should obtain detailed information if the respondents are ready for a physical meeting (SOP must be followed). This is considering the researcher can observe the respondents' information to prevent false information during screening questions like gender, age, or occupation.

Furthermore, the future researcher should create a bilingual survey that reaches a wider audience and avoids problems with the language barrier. For instance, the researcher can give options to the respondents toward their preferred language (e.g., English or Malay) before looking into the questionnaire. This

way, the respondents can answer the questions in the language their most familiar with, enhancing the data accuracy. Moreover, the future researchers can also insert visual aids like pictures, videos, and diagrams in the questionnaire. It is crucial as it will make the respondents feel engaged and assist them in reading the scaled multiple-choice options more efficiently. Also, illiterate people can figure out the meaning of the questions by observing the associated images, which adds clarity and boost response rates.

On the other hand, future researcher is encouraged to use the quota sampling method when choosing the sample. Quota sampling is a non-random sampling technique in which the individuals are chosen based on predefined criteria (Simkus, 2022). It is adopted to ensure that the sample's characteristics distribution can be representative of the broader population. Suppose future research is to study a similar topic to this research. In that case, they can seek the respondents based on characteristic settings like Gen Z and has used E-Wallet before. This approach involves low cost, convenience, and time-saving for the researchers. Lastly, the researcher can design a survey screening question to ensure every participant is qualified and eligible to provide the data.

Appointed to the respondents' issues, the future researcher should use simple random sampling to ensure each sampling unit of the population has an equal chance to be chosen (Taherdoost, 2016). The researcher should determine the number of individuals in each generation and then calculate the total number of

respondents from three generations. Then, the researcher must get an equal percentage of different generations in Malaysia in line with their number. Simple random sampling can present a precise statistic, allowing the relevant parties to distinguish between three generations' intentions toward E-Wallet.

For the unbalanced distribution of gender issues, the future researcher should carry out the data weighting. The researcher should verify and correct the bias by weighting the data to represent the population ratio. Typically, the ratio of males and females is 50:50. Finally, more future research is advocated to investigate users' continuance intention toward E-Wallet usage as there is a trend of cashless payment globally nowadays. The research should utilize the MTAM framework that examines the initial and additional variables to intensify the literature's knowledge. Finally, future research propounds to increase awareness of studying the additional variables through a preliminary study. Therefore, it can provide the idea to the researcher to flourish more comprehensive research on user's continuance intention toward E-Wallet. Also, the researcher can include other variables in future studies, like perceived COVID-19 risk and social influence to broaden the MTAM model with different concepts to study the topic.

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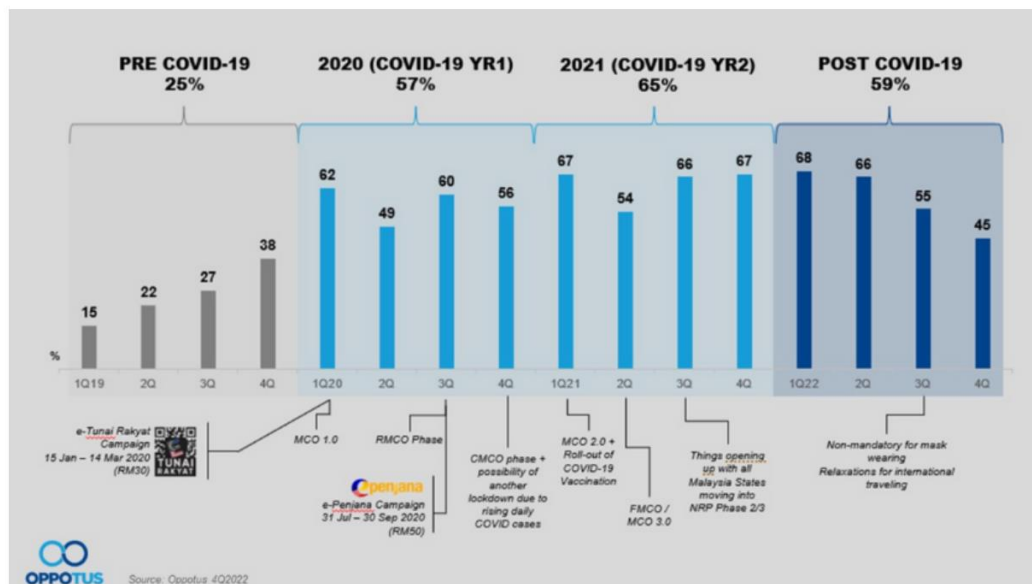
APPENDICES

