GO CASHLESS! FACTORS AFFECTING THE BEHAVIORAL INTENTION TOWARDS E-WALLET AMONG GEN Z DURING THE COVID-19 PANDEMIC IN MALAYSIA: A CASE STUDY IN SABAH, MALAYSIA

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By

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ABSTRACT

GO CASHLESS! FACTORS AFFECTING THE BEHAVIORAL INTENTION TOWARDS E-WALLET AMONG GEN Z DURING THE COVID-19 PANDEMIC IN MALAYSIA: A CASE STUDY IN SABAH, MALAYSIA

TAN YIE LING

The research is aimed to investigate the factors that affect the behavioral intention towards e-wallet among Gen Z during the Covid-19 pandemic in Sabah, Malaysia. The study examines the behavioral intention towards e-wallet by including independent variables of social influence, perceived ease of use, perceived usefulness, perceived privacy and security, and government support, mediator of attitude toward e-wallet with the aid of TAM theory. Target respondents that included in the research are generation Z in Sabah, Malaysia by collecting data with a total of 385 sets of survey questionnaires. SmartPLS 4 is used to assist in our data analysis along the research. Reliability test, discriminant validity, significance of variables, bootstrapping is applied in the data analysis. The results concluded that the attitude partially mediating the independent variables of perceived ease of use, perceived privacy and security and social influence on the behavioral intention towards e-wallet among generation Z in Sabah, Malaysia during the Covid-19 pandemic. Conversely, perceived usefulness and government support have a direct effect on the acceptance of e-wallet among generation Z in Sabah, Malaysia during the Covid-19 pandemic. Some limitations and suggestions are included in the study to provide a better idea for future researchers, application developers and government to enhance the adoption of e-wallet in Malaysia.

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APPROVAL SHEET

This dissertation/thesis entitled "**GO CASHLESS! FACTORS AFFECTING THE BEHAVIORAL INTENTION TOWARDS E-WALLET AMONG GEN Z DURING THE COVID-19 PANDEMIC IN MALAYSIA: A CASE STUDY IN SABAH, MALAYSIA"** was prepared by TAN YIE LING and submitted as partial fulfillment of the requirements for the degree of Master of Business Administration (Corporate Management) at Universiti Tunku Abdul Rahman.

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Date: __17/10/2022_____

SUBMISSION OF THESIS

It is hereby certified that ____TAN YIE LING___ (ID No: _22ABM00624__) has completed this final year project/ dissertation/ thesis* entitled "Go cashless! Factor affecting the behavioral intention towards e-wallet among Gen Z during the Covid-19 pandemic in Malaysia-A case study in Sabah, Malaysia" under the supervision of _Ms. Chia Mei Si_ from the Department of ___Finance_____, Faculty of _Business and Finance.

I understand that University will upload softcopy of my thesis in pdf format into UTAR Institutional Repository, which may be made accessible to UTAR community and public.

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_____*Eling Tan*_____

(TAN YIE LING)

DECLARATION

I, Tan Yie Ling hereby declare that the dissertation is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UTAR or other institutions.

Eling Tan
(TAN YIE LING)

Date 17/10//2022

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ATT	Attitude
AVE	Average Variance Extracted
BI	Behavioral Intention
CA	Cronbach's Alpha
CMCO	Conditional Movement Control Order
COVID-19	Coronavirus Disease 2019
CR	Composite Reliability
DV	Dependent Variable
EMCO	Enhanced Movement Control Order
GS	Government Support
HTMT	Heterotrait- Monotrait Ratio
ICT	Information and Communications Technology
IT	Information Technology
IV	Independent Variable
MAE	Maybank E-Wallet
MCO	Movement Control Order
MOF	Ministry of Finance
MTMM	Multitrait-Multimethod
N	Population Size
NFC	Near Field Communications
O	Original Sample
OLA	Outer Loading Analysis

OTP	One-Time Password
PEOU	Perceived Ease of Use
PIN	Personal Identification Number
PLS	Partial Least Square
PLS-SEM	Partial Least Square- Structure Equation Modelling
PPS	Perceived Privacy and Security
PU	Perceived Usefulness
QR	Quick Response
RMCO	Recover Movement Control Order
S	Sample Size
SARS-COV-2	Severe Acute Respiratory Syndrome Coronavirus 2
SERC	Scientific and Ethical Review Committee
SI	Social Influence
SME	Small and Medium Sized Enterprises
STDEV	Standard Deviation
TAM	Technology Acceptance Model
TCT	Technology Continuance Theory
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
TTF	Task-Technology Fit
UTAR	Universiti Tunku Abdul Rahman
VIF	Variance Inflation Factor
WHO	World Health Organization

CHAPTER 1: INTRODUCTION

1.0 Background of study

Digital payments date back to 1997 when the Coca-Cola Company debuted a few vending machines in Helsinki that allowed customers to purchase a can via text messages (Sacco, 2020). Using mobile devices to purchase and make payments has become a trend, with 95 million users using their mobile devices to make purchases in 2003. In 2011, Google became the first company to provide a mobile wallet, which allows users to make purchases, accumulate loyalty points, and redeem coupons using NFC (near field communications) technology (Sachdev, 2019).

Despite the fact that it was only accessible on one phone model and was only accepted by a few merchants, it was a great success in the FinTech world. Because of the convenience, simplicity of payment, and security of e-wallets, going "cashless" has become the latest trend in the FinTech industry (Sachdev, 2019).

An E-wallet, commonly known as an electrical and digital wallet, is an electronic card that enables users to conduct online transactions by using any electronic device such as a desktop, laptop, tablet, or smartphone (Definition of 'E-wallets', 2022). E-wallets' function works similarly to a conventional wallet, it stores the

credit and debit card information, as well as digital coupons, loyalty cards, and other information. To make a payment or any money transaction, users must link their bank accounts to their e-wallets. Besides, e-wallet functions as a pre-paid account, allowing users to save money for the future online transaction. Software and information were integrated into the part of a digital wallet. Personal data saved in the part of the software providing information security, protection, and encoding of the data (Definition of ‘E-wallets’, 2022). Nowadays, various mobile security techniques are used by smartphones, for example, complicated alphanumeric passwords as well as biometric procedures like voice activation and fingerprint access, e-wallets use a similar technique. Users of digital wallets can further secure their e-wallet account with a password, customer information is further secured from hackers and other third parties by combining advanced encryption techniques (Laurer, 2021). Modern encryption technology is heavily utilized by e-wallet payment providers to improve mobile wallet security. Data encryption is done by converting regular data, or "plaintext," into a group of random characters, or "ciphertext," which can only be decoded with a unique key. Most businesses safeguard their data with 128-bit data encryption technologies (Allied Wallet, 2021). On the other hand, the information component is a database containing user information such as name, shipping address, billing address, method of payment, information of credit and debit card, amount of the transaction, and so on. As the usage of cashless transactions has grown in popularity, so needs e-wallets. E-wallets may be simply located and downloaded from the app store using the user's smartphone.

Based on (Statista, 2020), the forecast of smartphone mobile payment in global transaction value had increased from 300 million in 2017 to 800 million in 2018, followed by 1200 million (2019), 2000 million (2020), and 2500 million (2021). E-wallets are becoming increasingly popular across the world due to their simplicity, speed, and security.

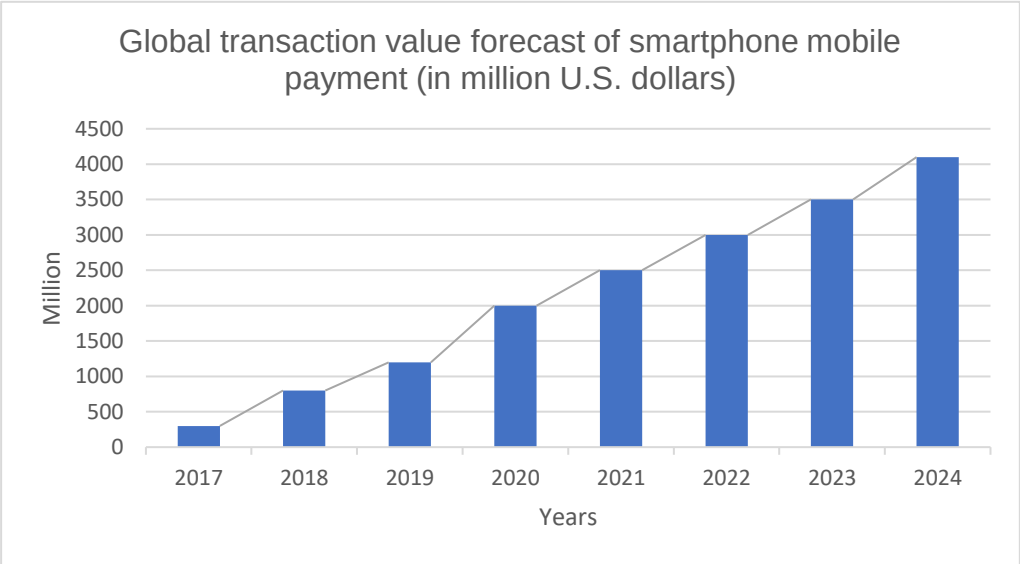


Figure 1.1: Global transaction value forecast of smartphone mobile payment

Source: Statista (2020).

Users may conduct any money transaction with only a few clicks. Users will no longer need to memorize their passwords or even carry a physical wallet outside, all the e-wallets will be protected by a 6-digit password set by the user, and the e-wallet will automatically provide the information on the payment form during the transaction (Definition of 'E-wallets', 2022).

According to (Boku, 2021), the global mobile wallet market is valued at 2.8037 billion in 2020, followed by 3.085 billion in 2021, and the market is predicted to

reach 3.4606 billion in 2022, 3.8565 billion in 2023, 4.3063 billion in 2024 and 4.8727 billion in 2025.

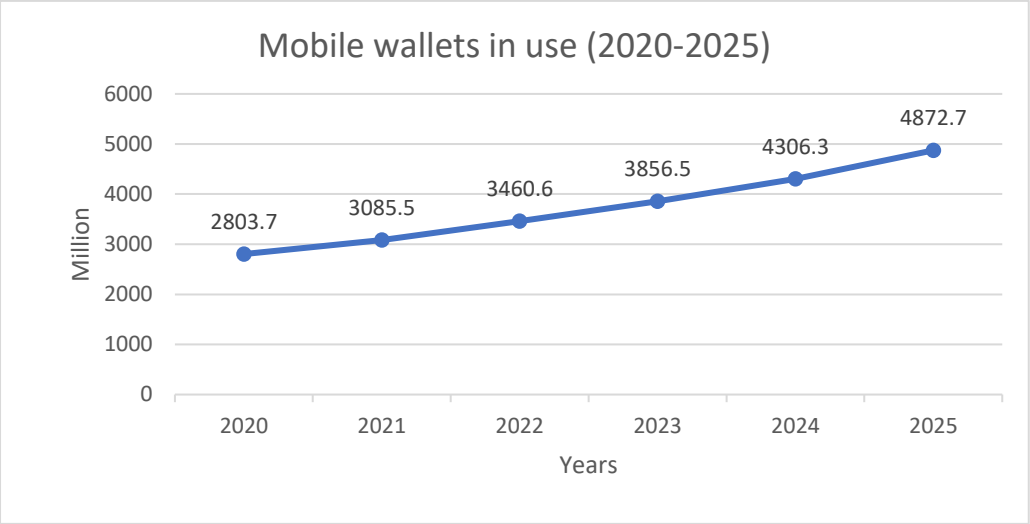


Figure 1.2: Mobile Wallets in use (2020-2025)

Source: Boku (2021).

Coronavirus disease (Covid-19) is an infection caused by the SARS-CoV-2 virus. Most people may experience mild to severe respiratory disease because of the coronavirus, but most will recover on their own without any particular therapy (World Health Organization, 2021). However, some people who are infected with the virus develop significant illnesses and may require medical treatment. Coughing, sneezing, speaking, even the breath of an infected patient, and any little liquid particles from the patient's mouth or nose can spread the virus to persons nearby. Anyone of any age can become infected with the virus, become extremely ill, or die as a result. However, the World Health Organization (WHO) has stated that the best ways to slow and prevent the spread of the virus include staying at least 1 meter away from others to protect yourself, using your hand to

cover your mouth and nose when sneezing, and coughing, washing hands frequently, wearing a fitted mask properly, staying at home and self-quarantining if feeling unwell, and most importantly, getting vaccinated (World Health Organization, 2021). The World Health Organization has deemed the coronavirus to be a severe global health hazard, and this global pandemic has had a significant influence on every sector of the global economy. From the end of 2019 to today, according to statistics from Worldometres, the number of coronavirus cases has reached and even surpassed 500 million (Worldometer, 2022).

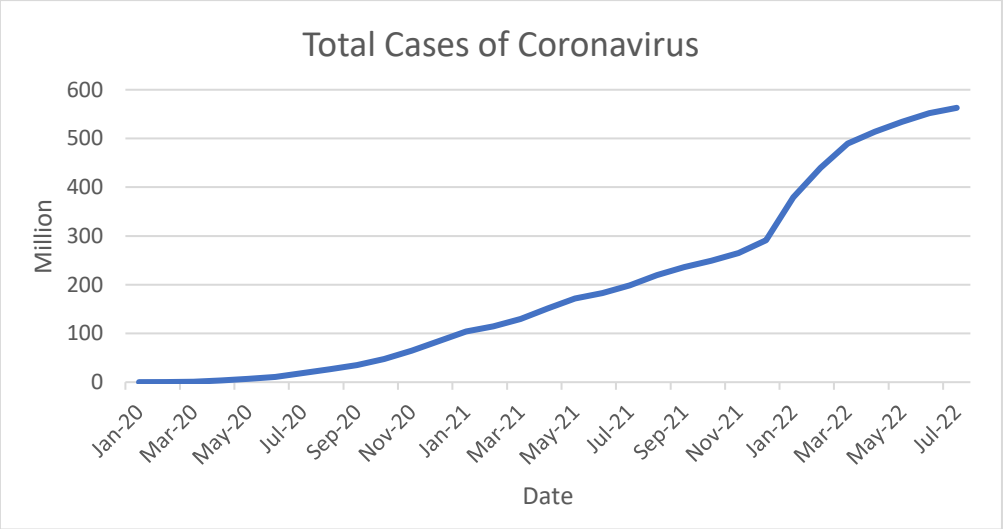


Figure 1.3: Total Cases of Coronavirus

Source: Worldometer (2022).