Appendix A: E-Wallet usage in Malaysia by generations
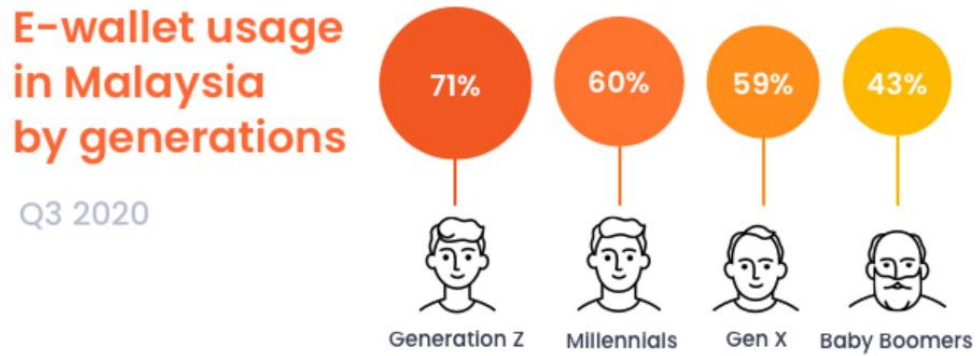
Appendix B: Percentage of people who made payments through digital wallets in Malaysia

Appendix C: Share of people who made payments through digital wallets in
Malaysia from 1st quarter 2019 to 4th quarter 2022
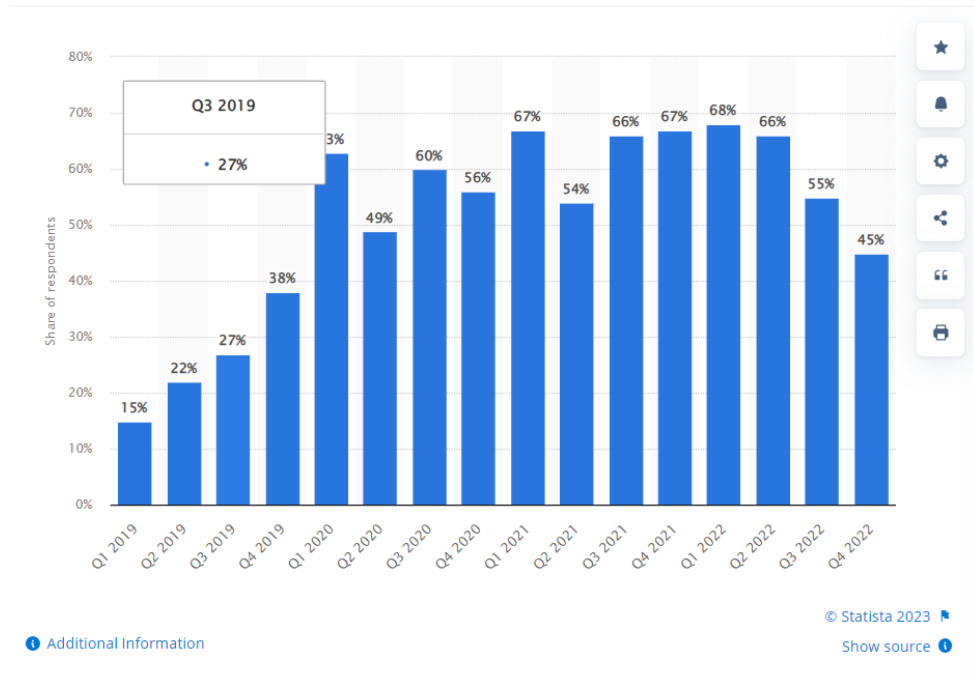
Appendix D: Payment mode in physical transaction
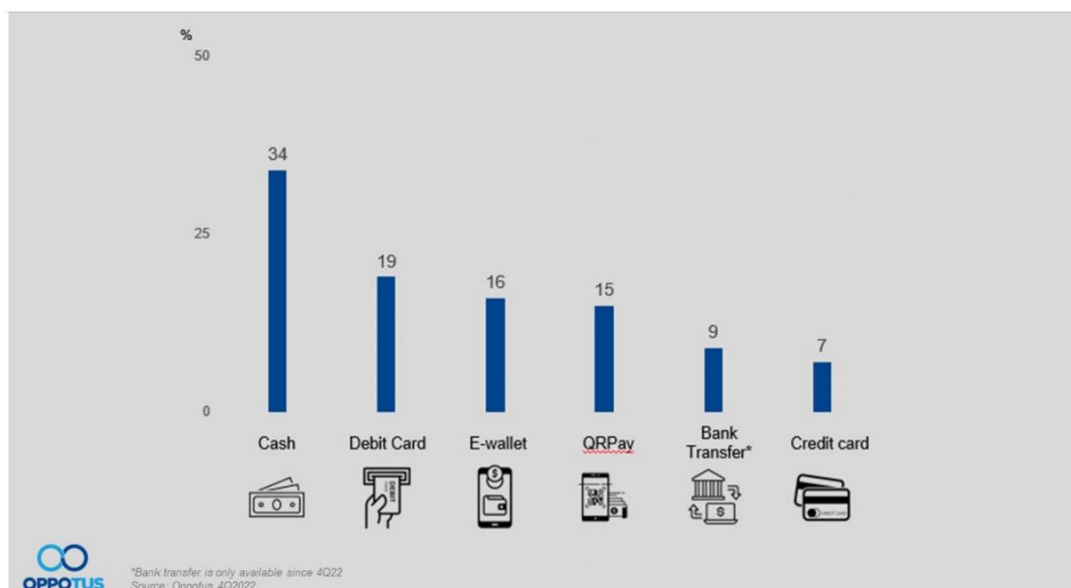
Appendix E: Survey Questionnaire