According to Mastercard Impact Study 2020, mobile or digital wallet usage in Malaysia is leading among countries in Southeast Asia, Malaysia has hit 40% of the digital wallet usage, followed by the Philippines (36%), Thailand (27%), and Singapore (26%) (Tan, 2020).

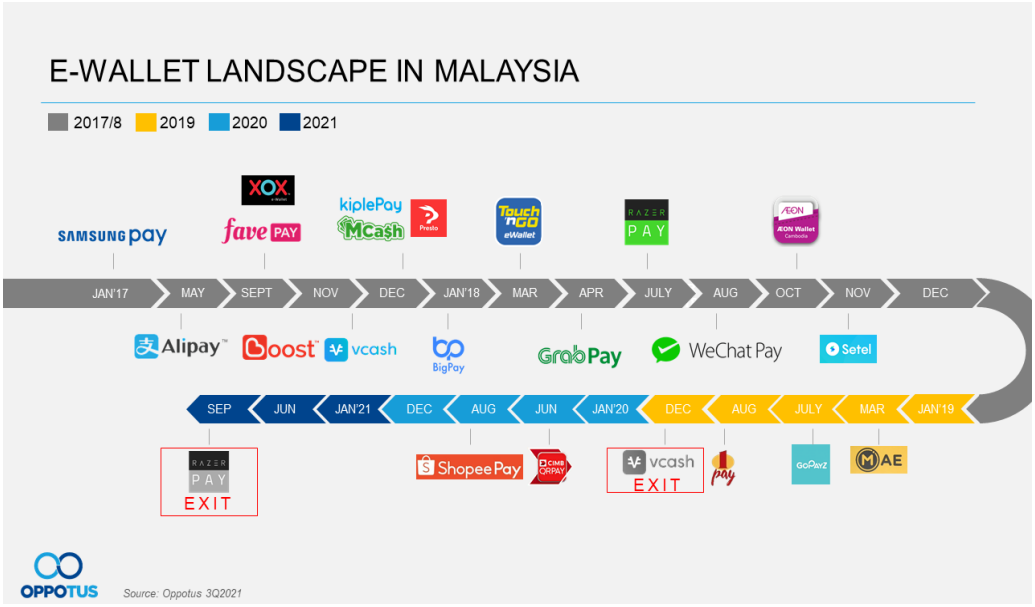


Figure 1.4: E-wallet landscape in Malaysia

Source: Oppotus (2021).

There are many digital wallets available in Malaysia; Samsung wallet, XOX mobile wallet, FavePay wallet, KiplePay wallet, Presto and others were among the first to launch in the FinTech industry in 2017 (Oppotus, 2021). In the next year, BigPay, Touch'n Go e-wallet, GrabPay wallet and others joined the Malaysian digital wallet industry, followed by MAE, GoPayzm, and 1Pay in 2019, Shopee Pay, and CIMB QR Pay in 2020, and VCash and RazerPay in 2019 and 2021, respectively (Oppotus, 2021). To date, there are 53 e-money issuers have been listed, which included 47 non-bank e-money licenses and 6 banks' e-money (Bank Negara Malaysia, 2022).

In the last two years, Covid-19 has had a significant influence on our lifestyles, particularly in Malaysian digital wallet usage. The covid-19 pandemic raised digital wallet usage by more than 80% in Malaysia, with e-wallet tendencies

dramatically increasing due to the decline in cash usage seen during the epidemic (Birruntha, 2021). Malaysia's government implemented the first Movement Control Order (MCO) on 18th March 2020, followed by the Conditional Movement Control Order (CMCO), Recover Movement Control Order (RMCO), and Enhanced Movement Control Order (EMCO), all these control orders had improved individual's consciousness about the significance of the cashless transaction (Fan & Cheong, 2021). The 'nationwide lockdown' also minimized most of the social and physical interaction, leading Malaysians to engage in more contactless transactions, with e-wallet being their preferred method of payment. The government of Malaysia introduced the e-Tunai, e-Penjana, and e-Pemula incentives to encourage people to use electronic wallets. This incentive was given to approximately 15 million Malaysians who qualified via through GrabPay, Touch' N Go, Shopee Pay, and Boost. In the first quarter of 2020, which is the time when Malaysia's government first gave out the e-Tunai incentives, 62% of people used an e-wallet, up to 38% in the fourth quarter of 2019 (Oppotus, 2022). The usage of e-wallets decreases to 49% in the second quarter of 2020 and increases 11% to 60% in the third quarter of 2020, which is also the time when the government has started disbursing the e-Penjana incentive to all eligible Malaysians. (Oppotus, 2022).

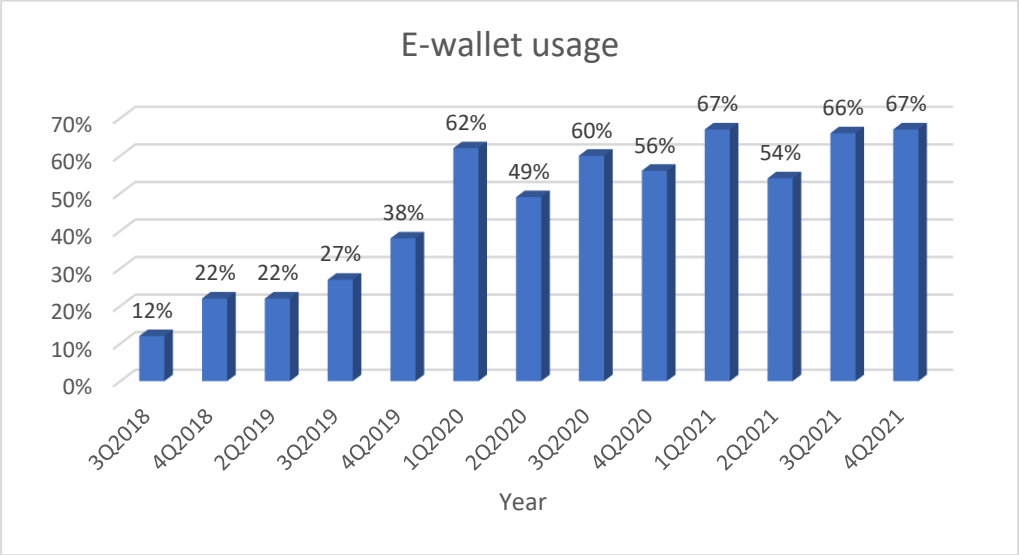
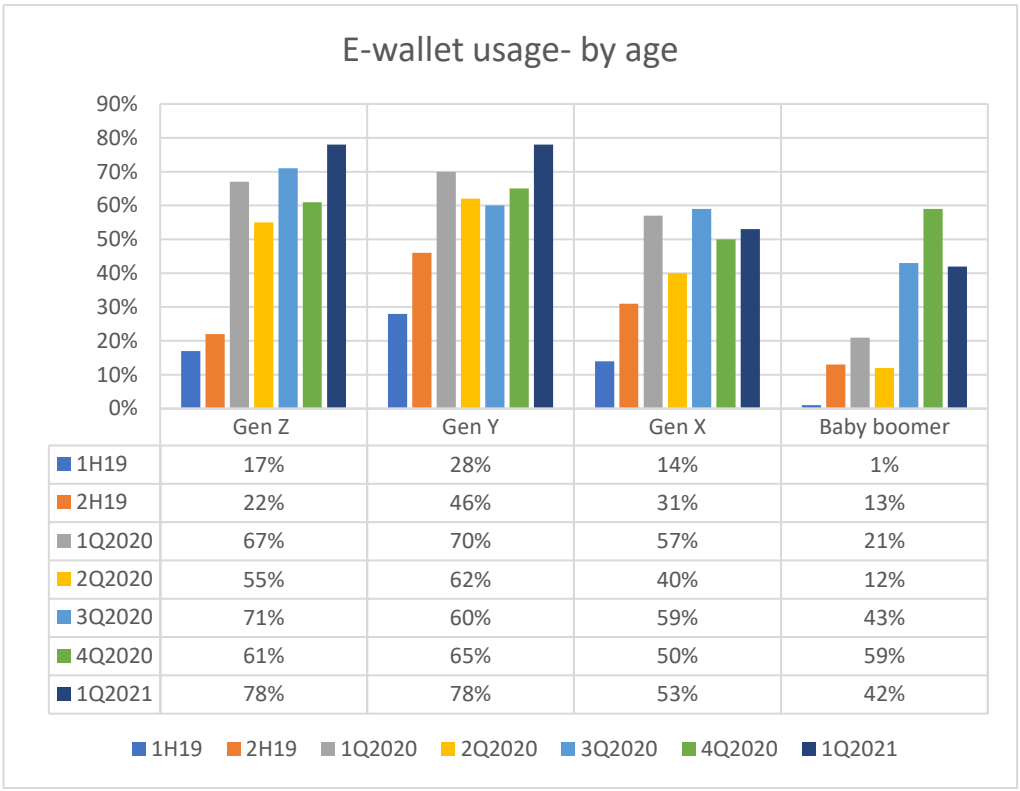


Figure 1.5: E-wallet usage.

Source: Oppotus (2022).



	Gen Z	Gen Y	Gen X	Baby boomer
1H19	17%	28%	14%	1%
2H19	22%	46%	31%	13%
1Q2020	67%	70%	57%	21%
2Q2020	55%	62%	40%	12%
3Q2020	71%	60%	59%	43%
4Q2020	61%	65%	50%	59%
1Q2021	78%	78%	53%	42%

Figure 1.6: E-wallet usage- by age

Source: Oppotus (2021).

According to the Oppotus report in 2020, the e-wallet usage of generation Z increase 16% from the second quarter of 2020 to 71% in the third quarter of 2020, followed by 61% (4Q2020) and 78% (1Q2021). Compared to other generations, Generation Z showed that they had the highest ups and downs percentage, especially from 2H19 until 1Q2021, and Gen Z also had hit the highest e-wallet usage in 1Q2021 among all the generations.

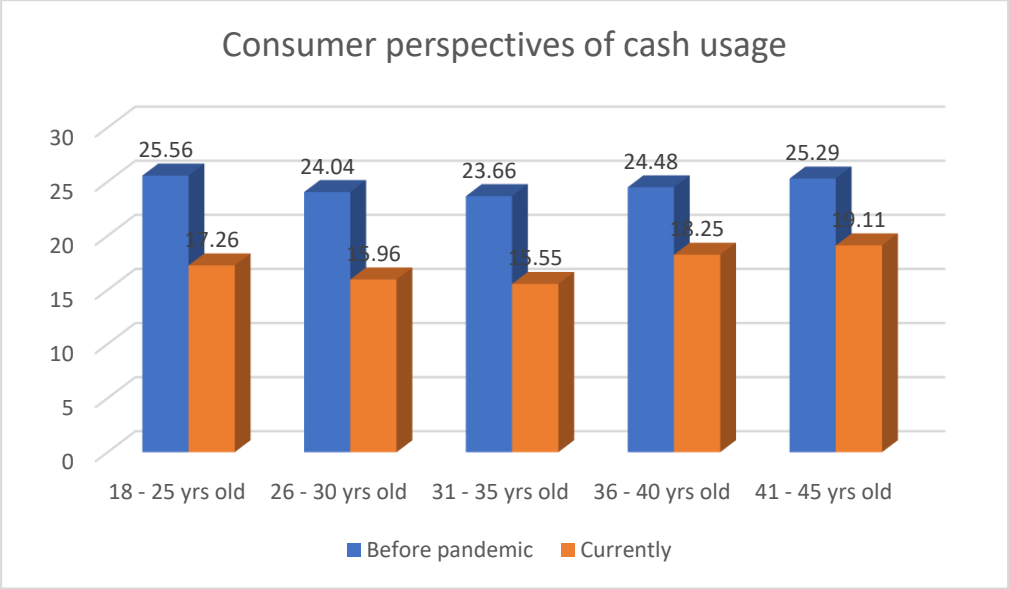


Figure 1.7: Consumer perspectives of cash usage

Source: Payment Network Malaysia (2022).

Moreover, Payments Network Malaysia (2022) showed the result of the consumer perspective of cash usage before and after the pandemic, 18-25 years old, which we know as Gen Z has the highest changes (-8.3) before and after the pandemic, followed by 31-35 years old (-8.11), 26-30 years old (-8.08), 36-40 years old (-6.23), and 41-45 years old (-6.18), this also showed that Gen Z is the highest adopters of digital payments.

Based on the report of (Institute for Capital Market Research Malaysia, 2021), Gen Z and millennials are thought to make up 63% of the world's population, and the figures from the Department of Statistics (2021) showed that 17.1 million Malaysians, or 52.5% of the population, are between the ages of 10 and 40. With an average daily Internet usage of 8 hours, Malaysia's Generation Z is a technologically savvy generation that is largely reliant on social media and smartphones (Fandy et al., 2020). Generation Z is defined as those who were born between 1997 to 2012, as most of them grew up with the internet and technology, they are a vital segment for FinTech firms to target to penetrate e-wallets (Razak et al., 2021).

Due to Covid-19, many countries such as Indonesia, Vietnam, Singapore, Philippines, and Thailand are starting to move into a cashless society (Ho, 2021). The government of Malaysia is also aiming to go cashless in the future, and the implementation and execution of these initiatives will be vital as digital payments involve every part of Malaysian society, not only in the public and private sectors (Birruntha, 2020). It is important to get the onboarding process and coordination right, it will put the economy of one country on the right track if it does well (Gomes, 2022).

Malaysia is divided into two parts: East Malaysia, which is located on the island of Borneo, and West (Peninsular) Malaysia, which is located on the Malay Peninsula (Ahmad, 2022). East Malaysia is made up of the Malaysian states of Sabah and Sarawak, as well as the Federal Territory of Labuan, it covered 20.6%

(6.75 million) of the total population in Malaysia, which included 0.10 million in the Federal Territory of Labuan, 2.82 million in Sarawak and 3.83 million in Sabah (Department of Statistics Malaysia, 2022). Sabah has hit the highest population among other states in East Malaysia. However, the Malaysian government has yet to offer full coverage of 4G mobile networks in Sabah. The 4G availability measure provides the average amount of time that users spend with each operator's network with a 4G or stronger connection while the 4G Coverage Experience metric uses a 0-10 scale to determine how mobile users perceive 4G coverage on an operator's network (Open Signal, 2021). Since an e-wallet requires a sufficient internet connection to function, users in a state of underdevelopment will be unable to make payments. As a result, smartphone users reject to use of e-wallets and doubt their use in comparison to physical cash. Therefore, studying factors affecting the behavior intention toward digital wallets during this pandemic in Sabah, Malaysia is important.

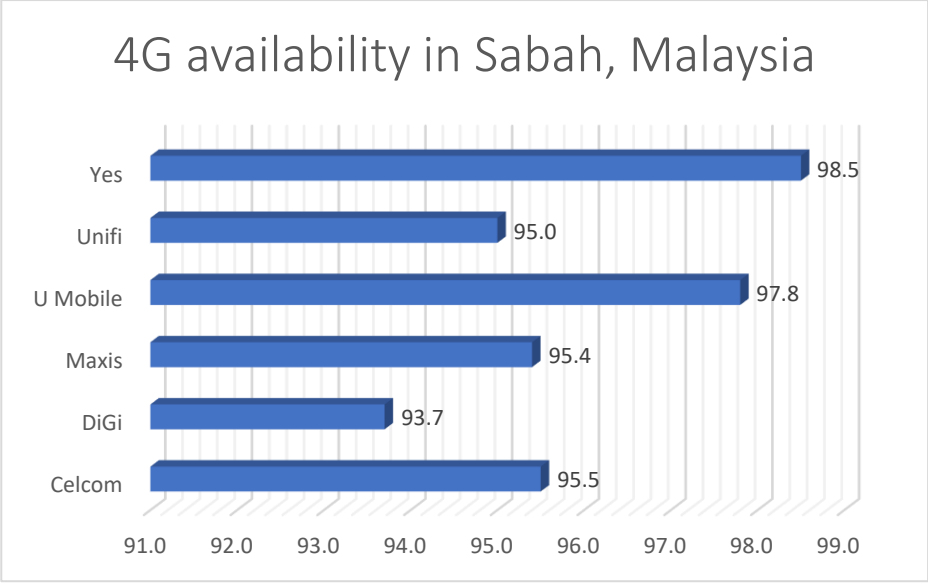


Figure 1.8: 4G availability in Sabah

Source: Mobile Network Experience Report (2022).

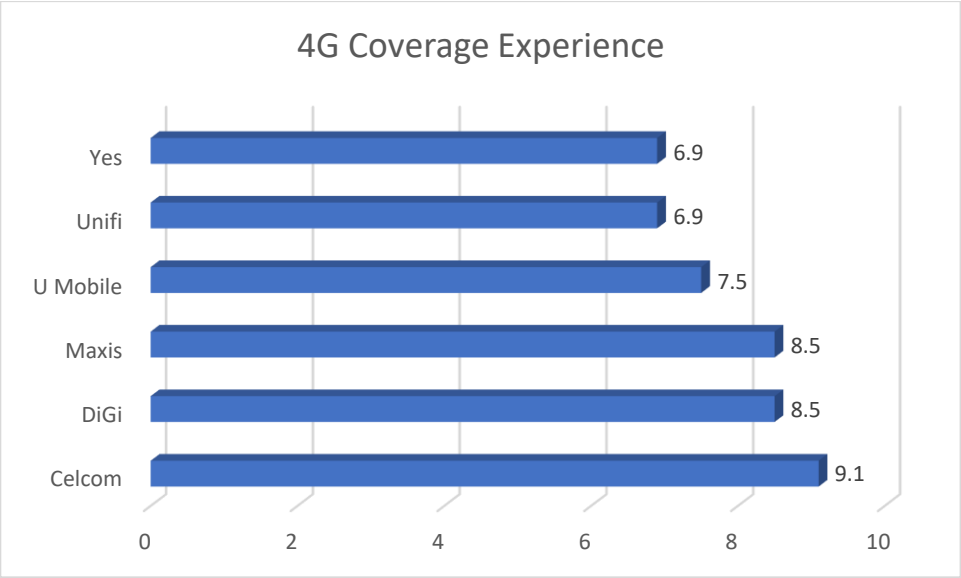


Figure 1.9: 4G coverage experience in Sabah

Source: Mobile Network Experience Report (2022).

1.1 Problem statement

According to Oppotus (2020), the data on payment and e-wallet trends in Malaysia shows only 38% of Malaysian adopted e-wallets before this pandemic, and it increased by 24% sharply to 62% in the first quarter of 2020. Malaysia government launched a RM30 digital incentives program to increase the adoption of e-wallets in 2020, this program received a positive response from Malaysian (Kementerian Komunikasi dan Multimedia Malaysia, 2020). In addition, the Ministry of Finance (MoF) encouraged Malaysians to boost consumer spending with the e-Penjana campaign in June 2020, this program has pushed the usage of e-wallets to raise from 49% to 60%. However, the volume of e-wallet transactions decreased dramatically from 128.3 million to 45.9 million, followed by 95.8 million in April and May 2020 (Bank Negara Malaysia, 2022). Therefore, the relationship between government support, attitude, and behavior intention toward e-wallets during this pandemic needs to be examined in this study.

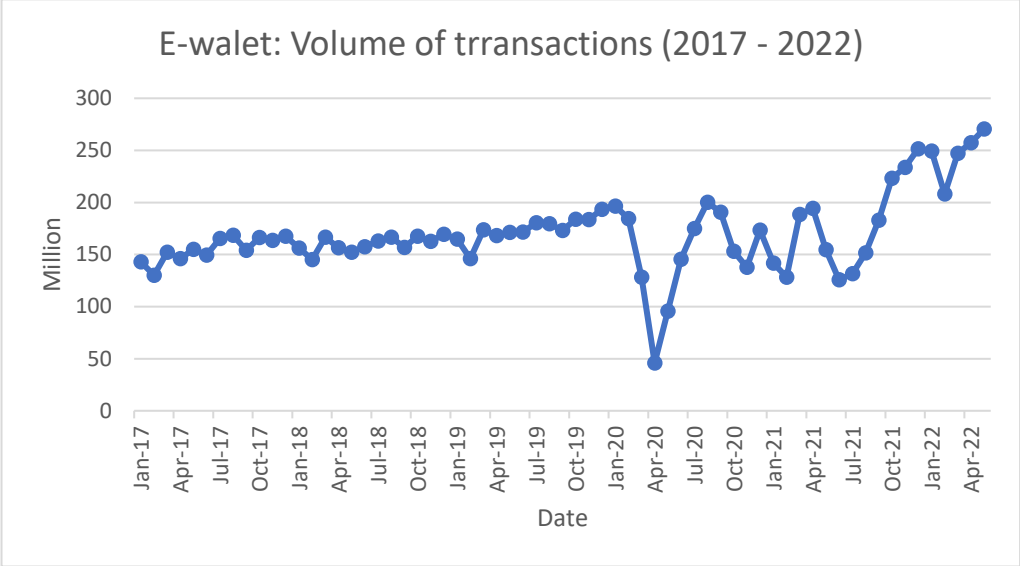


Figure 1.10: E-wallet: Volume of transactions (2017 – 2022)

Source: Bank Negara Malaysia (2022).

Moreover, the impression of social pressure on a person's decision to participate in a certain event is referred to as social influence (Fishbein & Ajzen, 1975). Social influence may come from a variety of places, including family, friends, teachers, lovers, and celebrity influencers. According to Payments Network Malaysia (2022), the decision to adopt and/ or continue usage of e-wallets by generation Z mostly relies on social media including comments, tweets, reviews, and also feedback on digital wallets. The e-Tunai, e-Penjana, and e-Pemula incentives attracted a large number of people to utilize digital wallets, many people will also share about how they claim the incentives successfully on their social media accounts. Malaysians, on the other hand, are drawn to freebies and will sign up for an e-wallet if a discount or promotion is given. They will move on or quit to the next e-wallet once the deal expires. Brand loyalty and stickiness are difficult to come by (Ng, 2019). For this reason, the relationship between

social influence, attitude, and behavior intention toward e-wallets during the covid-19 pandemic needs to be examined in this study.

As Malaysia's government implemented the Movement Control Order (MCO) in 2020, and the awareness of covid-19 towards social distancing has increased, lots of businesses started to realize the distinct advantage of leveraging e-commerce to diverse revenue streams and to meet the ever-rising demand of online shoppers (Nathan, 2021). The top e-commerce platforms in Malaysia such as Lazada, Shopee has also announced their own e-wallet in 2018 and 2019 (Pang, 2019). However, for those e-commerce platforms which don't have their e-wallet, they also collaborated with digital wallets in their payment systems such as GrabPay, Touch'n Go, Boost, and consumers can also direct pay through e-wallet instead of online banking and credit/ debit card method (Gomes, 2022). Users who saved their credit/ debit card information on an e-commerce platform may face cybercriminal risks, hackers can steal personal information such as bank detail, information of credit cards, usernames, and passwords (Yunus, 2017). Instead of memorizing the long credit card number and login to online banking and doing the transaction, the e-wallet which already saves the information of consumer's debit/ credit information can top up with just a click and insert the one-time password (OTP), this is much easier and convenient for the consumer to do online shopping and make payment. In addition, Karim et al. (2020) also stated that the perceived ease of use has a positive and significant relationship with the usage intention to use a digital wallet. According to Payments Network Malaysia (2022), 78% of Malaysians still use cash to pay, despite an 11 percent drop in cash payments since the Covid-19 epidemic. On

average, 48.4% of Malaysians still use cash for everyday costs (Payment Network Malaysia, 2022). Since there are too many e-wallet providers, even if the business supports a specific e-wallet, many e-wallet adopters confront the problem of the cashier not knowing how to use it. It will take them 10 minutes to figure out how to use it, and they may have to call the manager for help, which may be rather inconvenient. This negates the purpose of electronic wallets, which are supposed to be more convenient than cash or even credit cards (Lee, 2018). Consumers and merchants aren't the only ones affected by the oversupply of e-wallets on the market; e-wallet firms are also experiencing difficulties (Lee, 2018). Thus, the relationship between the perceived ease of use, attitude, and behavior intention towards e-wallets during the covid-19 pandemic is proposed for examination in this study.

Furthermore, the major benefit of digital payments is the reduction in the cost of handling cash and peace of mind for consumers and sellers while performing their transactions (Baharuddin & Abu, 2020). Digital wallet enhances transparency, and mobile payment also gives better data access for financial management as it allows consumers to track and monitor their financial activity in real-time (Baharuddin & Abu, 2020). Using a digital wallet is safer and more hygienic, consumers can top up and store money in the e-wallet without having to queue up at ATMs and so on. People can minimize face-to-face contact with others, do contactless payments and avoid carrying physical cash completely by going cashless. The use of e-wallets may bring some effect on the epidemic curve by reducing the amount of physical contact, hence it can reduce the potential spread of the virus (Hassan, 2020). Moreover, Lee and Jais (2022)

revealed that perceived usefulness have a positive and significant association to the intention to utilize e-wallets during the covid-19 epidemic.

However, compared to mobile wallets, credit cards are still the preferred method of payment due to the high acceptance level (Goh, 2020). For example, customers will still require credit cards for large-ticket purchases as it allows them to avoid carrying significant sums of cash. Credit cards are known as a cashless payment system that was first presented to Malaysia 40 years ago (Goh, 2020). Consumers are more familiar with them than with e-wallets since credit cards are a more established type of cashless payment. This also helps to explain why credit cards are still in high demand against e-wallets. The data demonstrate that while e-wallets have a larger transaction volume than credit cards, the latter's transaction value outnumbers the former by a factor of ten (Goh, 2020). Therefore, this project plans to explore the link between the perceived usefulness, attitude, and behavior intention toward e-wallets during this pandemic.

On the contrary, as the Malaysia government stated that Malaysian would go cashless in the future, there are still some consumers who do not adopt e-wallets due to security concerns. Many of them felt that their private information will be stolen, the Nielsen Payment Landscape report showed that 59% believed that digital wallets will lead to credit and debit card fraud, while 38% are concerned about the missing transaction (Tan, 2019). Although there have not been many e-wallet hacking incidents reported in Malaysia, there are still many consumers who think cash is better than an e-wallet. Lee and Jais (2022) and Lee et al. (2020) argued that the intention toward e-wallets is significantly affected by the

elements of perceived privacy and security. Hence, the relationship between perceived privacy and security, attitude, and behavior intention towards e-wallets during the Covid-19 pandemic needs to be examined in this study. This paper attempts to deliver further precise info regarding how the covid-19 epidemic influences behavior intention toward digital wallets.

1.2 Research Objectives

i. To examine the relationship between social influence and the attitude of using e-wallets among generations Z in Sabah, Malaysia.

ii. To examine the relationship between perceived ease of use and the attitude of using e-wallets among generations Z in Sabah, Malaysia.

iii. To examine the relationship between perceived usefulness and the attitude of using e-wallets among generations Z in Sabah, Malaysia.

iv. To examine the relationship between perceived privacy and security and the attitude of using e-wallets among generations Z in Sabah, Malaysia.

v. To examine the relationship between government support and the attitude of using e-wallets among generations Z in Sabah, Malaysia.

vi. To examine the mediating effect of attitude in the relation between perceived privacy and security, social influence, government support, and behavior intention towards e-wallets among generations Z in Sabah, Malaysia.

vii. To examine the relationship between social influence and the behavior intention toward e-wallets among generation Z in Sabah, Malaysia.

viii. To examine the relationship between perceived ease of use and the behavior intention towards e-wallets among generation Z in Sabah, Malaysia.

ix. To examine the relationship between perceived usefulness and the behavior intention towards e-wallets among generation Z in Sabah, Malaysia.

x. To examine the relationship between perceived privacy and security and the behavior intention towards e-wallets among generation Z in Sabah, Malaysia.

xi. To examine the relationship between government support and the behavior intention towards e-wallets among generation Z in Sabah, Malaysia.

1.3 Research Question

i. How does social influence relate to the attitude of using e-wallets among generations Z in Sabah, Malaysia?

ii. How does perceived ease of use relate to the attitude of using e-wallets among generations Z in Sabah, Malaysia?

iii. How does perceived usefulness relate to the attitude of using e-wallets among generations Z in Sabah, Malaysia?

iv. How does perceived privacy and security relate to the attitude of using e-wallets among generations Z in Sabah, Malaysia?

v. How does government support relate to the attitude of using e-wallets among generations Z in Sabah, Malaysia?

vi. How does attitude mediate the perceived privacy and security, social influence, government support, and behavior intention toward e-wallets among generation Z in Sabah, Malaysia?

vii. How does social influence relate to behavior intention towards e-wallets among generation Z in Sabah, Malaysia?

viii. How does perceived ease of use relate to behavior intention towards e-wallets among generation Z in Sabah, Malaysia?

ix. How does perceived usefulness relate to behavior intention towards e-wallets among generation Z in Sabah, Malaysia?

x. How does perceived privacy and security relate to behavior intention towards e-wallets among generation Z in Sabah, Malaysia?

xi. How does government support relate to behavior intention towards e-wallets among generation Z in Sabah, Malaysia?