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE

MASTER OF BUSINESS RESEARCH

(CORPORATE MANAGEMENT)

MBA RESEARCH

**Academic Research Survey in studying Continuance Intention to use
E-Wallet as a payment instrument among Generation Z in Malaysia. A
behavioural study.**

Dear Respondents,

I am a postgraduate student studying Master of Business Administration (CM) from Universiti Tunku Abdul Rahman (UTAR), Kampar Campus. Currently, I am conducting a study titled "Continuance Intention to use E-wallet as a payment instrument among Generation Z in Malaysia". The primary objective of us for executing this questionnaire is to deeply comprehend the factors influence Generation Z's continuance intention toward E-Wallet by using Mobile Technology Acceptance Model (MTAM).

Please take a few minutes to complete the questionnaire. There will be no risk involved in your participation in this questionnaire. Kindly note that your identity and data are kept strictly private and just used for academic purposes. Your participation in this questionnaire is considered voluntary and highly appreciated. The completion of this research includes consent for us to integrate your information with others and then publish the results without determining any respondents.

Instructions:

1. There are **two (2)** sections in the questionnaire.

        Section A: Demographic profiles

        Section B: Continuance Intention to adopt E-Wallet

2. Please read and answer **All** the questions in both sections.

3. It will take you approximately 5 to 10 minutes to complete the questionnaire.

Sincerely,

Name	Student ID	Email
Wong Xin Yan	22ABM06903	xywong123@1utar.my

PERSONAL DATA PROTECTION STATEMENT

Please be informed that in accordance with Personal Data Protection Act 2010 ("PDPA") which came into force on 15 November 2013, Universiti Tunku Abdul Rahman ("UTAR") is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

Notice:
1. The purposes for which your personal data may be used are inclusive but not limited to:-
   - For assessment of any application to UTAR
   - For processing any benefits and services
   - For communication purposes
   - For advertorial and news
   - For general administration and record purposes
   - For enhancing the value of education
   - For educational and related purposes consequential to UTAR
   - For the purpose of our corporate governance
   - For consideration as a guarantor for UTAR staff/ student applying for his/her scholarship/ study loan

2. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services, maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

3. Any personal information retained by UTAR shall be destroyed and/or deleted in accordance with our retention policy applicable for us in the event such information is no longer required.

4. UTAR is committed to ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

Consent:
1. By submitting this form you hereby authorise and consent to us processing (including disclosing) your personal data and any updates of your information, for the purposes and/or for any other purposes related to the purpose.

2. If you do not consent or subsequently withdraw your consent to the processing and disclosure of your personal data, UTAR will not be able to fulfill our obligations or to contact you or to assist you in respect of the purposes and/or for any other purposes related to the purpose.