1.4 Significance of the study

1.4.1 To managerial decision-makers

Covid-19 was declared a pandemic two years ago, this pandemic has changed the world in every sector, it still evolving with new variants and new patterns of the disease and virus. The eradication of the virus still long way to go, the Omicron wave shows no signs of declining, and the Health Ministry of Malaysia stated that Malaysian should start to live with covid-19. This does not mean the public health measures such as wearing a mask and social distancing should be left behind. E-wallets still play a vital role in the FinTech sector during this hard

time, and they will also mark an important instrument in the future since Malaysia is aiming to go cashless (Gomes, 2022).

The aim of digital wallets, also known as e-wallets (Electronic wallets), is for the business owner and customers able to utilize e-payments for safer, cashless transactions, and more effective. In order to understand the factors that affect Malaysian's willingness to use e-wallets in Malaysia, this research will provide valuable information to those who wish to digitalize their business. By advancing technology, the firm may acquire a stronger competitive edge and be able to sell to customers who prefer to pay using digital wallets, giving them an advantage over rivals who favor more conventional payment methods.

For instance, users may concern about perceived ease of use, privacy and security, and usefulness when using a digital wallet. Government and e-wallet adopters can base these factors to make improvements to e-wallets to raise their customer's acceptance of using digital wallets for payment. As the latest generation in Malaysia that grows and lives up with modern technologies, Gen Z has shown being a technology savvy and able to respond on technological developments. (Fandy et al., 2020), this research can assist the government and the e-wallet operators to find out the primary concern of users in Gen Z when utilizing the service of e-wallets.

1.4.2 To the academics

This study can assist future researchers in their studies regarding this topic. This paper is helpful in delivering e-wallet info that future studies may fill the gaps by exploring the factors that lead to the behavior intention of e-wallets in Gen Z during the Covid-19 pandemic in Malaysia. The factors that will influence the attitude and behavior intention toward e-wallets are social influence (SI), perceived ease of use (PEOU), perceived usefulness (PU), and perceived privacy and security (PPS). As the largest generational cohorts right now are Gen Z, and they have the ability to shape future consumer and business trends, future researchers will gain from this research's related information for their study.

In general, most of the past studies were examining the factors which affect the adoption of e-wallets (Abdullah et al., 2020). There are fewer previous studies related to factors that affect the behavior intention of e-wallets during the Covid-19 pandemic. This research will discuss what factors will affect the behavior intention toward e-wallets during the pandemic of covid-19 in Sabah, Malaysia by adding government support and social influence as new factors and provide a clearer perspective on the variables that affect the behavior intention of digital wallets across a wide range of relevant topics.

1.5 Organization of the thesis

The background of the study, research problem statement, research objectives, research questions, the significance of the research, and organization of the thesis will all be explored in depth in Chapter 1. Chapter 2 establishes a literature analysis, conceptual, and theoretical model that includes previous studies' perspectives on the research topic. The methodology, which includes the research procedure and study design, is covered in Chapter 3. Furthermore, the design of sampling, data analysis tools, and data collection will be covered along with primary data.

CHAPTER 2: LITERATURE REVIEW

2.0 Theory of Acceptance Model (TAM) Theoretical Frameworks

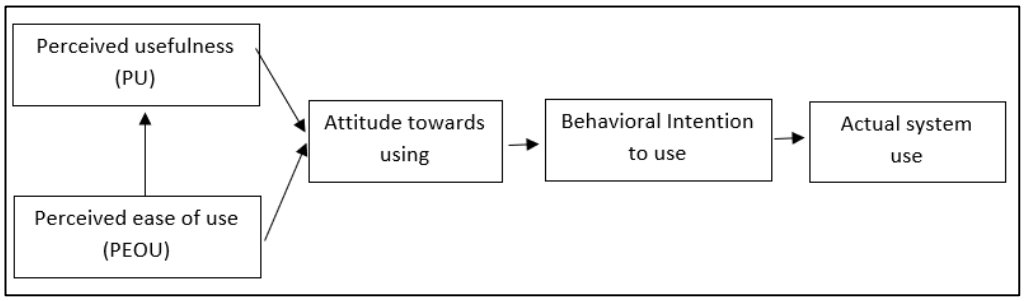


Figure 2.1: Theory of Acceptance Model (TAM)
Source: Davis (1989).

Davis (1989) developed the Technology Acceptance Model, based on the Theory of Reasoned Action (TRA), to investigate the factors influencing how consumers accept and adopt new technology. TAM is a model that is frequently used to describe behavioral intention and the desire to apply new technologies. The intention refers to a person's plan or odds of really performing in a certain way.

According to Davis (1989), he mentioned that perceived usefulness (PU) refers to users' belief that utilizing a particular technology would enhance their life and job achievement, whereas perceived ease of use (PEOU) refers to users' trust and expectation that using a particular technology will be free of effort. In addition, external variables such as social, political, and cultural considerations

can also have an impact on PU and PEOU. Social factors can be categorized as facilitating conditions, which can affect someone's lifestyle. Cultural factor can be knowns as the desirability of users toward a particular system while political factor is stated as political crises or government influence (Betts, 2016). TAM was adopted and used in a number of studies to look at the intention to utilize new technology using two variables: perceived usefulness (PU) and perceived ease of use (PEOU).

2.1 Theory of Acceptance Model (TAM) Past Studies Research

Table 2.1 presents a compilation of historical research based on the TAM and related to digital wallet studies. TAM has also been enhanced in the past by the addition of variables. For example, additional independent factors, such as perceived trust, self-efficacy, and subjective norms were tested (Trivedi, 2016). To investigate digital wallet acceptance in Sabah, Amin (2009) used PEOU, PU, perceived credibility, expressiveness, understanding of the e-wallet as IVs, and acceptance of mobile wallet as DV. To examine the intention toward P2P transactions, the TAM was modified by adding additional dependent variables such as privacy, trust, and security to the model. In addition, they noted that privacy concerns may be influenced by trust and security, whereas relative advantage may be influenced by PEOU.

TAM was used in the study by Chawla and Joshi (2020), and they employed the mediator theory by using PU to mediate the link between trust and PEOU, trust and PU mediates the link between attitude and PEOU, PU mediates the link between attitude and facilitation condition (FC), attitude and PU mediates the link between FC and behavioral intention. Aji et al. (2020) investigated the intention toward digital wallets using TAM and the extra parameters of perceived Covid-19 risk and government support. Furthermore, Tan et al. (2020), as well as Liew (2019), adopted TAM as the main fundamental concept for their research.

In summary, the number of e-wallet research using the TAM and studies looking at the intention to utilize an e-wallet during this pandemic is still limited. This research aims to enrich the e-wallet literature by filling the literature gap by examining the factors that have affected the behavioral intention towards e-wallets during the Covid-19 pandemic, using TAM as the basic theory, and adding two variables which are government support and social influence.

Table 2.1: Relevant E-Wallet Studies that Used the Theory of Acceptance Model

Authors' Name (Year) and research area	Tested Variables	Main Results
Amin (2009) – Mobile wallet	IVs: TAM constructs, Additional IV: perceived expressiveness, knowledge about the mobile wallet, perceived credibility DV: Acceptance of mobile wallet	All the TAM constructs and additional variables were supported except perceived credibility.
Trivedi (2016) – E-wallet	IVs: TAM constructs, Additional IV: Perceived trust, self-efficacy, subjective norms DV: Intention of using an e-wallet	All the TAM constructs were related to the DV. The additional variables however have no significant effect on DV.
Matemba and Li (2018) – WeChat wallet	IVs: TAM constructs Additional IV: Security, trust, privacy DV: Behaviour intention to P2P transaction	All the TAM constructs and additional variables were supported.
Shankar and Datta (2018) – Mobile Payment adoption	IVs: TAM constructs	All the TAM constructs and additional variables

	Additional IV: Personal innovativeness, self-efficacy, subjective norms, trust DV: Adoption of mobile payment	were supported except personal innovativeness and subjective norms.
Yap and Ng (2019) – M-wallet	IVs: Convenience, confidentiality, social influence DV: Perceived usefulness of M-wallet	Both convenience and social influence were related to DV however confidentiality has no significant effect on DV.

Notes: IV refers to the independent variable and DV refers to the dependent variable

2.2 Past studies Related to Government Support

The variable of government support has been examined in various sectors of studies. The encouragement from the government is critical since any action imposed by the government may directly or indirectly alter citizens' intention.

Hossain et al. (2020) stated that government support was revealed to be one of the essential and favorable antecedents in explaining the adoption of online banking systems. To achieve the Digital Vision 2021, the government of Bangladesh has launched various projects and given a massive budget to prioritize the usage of ICT for digitalized banking. (Hossain et al., 2020). Kirana et al. (2018) revealed that there is a positive significant relationship between government support and the online banking implementation. According to the findings, government support was a substantial factor encouraging the adoption of internet banking.

According to Al-Fahim et al. (2016), government support has a positive significant relationship with the intention to use internet banking among SMEs in Yemen. Legal support and digital business supporting law was significant component of internet banking adoption among SMEs in Yemen, as there is effective legislation in Yemen to protect customers' confidentiality and confront cybercrime. Similar results were found in the study of Junnonyang (2021) and Mandari et al. (2017), which stated that government support is positively associated to the intention to use mobile government in Thailand and Tanzania. Rural farmers are more inclined to utilize the mobile government when the key

supporting elements are provided by the government such as the availability of regulations and policies and lowering the cost of mobile ownership (Mandari et al., 2017).

However, Marakarkandy et al. (2017), stated that government support has no significant relationship to attitude and behavioral intention towards e-banking in India. In addition, Amin et al. (2011) revealed that government support is insignificantly related to the customers' intention to use Islamic personal financing in Malaysia. As an emerging economy, Indonesia's SME sector has yet to completely integrate and utilize information technology (IT) in business processes, government support was found to have an insignificant relationship with the readiness of SMEs to adopt information technology in Indonesia (Nugroho, 2015).

2.3 The development of the current research's hypothesis

2.3.1 Social influence (SI) and attitude of using e-wallets

Social influence is also stated as the extent to which a person believes that influential individuals think they should adopt the system is known as social influence (Venkatesh et al., 2003). The relationship between two variables was tested in many past studies, for example,

the paper by (Putit et al., 2021; Alfany et al., 2019; Malik et al., 2019; Lee and Jais, 2022; Kadir et al., 2022). In general, the respondents consensually agreed that social influence shows direct impact on their attitudes of using e-wallets. Uncertainty regarding the possible consequences of innovations creates uncertainty, and those who are uncomfortable with confusion will tend to interact with their social network before making a choice.

According to Lee and Jais (2022), the Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB) were used to investigate the factors that influence people's willingness to use e-wallets during the Covid-19 pandemic, social influence has a positive relationship with the willingness to use e-wallets during the pandemic. Furthermore, Kadir et al. (2022) revealed a significant positive relationship between social influence and a person's attitude of using e-wallet services in Malaysia.

On the other hand, Putit et al. (2021) discovered that social influence findings greatly support the expanded TAM model, although attitudes toward e-wallets and social influence are insignificantly connected. Furthermore, Alfany et al. (2019) claimed that social influence has no effect on attitudes regarding e-wallets in Indonesia. Similar findings were obtained in the study of Malik et al. (2019), which revealed that the association between social influence and attitudes toward e-wallet

usage is insignificant. As a result, the following hypothesis is proposed.

H_1: Social influence is positively related to attitude of using e-wallets.

2.3.2 Perceived ease of use (PEOU) and attitude of using e-wallets

The level to which a person perceived how easy it is to utilize the e-wallet is characterized as perceived ease of use (PEOU) (Tahar et al., 2020). Most of the research which adopted TAM as a basic theory used PEOU as one of the variables as PEOU is also the variable included by TAM. According to Kadir et al. (2022), PEOU is significantly correlated to the attitude of using digital wallets in Malaysia. The findings indicated both the PEOU and user attitudes toward e-wallets in Malaysia are significantly connected. The study of Trivedi (2016) showed the result that PEOU has a significant relationship to attitude and behavioral intention toward digital wallets. It shows that users 18-35 years old are more likely to the adoption of e-wallets. Besides, Shin (2009) pointed out that PEOU and attitude toward the usage intention of mobile wallets are positively related. Bhatt et al. (2021), Ariffin et al. (2021), Amoroso and Watanabe (2012), and Himel et al. (2021) also stated that PEOU has a significant influence on the attitude towards digital wallet usage. However, Daragmeh et al. (2021) observed that PEOU had no significant

influence on customer attitudes toward e-wallets in the post-adoption period because consumers were more experienced and comfortable with utilizing the mobile banking system. A similar result was found in the study of Putit et al. (2021), PEOU and attitudes of using e-wallets are insignificantly associated because of the participants' knowledge of Internet and smartphone usage, which may improve their expectancies of service utility rather than altering their attitudes toward the system. As a result, the following hypothesis is proposed.

H_2: Perceived ease of use is positively related to attitude of using e-wallets.

2.3.3 Perceived usefulness (PU) and attitude of using e-wallet

Perceived usefulness (PU) is referred to the extent to which individuals believe how useful the e-wallet would be (Tahar et al., 2020). Consumers tend to use digital wallets continuously compared to other methods of payment if an e-wallet has a high value in PU. PU is another parameter included in TAM that is usually found in studies. Based on the study by Trivedi (2016), stated that PU is significantly associated with an attitude of using e-wallets. The higher the level of PU, the greater the attitude toward e-wallet adoption. In a research done by Kadir et al. (2022) to evaluate the external and internal variables that influence the e-wallet usage of Malaysian consumers

using the extended Technology Acceptance Model, PU was shown to possess a substantial connection with the attitude regarding digital wallets. In addition, Daragmeh et al. (2021), Bhatt et al. (2021), Ariffin et al. (2021) and Himel et al. (2021) stated PU has a strong impact on attitudes of using e-wallets in their studies. Chawla and Joshi (2020) pointed out that the higher the level of PU, the greater the level of trust, attitude, and behavioral intention. Users with a high level of PU will find an e-wallet to be convenient and advantageous in conducting payment transactions. As a result, the following hypothesis is proposed.

H_3: Perceived usefulness is positively related to attitude of using e-wallets.

2.3.4 Perceived Privacy and Security (PPS) and attitude of using e-wallet

Perceived security is defined as individuals only feel minimal fear when adopting the new technology while perceived privacy is concerned with the protection of their private data (Tahar et al., 2020). Security issues included verification (information shared during the transaction restricted to the authorized customer only), confidentiality (information transferred during the payment read and acknowledged only by the potential recipient), non-repudiation (attendees of the transaction were unable to refuse their involvement in the transfer of fund), and data integrity (precise information transmitted during the

transaction) while privacy concern included collection (the business obtaining too many personal details), illegal access (private data was not secured), inconsistencies (inaccurate private data in the database), and secondary use (private data used for activities which apart from those authorized by the potential customer) (Amoroso & Watanabe, 2012). Based on the study of Chawla and Joshi (2020), perceived privacy is stated to have a significant relationship with attitudes towards e-wallets. They also pointed out that privacy is one of the variables that affect the consumer of India in mobile wallet adoption. According to Singh and Kalra (2021), security has a positive linkage with customers' attitudes toward digital wallet services. Similar results were found in the study by (Amoroso & Watanabe, 2012; Chawla & Joshi, 2019), which showed a positive significant relationship between perceived security and privacy and attitude towards the mobile wallet in Japan and India. However, Deka (2020) stated that perceived security shows insignificant consequences on attitudes towards mobile wallets in Northeast India. As a result, the following hypothesis is proposed.

H_4: Perceived privacy and security are positively related to attitude of using e-wallet.

2.3.5 Government support (GS) and attitude of using e-wallets

In order to encourage cashless transactions and e-commerce in the era of the pandemic, the Malaysian government, for example, was offering an e-Tunai incentive of RM30 in January 2020, an e-Penjana incentive of RM50 in July 2020, and an e-Pemula incentive of RM150 in April 2022. (Gomes, 2020).

As reported by Lee and Jais (2022), all factors including government support affect the intention toward e-wallet usage in Malaysia. General research on the intention to utilize mobile payment services in Nanjing, China was conducted by (Phuah et al., 2018). According to the findings, support from family members would lead to respondents using E-wallets, followed by the involvement of government and social media. Furthermore, in the study by Hossain et al. (2020), government support was revealed as one of the greatest significant and positive determinants in explaining the acceptance of digital banking systems in this study. According to these arguments, it is expected that government support will affect attitudes toward the use of e-wallets. As a result, the following hypothesis is proposed.

H_5: Government support is positively related to attitude of using e-wallets.

2.3.6 Attitude mediates the relationship between social influence, perceived privacy and security, government support, and behavioral intention towards e-wallet

Davis (1989) established the technology acceptance model (TAM), which is the most well-known technique for discovering and analyzing individual intentions to adopt new technology. According to Davis (1989), a person's attitude toward implementing new technologies influences behavioral intention, with perceived usefulness and perceived ease of use being the two main influencing variables on an individual's adoption. Putit et al. (2021) investigated the impact of attitude as a mediator between perceived ease of use, perceived usefulness, social influence, and behavioral intention to adopt contactless payment transactions. The study found that attitude influenced the link between perceived ease of use, perceived usefulness, social influence, and behavioral intention. Moreover, Chawla and Joshi (2020), Bhatt et al. (2021), Shin (2009), Amoroso and Watanabe (2012), and Himel et al. (2021) pointed out that attitude moderates the link between perceived ease of use, perceived usefulness, and intention towards digital wallet. According to the findings, the primary focus of e-wallet adoption and diffusion initiatives should be on evolving consumer attitudes that promote effective utilization and acceptance of the behavior. As a result, the following hypothesis is proposed.

H_6: Attitude mediates the relationship between social influence, perceived privacy and security, government support, and behavioral intention towards e-wallets.

2.3.7 Social influence (SI) and behavioral intention towards e-wallet

Social influence is the extent to which a person believes that influential individuals think they should adopt the system is known as social influence (Venkatesh et al., 2003). The relationship between two variables was supported in many past studies, for example, the paper by (Teo et al., 2020; Chew et al., 2021; Azman et al., 2021; Nag & Gilitwala, 2019). In general, the respondents consensually agreed that they will adopt the service when many users had shared their thoughts and experiences with digital wallet services on websites, social media, and other public platforms. Users can post their behavioral intentions to embrace and suggest a new technology to others on the future social network platform.

Nevertheless, the relationship was not supported in a few studies as a consensus agreement among the respondents was not reached. In the study by Effendy et al. (2021), social influence has been discovered to have an insignificant effect on the intention to use e-wallets. A similar result was also found in the paper of Cheng et al. (2018). According to Effendy et al. (2021), social influence was found to be insignificantly associated with the intention may because millennials

in their study were not impacted by the role models they idolize, while Cheng et al. (2018) stated the result showed insignificantly may due to the fact that those who adopted new technology in the research were among the innovators, early adopters, and early majority who were willing to face significant risk in doing so. As a result, the following hypothesis is proposed.

H_7: Social Influence is positively related to behavioral intention towards e-wallets.

2.3.8 Perceived ease of use (PEOU) and behavioral intention towards e-wallet

According to Amin (2009), PEOU is positively linked to bank customers' willingness to adopt e-wallets in Sabah. The findings revealed a significant positive association between the PEOU and the consumer's intention to use e-wallets in Sabah. The study of Trivedi (2016) showed the result that PEOU has a significant relationship to attitude and behavioral intention toward digital wallets. It shows that users 18-35 years old are more likely to the adoption of e-wallets. Besides, Singh (2019) pointed a positive relationship between PEOU and behavioral intention to utilize e-wallets. According to the report, customers find it easier to use e-wallets since they only require scanning for the QR code instead of memorizing and keying in the long card PIN during payment transactions. PEOU has also been found to have a positive influence on mobile wallet adoption by Singh

et al. (2020), Shankar and Datta (2018), Chua et al. (2020), and Karim et al. (2020). As a result, the following hypothesis is proposed.

H_8: Perceived ease of use is positively related to the behavior intention towards e-wallets.

2.3.9 Perceived usefulness (PU) and behavioral intention towards e-wallet

Based on the study by Amin (2009) and Trivedi (2016), PU is directly associated with usage intentions. The higher the level of PU, the greater the consumer's behavioral intention toward e-wallet adoption. In a study done by Shankar and Datta (2018) to evaluate the main parameters influencing the mobile payment acceptance of Indian consumers using the extended TAM, PU was shown to possess a substantial association with mobile wallet intention. In addition, PU is stated to have a significant effect on intention toward e-wallet adoption in the study by Singh et al. (2020), Tan et al. (2020). Chawla and Joshi (2020) pointed out that the higher the level of PU, the greater the level of trust, attitude, and behavioral intention. Users with a high level of PU will find an e-wallet to be convenient and advantageous in conducting payment transactions. As a result, the following hypothesis is proposed.

H_9: Perceived usefulness is positively related to the behavior intention towards e-wallets.

2.3.10 Perceived privacy and security (PPS) and behavioral intention towards e-wallet

Based on the study of Matemba and Li (2018), perceived privacy is stated to have a significant relationship with behavioral intention towards P2P transactions. They also pointed out that privacy is one of the variables that affect the consumer of South Africa in Wechat wallet adoption. In addition, Chellappa (2007) showed that PPS may have a direct impact on customers' confidence in digital commercial transactions; it also highlighted that the influence of privacy on commerce trade confidence is heavily driven by perceived security. A study conducted by Soodan and Rana (2020), stated that perceived security has a favorable and substantial association with users' inclination to use digital wallets in India. This finding is consistent with previous studies that found perceived privacy and security to be a significant factor in determining intentions to adopt digital wallets (Amoroso and Watanabe, 2012; Deka, 2020; Shin, 2009). However, Chawla and Joshi (2019) showed that perceived security was insignificantly related to the adoption of e-wallets in India. As a result, the following hypothesis is proposed.

H_{10}: Perceived privacy and security are positively related to the behavior intention towards e-wallets.

2.3.11 Government support (GS) and behavioral intention towards e-wallet

Government assistance to a business can lower the price of goods or services by lowering tax rates or contributing to the expense that a consumer would pay for excellent performance (Kee et al., 2022). According to Si (2022), government support was significantly and positively associated with e-wallet adoption intentions in Malaysia. Similar results were found in the study by Ojo et al. (2022) and Chan et al. (2021). According to Ojo et al. (2022), government support is directly linked to digital wallet usage intention as Malaysia's government has implemented relevant initiatives to facilitate cashless payments by pushing individuals to reduce physical contact, hence limiting the spread of the virus. On the other hand, Chan et al. (2021) investigated the intention of the young generation toward the adoption of digital wallets, and it was discovered that government support has a significant and positive relationship with the intention. However, this result contradicts Kee et al. (2022) and Thai and Kuwa (2021), where government support was insignificantly related to the intention toward e-wallet adoption. As a result, the following hypothesis is proposed.

H_{11}: Government support is positively related to the behavior intention towards e-wallets.

2.4 Proposed Conceptual Framework

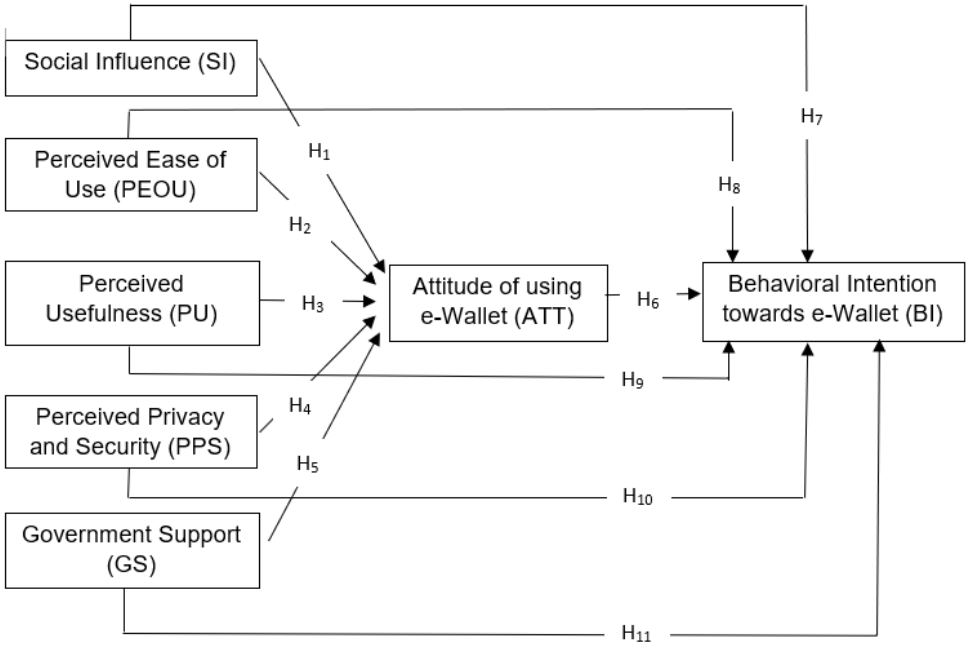


Figure 2.2 Proposed Model

The fundamental framework, TAM, was employed in this study to evaluate the e-wallet as it is a highly valid approach. Besides, 'Social Influence (SI)' and 'Government Support (GS)' have been added as new independent variables in the research. 'Attitude (ATT)' as a mediator between SI, GS, PPS, and BI. The behavioral intention of Generation Z in Sabah, Malaysia to adopt e-wallets (BI) will be the DV of this study.

CHAPTER 3: RESEARCH METHODOLOGY

3.0 Introduction

This study goes into considerable detail on methodology analysis. In addition, this section will explain the research process, including how the study will be carried out, analyzed, and performed, as well as why specific research methodologies are proposed.

3.1 Research Design

Comparatively, the majority of past studies used a quantitative approach when they intended to develop the fundamental TAM theory. In quantitative research, a larger sample size might be able to generate results that are more accurate and significant for the research, it is also necessary to ensure that the population is distributed in a representative manner. In summary, the quantitative approach is the most appropriate methodological approach for this study.

Table 3.1 shows the compilation of several previous studies that had used TAM in e-wallet studies, in which qualitative data was not collected by the shown past studies. This research uses structured questionnaires to obtain quantitative data in a way similar to those in past studies. By modifying the measuring items from previous research, the TAM and additional variables are modified to fit the context of this study. The ongoing phenomenon of e-wallets usage intention among Gen Z in Malaysia was explained using a descriptive design.

Table 3.1 Overview Past Studies in E-wallet Study Context

Authors' name (Year)	The Source of Data	Reasons for using the sources of data
Yaakop et al. (2021)	Quantitative	To study the relationships between the TAM and TTF construct and intention to use an e-wallet.
Kasirye & Masum (2021)	Quantitative	To study the relationships between e-wallet usage, age, gender, income levels, and effects of e-wallets.
Halim et al. (2021)	Quantitative	To study the relationships between the TAM and TCT construct and e-wallet continuance usage intention.
Matemba & Li (2018)	Quantitative	To study the relationships between security, trust, privacy concerns, perceived ease of use, perceived relative advantage, and intention of South Africans to use WeChat wallet.
Kumar et al. (2017)	Quantitative	To study the relationship between subjective norms, awareness, perceived security, cash crunch, and intention to use mobile wallets.

3.2 Target population

‘Participants’ refers to everyone who participates in this study, in which the researcher is targeting in drawing conclusions. In this research, the target population of this study is Malaysian aged between 18 to 25 years old, which is also known as Gen Z (Dimock, 2019). The reason for selecting Gen Z who live in Sabah, Malaysia as respondents is because the largest age group in Malaysia currently now is Gen Z, which makes up approximately 29% of the total population, Gen Z is a technologically savvy generation that is largely active on social media and smartphone, with an average daily internet usage of 8 hours (Fandy et al., 2020). In addition, Gen Z also showed the highest usage of e-wallets in the third quarter of 2020 (Oppotus. 2021). Moreover, the reason for selecting Sabah, East Malaysia as sampling location because there have been few prior research on how the Covid-19 epidemic influence digital wallet usage intention in East Malaysia. East Malaysia covered 20.6% (6.75 millions) of total population in Malaysia, which included 0.10 million in Federal Territory of Labuan, 2.82 million in Sarawak and 3.83 million in Sabah, Sabah has hit the highest population among other states in East Malaysia (Department of Statistics Malaysia, 2022). In order to improve their system, the government and software development companies should understand why Gen Z users have chosen in using e-wallets as a result of this research.