3. You may access and update your personal data by writing to us at   xywong123@1utar.my

4. **Acknowledgment of Notice**

[   ] I have been notified by you and that I hereby understood, consented and agreed per UTAR above notice.
[   ] I disagree, my personal data will not be processed.
…………………………
Name:
Date:

Qualifying Question

1. Are your age between 11 to 26 years old?

   1.Yes

   2. No

2. Have you used E-Wallet before?

   1.Yes

   2. No

Section A: Demographic profile

Please tick the appropriate answer for each question.

1. Gender   1. Male

                 2. Female

2. Age   1. 11-16 years old

                 2. 17-22 years old

                 3. 23 years old and above

3. Race   1. Malay

                 2. Chinese

                 3. Indian

                 4. Others (please specify):

4.   Average Personal Monthly
Gross Income

| | 1. Less than RM2,000 |
| 2. RM2,001 – RM4,000 |
| 3. RM4,001 – RM6,000 |
| 4. RM6,001 – RM8,000 |
| 5. Above RM8,001 |

5. Most frequent used E-wallet payment
method

1. Boost

2. Touch 'n Go

3. Grab Pay

4. WeChat Pay

5. Shopee Pay

6. Aeon Wallet

7. Others

6. Frequency of using E-Wallet weekly

1. 1-5times

2. 6-10 times

3. 11-15 times

4. Over 15 times

Section B: Generation Z's Continuance Intention to use E-Wallet

Kindly indicate your degree of agreement on the following statements by circling the numbers given the scale of 1 to 5:

Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, Strongly Agree = 5

Dependent Variable

Continuance Intention to use E-Wallet

No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
CI1	I intend to continue using E-Wallet instead of discontinuing its use.	1	2	3	4	5
CI2	I will consider continue to use E-Wallet in the future.	1	2	3	4	5
CI3	I will keep using E-Wallet as it offers me many advantages.	1	2	3	4	5
CI4	My intentions are to continue using the E-Wallet than use any alternative payment methods.	1	2	3	4	5
CI5	I will always try to use E-Wallet to conduct financial transaction.	1	2	3	4	5

Independent Variables

(i)   Mobile Usefulness

No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
MU1	I can choose different E-Wallet methods when making payments, bringing transaction flexibility to me.	1	2	3	4	5

No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
MU2	Making payments by using E-Wallet is more convenient.	1	2	3	4	5
MU3	Using E-Wallet can increase my effectiveness in the transaction process.	1	2	3	4	5
MU4	E-wallet as a payment tool is less time consuming.	1	2	3	4	5
MU5	E-Wallet can help me to manage expenses.	1	2	3	4	5

(ii) Mobile Ease of Use

No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
MEU1	I find E-Wallet easy to use when making the actual payment.	1	2	3	4	5
MEU2	I rarely feel confused when using an E-Wallet.	1	2	3	4	5
MEU3	I rarely make mistakes when using an E-Wallet.	1	2	3	4	5
MEU4	I find that the E-wallet user interface is understandable.	1	2	3	4	5
MEU5	I like payment done via E-Wallet which do not require much mental effort.	1	2	3	4	5

(iii) Mobile Perceived Security Risk

No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
MPSR1	I feel a low chance of getting fraud when performing online transaction through an E-Wallet.	1	2	3	4	5
MPSR2	I immediately receive notifications where there is an error in an E-Wallet on transactions.	1	2	3	4	5
MPSR3	I am comfortable with having my bank card integrated into E-Wallet.	1	2	3	4	5
MPSR4	The service in E-Wallet is safer than traditional payment options. e.g. (credit card, cash).	1	2	3	4	5
MPSR5	E-Wallet ensures protection against financial loss.	1	2	3	4	5

(iv) Mobile Perceived Trust

No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
MPT1	I believe the E-Wallet service provider is trustworthy.	1	2	3	4	5
MPT2	I believe the E-Wallet as the app have feature promised by the providers.	1	2	3	4	5
MPT3	I believe the E-Wallet providers will assist me in case of any issues.	1	2	3	4	5
MPT4	I trust the E-Wallet service providers is competent in handling my transaction.	1	2	3	4	5

		1	2	3	4	5
MPT5	I trust that E-wallet providers prioritize users' interests.	1	2	3	4	5

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS SURVEY