3.3 Sample size

Table 3.2: Krejcie and Morgan's Determining Sample Size Table

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.

Source: Krejcie, & Morgan. (1970).

Followed by the information of Department of Statistics Malaysia (2020), there are 32.7 million people living in Malaysia, East Malaysia (Sabah) account for 10.4% of the total, which the total is 3.4 million. Using the Morgan's sample size table, a total of 384 respondents should be selected from population counts of 100,000 and more (Krejcie & Morgan, 1970).

3.4 Sampling design

Probability sampling and non-probability sampling are the two different types of sampling techniques. Non-probability sampling is the method of choice for the research. This is due to the convenience and suitability of non-probability sampling for this study's time, financial, and massive collection size constraints. According to Etikan et al. (2016), primary objective of convenience sampling is to gather respondents' info so that the researchers may easily access it. Due to the large population of Gen Z in Malaysia, which is also the target population, convenience sampling will be conducted by distributing the online questionnaire through Google Forms. As a result, respondents were randomly selected at the appropriate location and time.

3.5 Development of Questionnaire and Data Collection Method

Academic professionals were engaged to evaluate the prepared statement for each item. This also known as a component of the process for enhancing the construct's validity. The professional provided feedback regarding how to rephrase the statement so that participants may better grasp what each measuring item is designed to assess. Appendix 3.1 showed the questionnaire which drafted by the current researcher after obtaining information on the measuring items for all examined variables from previous research and the academic experts' amendment suggestion. Prior to the main survey, a pilot study to assess the validity and reliability of the proposed questionnaire must be conducted in order to verify that the main survey participants can fully comprehend the generated questionnaire item statements. The specifics of the pilot test are explained in the following subtopic.

3.5.1 Pilot test

The pilot test, which is used in research studies, is a critical and necessary stage before running the large-scale collection of data (Zailinawati et al., 2006). 30 Google Form pilot test questionnaire will be provided to Gen Z through social media. Isaac and Michael (1995) and Hill (1988) stated individuals between 10 and

30 are recommended for the pilot test in questionnaire research. The recommended number of participants for a pilot test is between 30 and 100, however this number will vary depending on the size of the research sample (Ruel et al., 2015). It is a preliminary evaluation to identify any issues with the suggested study (Alkhurayyif & Weir, 2017). Pilot testing improves the research's relevance, clarity, and substance. Additionally, indications of a relationship between the questionnaire's variables will be found, and performance metrics like time required will be calculated.

Table 3.3: First Drafted Questionnaire Item Statements

	Variables	Measuring items	Sources
SI1	Social Influence	I feel like part of the community by using e-Wallet.	Kadir et al. (2022)
SI2		I use e-Wallet because the community encourages me to use it.	
SI3		I use e-Wallet because everybody around me is using it.	
SI4		I am using e-Wallet because my family members use it.	
SI5		I am using e-Wallet because a salesperson is encouraging me to use it.	
SI6		I am using e-Wallet because my friends usually use it.	
SI7		People important to me have a positive attitude towards e-Wallet [1].	Bramantyo & Utami (2022)
SI8		Many people have a positive attitude towards e-Wallet [2].	
PEOU1	Perceive Ease of Use	Learning to use e-Wallet service is easy for me.	Trivedi (2016)
PEOU2		I rarely get frustrated when I use E-Wallet.	
PEOU3		I find it easy to use E-Wallet services.	
PEOU4		I rarely make errors when using the E-Wallet.	

PEOU5		I find e-Wallet [3] app useful for my various types of payment needs.	Bhatt et al. (2021)
PEOU6		I like the fact that payments done through e-wallets [4] require minimum effort.	
PEOU7		Generally, using an e-Wallet is effortless.	Kadir et al. (2022)
PEOU8		Instruction in using e-Wallet is easy for me.	
PU1		E-Wallet has improved quality of my life.	Trivedi (2016)
PU2		I find E-Wallet useful in the buying process.	
PU3		E-Wallet services have improved my productivity.	
PU4		E-Wallet services increase my effectiveness.	
PU5	Perceived usefulness	I think using e-Wallet [5] app would enable me to complete transactions more quickly as compared to other traditional methods.	Bhatt et al. (2021)
PU6		I believe e-Wallet [6] app improves the quality of online transaction.	
PU7		I can track my spending better using e-Wallet compared to cash money.	Kadir et al. (2022)
PU8		E-wallet is a better alternative mode of payment compared to cash money.	

PPS1		I am quite confident making payments through e-Wallet [7] apps. Eg. Boost, Touch'N Go, Grab Pay, etc.	
PPS2		I believe technology used in e-Wallet [8] apps is very secure.	
PPS3		I believe e-Wallet [9] apps has a potential to be safer than traditional payment options (such as credit cards, cash etc).	Bhatt et al. (2021)
PPS4	Perceived privacy and security	I believe that transactions conducted through e-Wallet [10] apps are secure.	
PPS5		I believe the chances of losing money stored in e-Wallet [11] are low.	
PPS6		I would feel safe providing sensitive personal information over the e-Wallet [12] platforms.	Zhang et al. (2019)
PPS7		I perceive secure using my credit/debit card information through e-Wallet [13] platforms.	
PPS8		I believe the information (personal and behavioral) being collected is not being used for purposes other.	Alshurideh et al. (2021)
GS1		During COVID-19 pandemic, the government encourages payment transaction using e-Wallets.	
GS2	Government support	During COVID-19 pandemic, the government ensures e-Wallets server facilities.	Aji et al. (2020)
GS3		During COVID-19 pandemic, the government encourages payment innovation via e-Wallets.	

GS4		During COVID-19 pandemic, the government controls e-Wallets payment operations.	
GS5		During COVID-19 pandemic, the government provides digital incentives to e-Wallets users.	
GS6		During COVID-19, the government broadcasts a budget to upgrade the e-Wallet industry.	Kee et al. (2022)
GS7		The government ensures that the e-Wallet server is stable during Covid-19.	
GS8		Amid COVID-19, I found the stringent control lance from governance over e-Wallet system operations.	Vinitha (2021)
ATT1	Attitude	I am happy with the e-Wallet payment system.	
ATT2		I am fascinated with the e-Wallet payment system.	
ATT3		Overall, I am satisfied with the E-wallet.	
ATT4		I am enjoying using the e-Wallet when shopping.	Kadir et al. (2022)
ATT5		I am happy with the internet connection when accessing the e-Wallet services.	
ATT6		I am pleased with the e-Wallet application for its privacy reason.	
ATT7		I am pleased with the e-Wallet application for its security reason.	
ATT8		Using e-Wallet [14] is beneficial.	Bramantyo & Utami (2022)

BI1	Behavioral intention	I will use e-Wallets for payment transactions during COVID-19 pandemic.	Aji et al. (2020)
BI2		I prefer using e-Wallets for payment transactions during COVID-19 pandemic.	
BI3		In the future, I will use e-Wallets for payment transactions.	
BI4		If I had access to E-Wallet, I intend to use it.	Trivedi (2016)
BI5		I would recommend e-Wallet payment to others during Covid-19 pandemic.	Kee et al. (2022)
BI6		I will continue to use e-Wallet to make payments even if the pandemic is over.	
BI7		I plan to use the e-Wallet [15] frequently.	Bhatt et al. (2021)
BI8		I expect my use of the e-Wallet [16] app to increase in the future.	

Notes

[1] [2] [14]

Modified ‘online application’ to ‘e-Wallet’

[3] [4] [5] [6] [7] [8] [9] [10] [12] [13] [15] [16]

Modified ‘mobile payment’ to ‘e-Wallet’

[11]

Modified ‘mobile wallet’ to ‘e-Wallet’

In a pilot test, the reliability value of each factor was evaluated by determining the Outer Loading Analysis, Cronbach's Alpha (CA), Average Variance Extracted (AVE), and Composite Reliability (CR) values for each item.

3.5.2 Pilot test result

3.5.2.1 Outer Loading Analysis

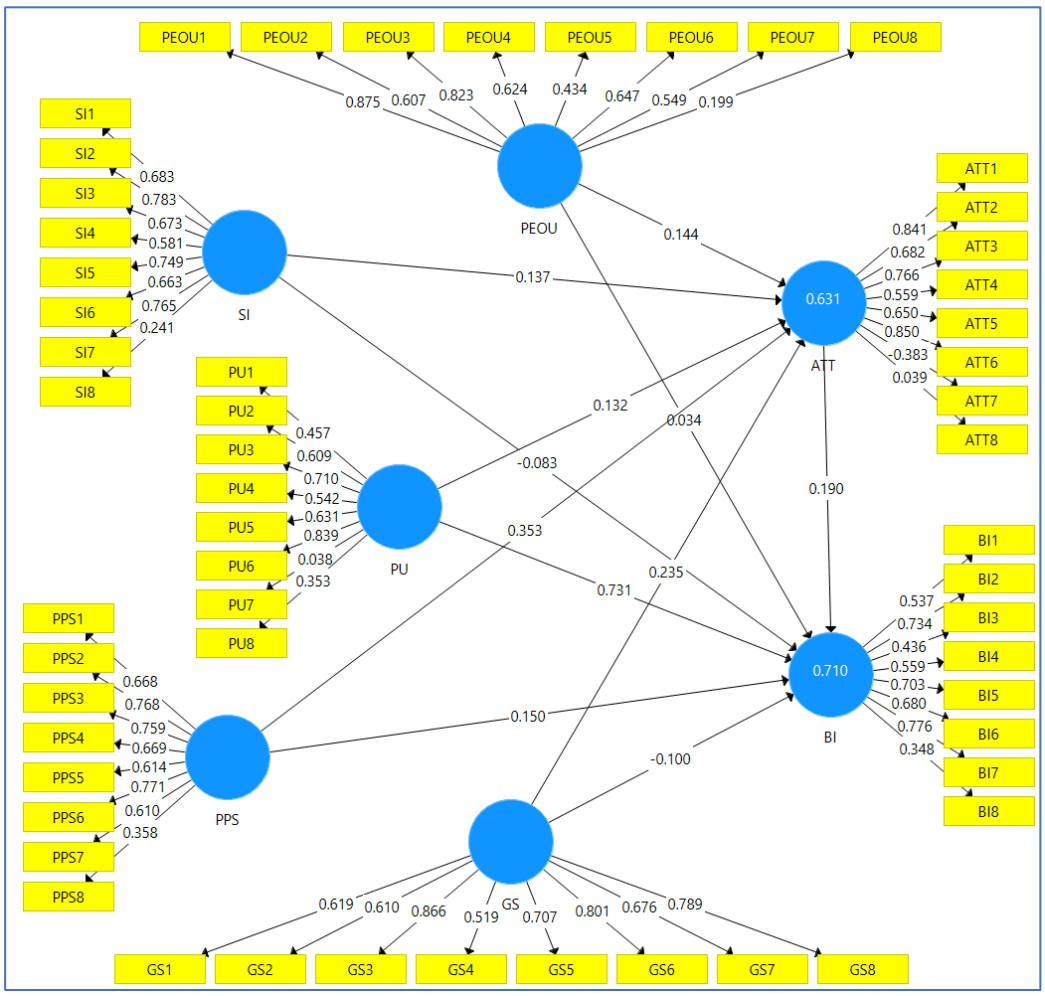


Figure 3.1: Diagram of Outer Loading Analysis

Note: BI is behavior intention toward e-wallets; SI is social influence; PEOU is perceived ease of use; PU is perceived usefulness; PPS is perceived privacy and security; GS is government support; ATT is attitude of using e-wallets

Table 3.4: Result of Outer Loading Analysis

	ATT	BI	GS	PEOU	PPS	PU	SI
ATT1	0.841						
ATT2	0.682						
ATT3	0.766						
ATT4	0.559						
ATT5	0.650						
ATT6	0.850						
ATT7	-0.383						
ATT8	0.039						
BI1		0.537					
BI2		0.734					
BI3		0.436					
BI4		0.559					
BI5		0.703					
BI6		0.680					
BI7		0.776					
BI8		0.348					
GS1			0.619				
GS2			0.610				
GS3			0.866				
GS4			0.519				
GS5			0.707				
GS6			0.801				
GS7			0.676				
GS8			0.789				
PEOU1				0.875			
PEOU2				0.607			
PEOU3				0.823			
PEOU4				0.624			
PEOU5				0.434			
PEOU6				0.647			
PEOU7				0.549			

PEOU8	0.199			
PPS1		0.668		
PPS2		0.768		
PPS3		0.759		
PPS4		0.669		
PPS5		0.614		
PPS6		0.771		
PPS7		0.610		
PPS8		0.358		
PU1			0.457	
PU2			0.609	
PU3			0.710	
PU4			0.542	
PU5			0.631	
PU6			0.839	
PU7			0.038	
PU8			0.353	
SI1				0.683
SI2				0.783
SI3				0.673
SI4				0.581
SI5				0.749
SI6				0.663
SI7				0.765
SI8				0.241

Based on the study by Memon and Rahman (2014), items with outer loading values greater than 0.7 is regarded highly satisfactory, loading values between 0.5 to 0.7 are deemed acceptable, while manifest items with outer loading values less than 0.5 should be removed. The

majority of the variables meet the requirement of being greater than 0.5. However, ATT7, ATT8, BI3, BI8, PEOU5, PEOU8, PPS8, PU1, PU7, PU8, and SI8 were removed since all of these are less than 0.5, therefore, only 45 items can be kept.

3.5.2.2 Cronbach's Alpha (CA)

Table 3.5: Result of Cronbach's Alpha (CA)

Variables	Number of items	Value of Cronbach's Alpha
Attitude of using e-wallets	8	0.661
Behavioral intention towards e-wallet	8	0.751
Government Support	8	0.852
Perceived Ease of Use	8	0.754
Perceived Privacy and Security	8	0.816
Perceived Usefulness	8	0.658
Social Influence	8	0.812

'Government Support' has the highest value of Cronbach's Alpha (0.852), followed by 'Perceived Privacy and Security" and 'Social Influence', with the value of 0.816 and 0.812, these three variables are stated at a good level. In addition, 'Perceived Ease of Use' and 'Behavioral Intention towards e-wallets' with the value of 0.754 and 0.751 are consider acceptable, while the 'Attitudes of using e-wallets'

and ‘Perceived Usefulness’ are counted as questionable, as both of their values fall within the range from 0.6 to 0.7.

3.5.2.3 Composite Reliability (CR)

Table 3.6: Result of Composite Reliability (CR)

Variables	Number of items	Value of Composite Reliability
Attitude of using e-wallets	8	0.776
Behavioral intention towards e-wallet	8	0.820
Government Support	8	0.886
Perceived Ease of Use	8	0.823
Perceived Privacy and Security	8	0.859
Perceived Usefulness	8	0.764
Social Influence	8	0.855

According to Henseler et al. (2009), the composite reliability (CR) value of variable which greater than 0.7 is stated as reliable and satisfactory. Table 3.6 showed that the CR value of all the variables is greater than 0.7, this means that the model is quite accurate in determining the latent variable.

3.5.2.4 Average Variances Extracted (AVE)

Table 3.7: Result of Average Variance Extracted (AVE)

Variables	Number of items	Value of Average Variances Extracted
Attitude of using e-wallets	8	0.421
Behavioral intention towards e-wallet	8	0.523
Government Support	8	0.499
Perceived Ease of Use	8	0.632
Perceived Privacy and Security	8	0.441
Perceived Usefulness	8	0.569
Social Influence	8	0.439

Average Variance Extracted values greater than 0.5 show that it may minimize inaccuracy variation by obtaining over half of the variations and demonstrating adequate internal consistency (Hair et al., 2011). When an AVE value is less than 0.5, this indicates that the inaccuracy variation is greater than the variations given by the model. Yet, in order to retain an AVE that is greater than 0.4, the value of CR must be 0.6 and above (Fornell & Larcker, 1981). Other than 'Attitude of using e-wallets,' 'Government support,' 'Perceived Privacy and Security,' and 'Social Influence,' all the variables are much more than 0.5. Meanwhile, all the factors have a CR score of 0.776, 0.886, 0.859, and 0.855, which is higher than 0.6. As a result, the framework shows an adequate internal consistency.

3.5.3Main study

Following the completion of the questionnaire, the primary research was conducted, with the objective of collecting 384 totally completed surveys. The major survey results were utilized to confirm the project's hypothesis.

3.5.3.1 Questionnaire Design for Main Study

The survey questionnaire is divided into two sections: A and B. The first part (Section A) focuses with the participant’s biographical info which includes the participant’s gender, age, education level, occupation status and period of using e-wallet. Section B included the questionnaire, which consisted of 56 statements about the IV and DV. A combination of 6 statement is designed for the DV, behavior intention towards e-wallet, whereas the other 39 statements were for the five IV, which were government support, social influence, perceived ease of use, perceived usefulness and perceived privacy and security (refer appendix 3.2).

Differences between each of these variables can be seen by a numerical analysis of the variables' order. It indicates the area that separates two things at an equal distance (Bhat, 2019). While displaying logical and orderly divisions, this scale has no true zero value. In the research, the popularly known Likert scale was usedIn Section B of the survey, a Likert scale is utilized to determine the level of agreement with the statement. Strongly disagree, disagree, neutral, agree, and strongly agree are each indicated by one to five in the standard five-level Likert scale. The 5-point Likert scale gives respondents the choice of remaining neutral rather than being required to select an option that does not accurately reflect their thoughts. It also offers greater insight into what respondents are thinking and feeling. Appendix 3.3 contains the source questions for each variable.

Table 3.8: Final Questionnaire Item Statement

	Variables	Questions
SI1	Social Influence	I feel like part of the community by using e-Wallet.
SI2		I use e-Wallet because the community encourages me to use it.
SI3		I use e-Wallet because everybody around me is using it.
SI4		I am using e-Wallet because my family members use it.
SI5		I am using e-Wallet because a salesperson is encouraging me to use it.
SI6		I am using e-Wallet because my friends usually use it.
SI7		People important to me have a positive attitude towards e-Wallet.
PEOU1	Perceive Ease of Use	Learning to use e-Wallet service is easy for me.
PEOU2		I rarely get frustrated when I use E-Wallet.
PEOU3		I find it easy to use E-Wallet services.
PEOU4		I rarely make errors when using the E-Wallet.
PEOU5		I like the fact that payments done through e-wallets require minimum effort.
PEOU6		Generally, using an e-Wallet is effortless.

PU1	Perceived usefulness	I find E-Wallet useful in the buying process.
PU2		E-Wallet services have improved my productivity.
PU3		E-Wallet services increase my effectiveness.
PU4		I think using e-Wallet app would enable me to complete transactions more quickly as compared to other traditional methods.
PU5		I believe e-Wallet app improves the quality of online transaction.
PPS1	Perceived privacy and security	I am quite confident making payments through e-Wallet apps. Eg. Boost, Touch'N Go, Grab Pay, etc.
PPS2		I believe technology used in e-Wallet apps is very secure.
PPS3		I believe e-Wallet apps has a potential to be safer than traditional payment options (such as credit cards, cash etc).
PPS4		I believe that transactions conducted through e-Wallet apps are secure.
PPS5		I believe the chances of losing money stored in e-Wallet are low.
PPS6		I would feel safe providing sensitive personal information over the e-Wallet platforms.
PPS7		I perceive secure using my credit/debit card information through e-Wallet platforms.
GS1	Government Support	During COVID-19 pandemic, the government encourages payment transaction using e-Wallets.

GS2		During COVID-19 pandemic, the government ensures e-Wallet's server facilities.
GS3		During COVID-19 pandemic, the government encourages payment innovation via e-Wallets.
GS4		During COVID-19 pandemic, the government controls e-Wallets payment operations.
GS5		During COVID-19 pandemic, the government provides digital incentives to e-Wallet's users.
GS6		During COVID-19, the government broadcasts a budget to upgrade the e-Wallet industry.
GS7		The government ensures that the e-Wallet server is stable during Covid-19.
GS8		Amid COVID-19, I found the stringent control lance from governance over e-Wallet system operations.
ATT1	Attitude	I am happy with the e-Wallet payment system.
ATT2		I am fascinated with the e-Wallet payment system.
ATT3		Overall, I am satisfied with the E-wallet.
ATT4		I am enjoying using the e-Wallet when shopping.
ATT5		I am happy with the internet connection when accessing the e-Wallet services.
ATT6		I am pleased with the e-Wallet application for its privacy reason.
BI1	Behavioral intention	I will use e-Wallets for payment transactions during COVID-19 pandemic.

BI2	I prefer using e-Wallets for payment transactions during COVID-19 pandemic.
BI3	If I had access to E-Wallet, I intend to use it.
BI4	I would recommend e-Wallet payment to others during Covid-19 pandemic.
BI5	I will continue to use e-Wallet to make payments even if the pandemic is over.
BI6	I plan to use the e-Wallet frequently.

3.5.3.2 Distribution of the main study's questionnaire

Questionnaires will be provided to respondents in the form of softcopy, google link will be provided through WhatsApp, WeChat, or any social messaging platform, as some of the respondents may wish to do on contactless. Respondents with e-questionnaires tend to be more willing to read the statement of the item precisely and carefully in order to give the most accurate answer which can represent their option.

All respondents who conduct the questionnaire will be briefed about the main purpose of the study and explain to respondent in order to let them understand what each item statement is measuring.

3.6 Data analysis tool

In this research, the software Smart PLS will be used for data collection analysis. Two types of analysis will be conducted based on the data collected, which are descriptive and inferential analysis.

3.6.1 Descriptive analysis

Frequency counts table in descriptive analysis shows the distribution of respondents' demographic information such as gender, age, education level, occupation status, and period of e-wallet usage. The table also can help researcher to analyze whether the collected data are complete or incomplete. In addition, cross tabulation analysis summarizes the relationship between demographic variables of categorical data. All the data collected will be transformed into statistics for ratio and internal scale measurement. The outcomes of the questionnaire in this study will be reported in a graph and a table using Smart PLS. The chart and statistics will be used to fully describe the outcomes in the next coming chapter.

3.6.2 Outer Loading Analysis (OLA)

Independent manifest reliability describes the variance of independent manifest related to endogenous constructs by computing generalized outer loadings of the latent variable, whereas variable validity is evaluated by convergent and discriminant validity (Memon & Rahman, 2014). In comparison to others, OLA is defined to be a higher typical solution for inner path model connections. It is also known as one of the reliability indicators. Based on the study by Memon and Rahman (2014), the rules of thumb state that items with outer loading values greater than 0.7 is regarded highly satisfactory, loading values between 0.5 to 0.7 are deemed acceptable, while manifest items with outer loading values less than 0.5 should be removed.

3.6.3 Cronbach Alpha (CA)

The reliability test for data collection is significant because it ensures that all measuring items are free of bias and that measurements are consistent throughout time and across different parts of the instrument. The reliability test will be carried out using CA. Reliability coefficients of CA are typically between 0 and 1.

Table 3.9 Scale of Cronbach's Alpha

Cronbach's Alpha value	Internal Consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

Source: Sharma. (2016).

According to Table 3.9, an alpha value of less than 0.5 is deemed unacceptable, while one between 0.5 and 0.6 is deemed poor. Alpha values between 0.6 and 0.7 are regarded as questionable, whereas those between 0.7 and 0.8 are considered acceptable. Alpha values between 0.8 and 0.9 are considered to be good, while values higher than 0.9 are considered to be excellent.

3.6.4 Composite Reliability (CR)

Cronbach alpha and composite reliability, which evaluate the reliability based on the interrelationship of the measured item variables, are the most generally utilized metrics for internal consistency (Hamid et al., 2017). The composite reliability takes into

consideration the fact that metrics have varying loadings and may be evaluated in the same approach as Cronbach's alpha (Henseler et al., 2009). Whatever reliability coefficient is chosen, an internal consistency reliability result over 0.7 in early phases of research and values above 0.8 or 0.9 in more developed stages of study are considered adequate, however a value below 0.6 shows a lack of reliability (Henseler et al., 2009).

3.6.5 Average Variance Extracted (AVE)

Average Variance Extracted (AVE), can be utilized as a guideline for determining the research framework's convergent validity. As AVE is at or higher than 0.5, the frameworks are deemed to include adequate convergent validity. This also means that an underlying factor can explain 50% or above of the variation of its measurement on averaging. It may be used to identify the indicator, which represents the variation level out of its corresponding observed factors owing to inaccuracy (Memon & Rahman, 2014). Furthermore, Chin (2010) claimed that an AVE value of 0.5 or higher indicates that half or above the manifest variable's variation may be deemed adequately convergent.

3.6.6 Heterotrait-Monotrait Ratio (HTMT)

The heterotrait-monotrait ratio (HTMT) approach was adopted to investigate the model's multicollinearity. According to Henseler et al. (2015), previous methods are difficult to adopt in variance-based SEM as it unable to identify a lack of discriminant validity in common study scenarios; thus, the researchers proposed another strategy focuses on multitrait-multimethod (MTMM) validity to identify a lack of discriminant validity by applying the HTMT. Henseler et al. (2015) discovered that responsiveness rates of HTMT are greater than the Fornell-Larcker Criterion and partial cross loadings, at 97.01% to 99.90%, 20.82% and 50.79%, respectively. Yusoff et al. (2019) mentioned that discriminant validity is consider unsatisfactory where the score is close to 1. According to the findings of Hamid et al. (2017), discriminant validity issues occurred when the HTMT value is close to 1. Conversely, other scholars, such as Gold et al. (2001) and Kline (2011), argued the issue of discriminant validity will arise if the value is more than 0.85.

3.6.7 Variance Inflation Factor (VIF)

The value of variance being exaggerated is tested and calculated by using the variance inflation factor (VIF).

Table 3.10: Scale of Variance Inflation Factors (VIF)

Value of VIF	Conclusion
VIF=1	Not correlated
1<VIF≤ 5	Moderately correlated
VIF>5	Highly correlated

Source: Daoud. (2017).

According to Table 3.10, the value of VIF equal to 1 stated there is no multicollinearity issue occur as it is not correlated, when the VIF score is over 1, less and equal to 5, it means the parameter is moderately correlated. Conversely, the multicollinearity issue will arise when the value of VIF is higher than 5, and the variable will be suggested to eliminate from the model.

3.7 Ethical Consideration

Ethical considerations are necessary for all research studies as all the conducting of research required not only honesty and integrity, but also expertise and diligence. Based on one of the university's research ethics and code of conduct,

all questionnaire/ survey, paramedical procedures, studies (whether prospective or retrospective) are required to obtain approval from Scientific and Ethical Review Committee (SERC). Researchers should ensure the confidentiality and privacy of personal information relating to the participants in research, safety of the research participants, and that the research fulfils any legal requirement in any research which involving human participations. The personal data protection statement (PDPS) (refer appendix 3.2) will attach together with the questionnaires in order to ensure the privacy and confidentiality of participants' information.

3.8 Conclusion

To conclude, the current research's approach has been properly devised and performed to strengthen the reliability and validity of the results. A pilot test was conducted to enhance internal consistency by having an academic professional review the prepared questionnaire. The questionnaire was then modified according to the professional's comments. Following that, validity test is performed by obtaining the assistance of 30 respondents to provide feedback on the modified questionnaire items included in the survey. This is performed to ensure that the obtained data accurately represents the targeting population's viewpoint or impression of the tested variables. As the study technique framework was thoroughly explained in this chapter. In the next chapter, data analysis and interpretation will be performed.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

To analyze data, 384 questionnaires were gathered from Gen Z in Sabah, Malaysia. The descriptive analysis of the participant regarding their demographic profile will be examined in the study. SMART PLS 4 was offered as an analytical technique in the study.

4.1 Filtering Question

The first section of the survey included two fundamental questions on digital wallets. Both questions must be completed in order to move to the next section of the survey.

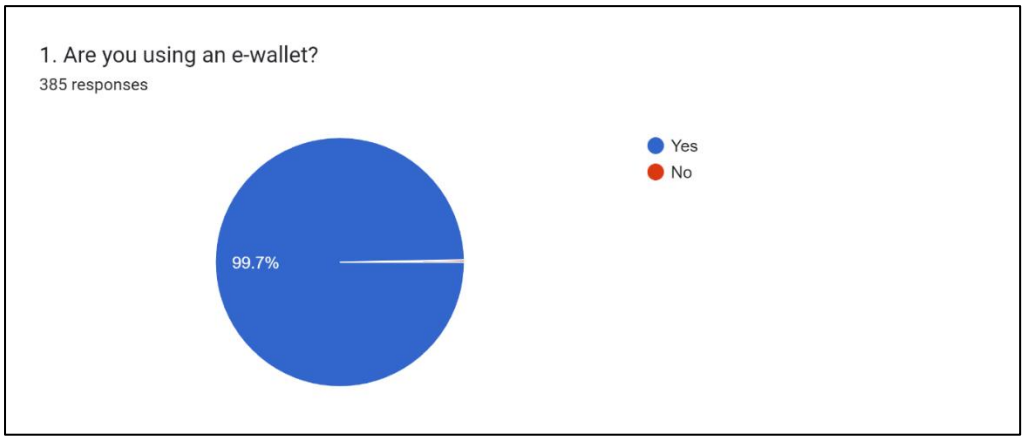


Figure 4.1: Responder Statistics

Source: Developed for the research

For this study, 385 sets of surveys were obtained in Sabah, Malaysia. The question concerns whether or not the participants use a digital wallet. The results revealed that 384 respondents used digital wallets. The invalid outcome has been removed from the analysis as this goal of the study is to explore at the factors that influence the adoption of digital wallets. As a result of the data gathered, 384 out of 385 respondents (99.7%) use digital wallets.

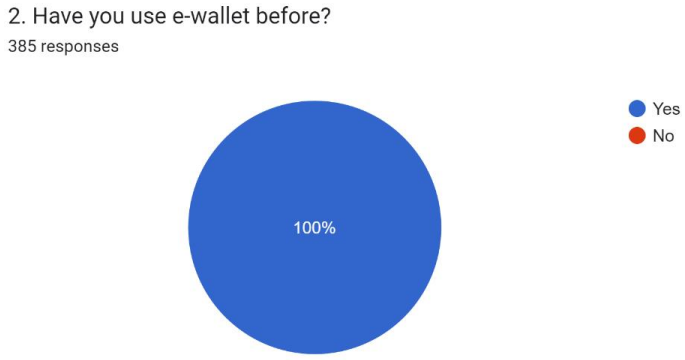


Figure 4.2: Data Filtration

Source: Developed for the research

In the second question, participants were asked if they had ever used digital wallets. According to the findings, 100% of the respondents have previously used a digital wallet. As a result, 385 surveys from Gen Z in Sabah, Malaysia who have used digital wallets in the past were collected since they are valid and correspond with the research purpose.

4.2 Descriptive Analysis

4.2.1 Gender

Table 4.1: Gender

	Frequency	Percentage (%)
Male	159	41.4%
Female	225	58.6%
Total	384	100%

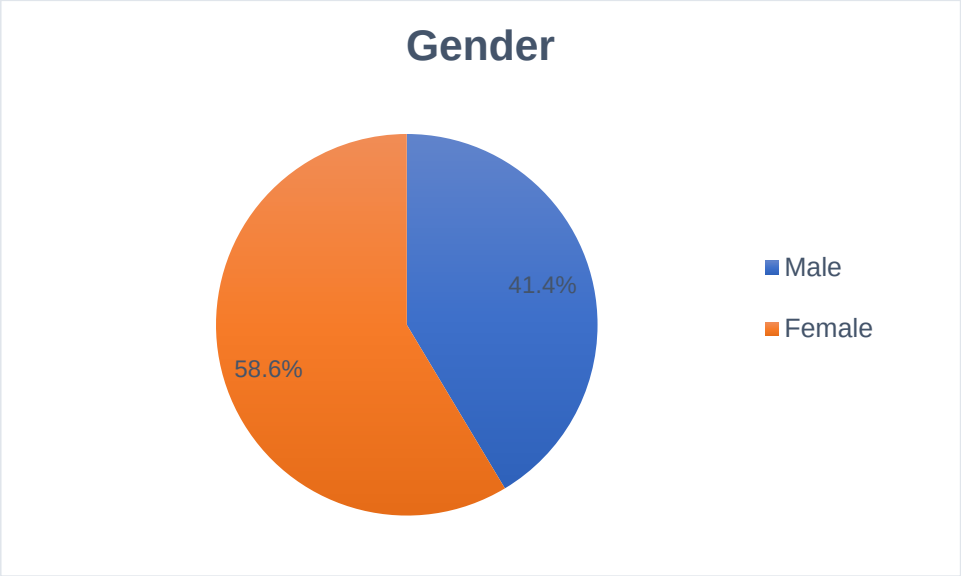


Figure 4.3: Gender

Table 4.1 indicates the gender of the participants. This study's target respondent is Gen Z, aged 18 to 25 in Sabah, Malaysia. According to Table, male respondents numbered 159 and account for 41.4% of all

participants, while female respondents numbered 225 and accounted for 58.6% of all survey participants.

4.2.3 Age

Table 4.2: Age

Age	Frequency	Percentage (%)
18	8	2.1%
19	10	2.6%
20	14	3.6%
21	36	9.4%
22	100	26.0%
23	62	16.1%
24	50	13.0%
25	104	27.1%
Total	384	100%

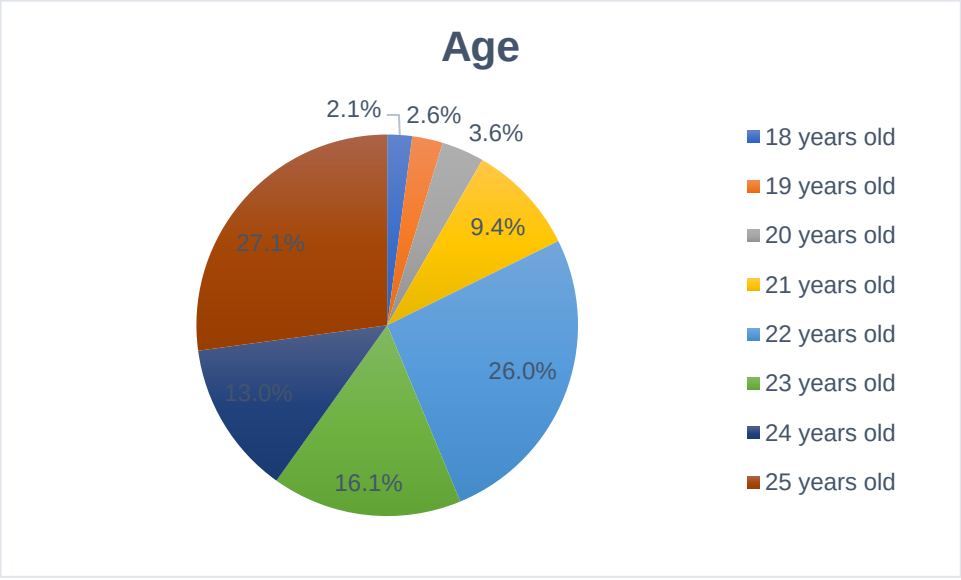


Figure 4.4: Age

The age of the participants is shown in Table 4.2. The 25-year-old age group had the largest percentage of participants (27.1%) out of the 8 age groups. The group of 22-year-olds, consisting of 100 participants, came in second with 26%, the highest proportion. Following that, 62 responders (16.1%) are under the age of 23. 24 years old has 50 respondents (13%), 21 years old has 36 respondents (9.4%), 20 years old has 14 respondents (3.6%), and 19 years old has 10 respondents (2.6%). The age of respondents under 18 years old is represented by 8 respondents, yielding the lowest percentage (2.1%).

4.2.3 Education level

Table 4.3: Education level

Education level	Frequency	Percentage (%)
SPM or lower	42	10.9%
Foundation/ Diploma	84	21.9%
Bachelor's Degree	256	66.7%
Master's degree	2	0.5%
Others	0	-
Total	384	100%

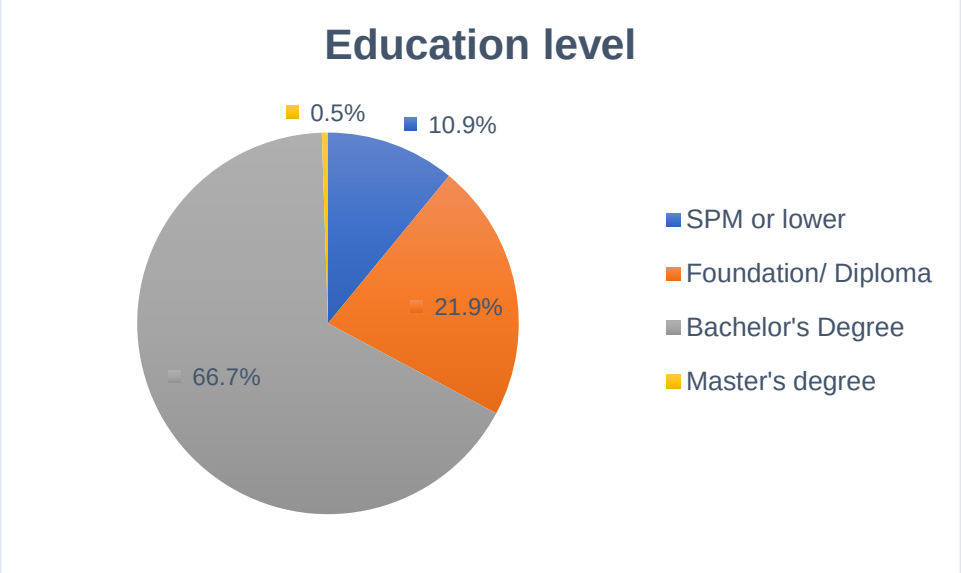


Figure 4.5: Education Level

The table 4.3 represents the participants' educational level. The majority of participants have a bachelor's degree, which includes 256 individuals (66.7%) responded, with 84 people (21.9%) having a foundation or diploma level of education. There are 42 individuals

(10.9%) who obtain SPM or lower education level, while 2 people (0.5%) acquire master's degree education level.

4.2.4 Occupation Status

Table 4.4: Occupation Status

Occupation Status	Frequency	Percentage (%)
Students	139	36.2%
Full-time	235	61.2%
Part-time	3	0.8%
Unemployed	7	1.8%
Total	384	100%

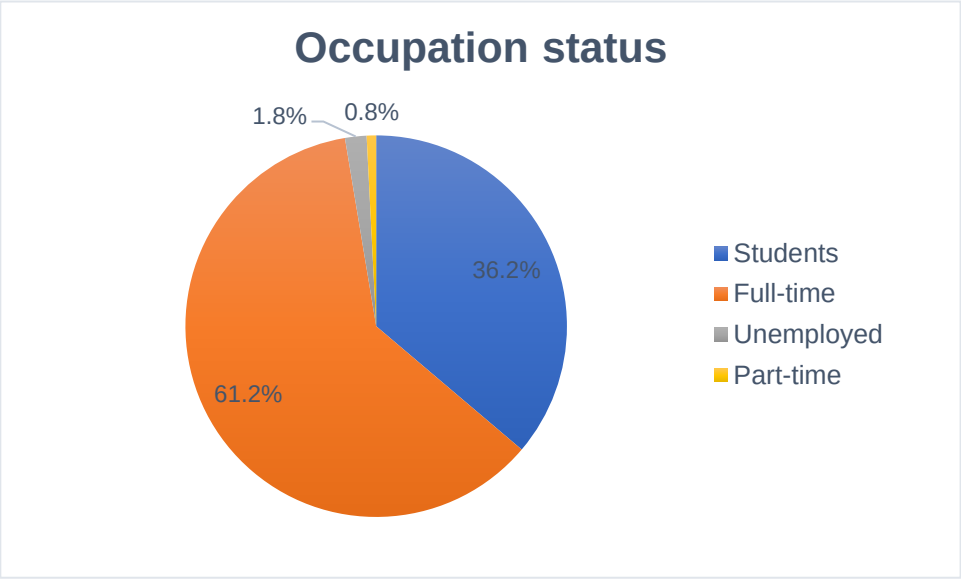


Figure 4.6: Occupation Status

The occupation status of participants is shown in Table 4.4. Full-time workers make up the largest participation category, with 238 persons

(61.2%). The remaining three groups are students (139 people, or 36.2%), unemployed (7 people, or 1.8%), and part-time (3 people, or 0.8%).

4.2.5 Period of using e-wallet services

Table 4.5: Period of using e-wallet services

Period of using e-wallet services	Frequency	Percentage (%)
Never	0	-
Less than 1 year	0	-
1-2 years	51	13.3%
2-3 years	104	27.1%
More than 3 years	229	59.6%
Total	384	100%

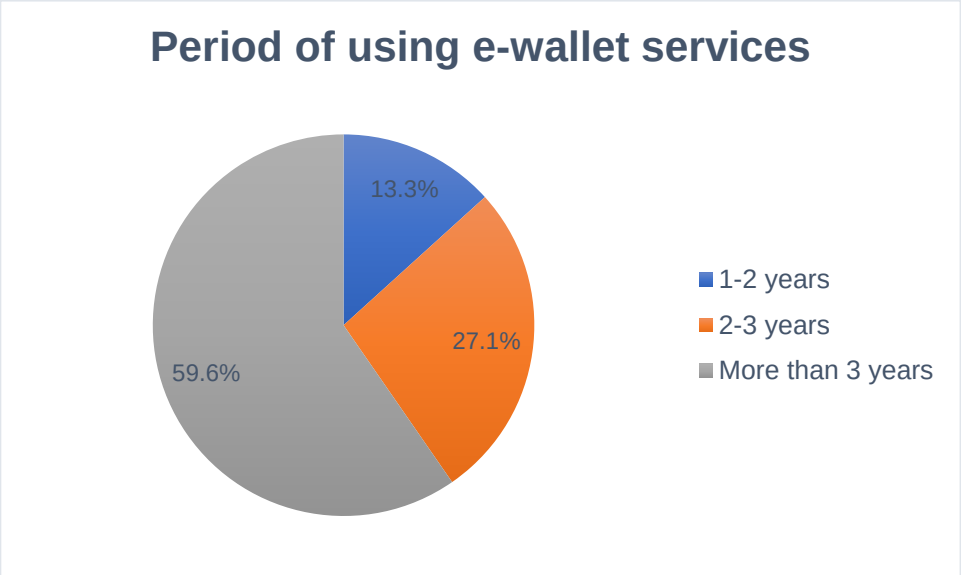


Figure 4.7: Period of using e-wallet services

Table 4.5 indicates how long users used e-wallet services. More than 3 years has the largest number of 229 responders at 59.6%. The second highest number is 27.1%, obtained from 104 responders representing 2-3 years. Following that, 1-2 years demonstrates 51 responders at 13.3%. Less than one year and never have the lowest percentage of 0 replies.

4.3 Partial least squares-Structural Equation Modeling (PLS-SEM)

4.3.1 Outer Loading Analysis

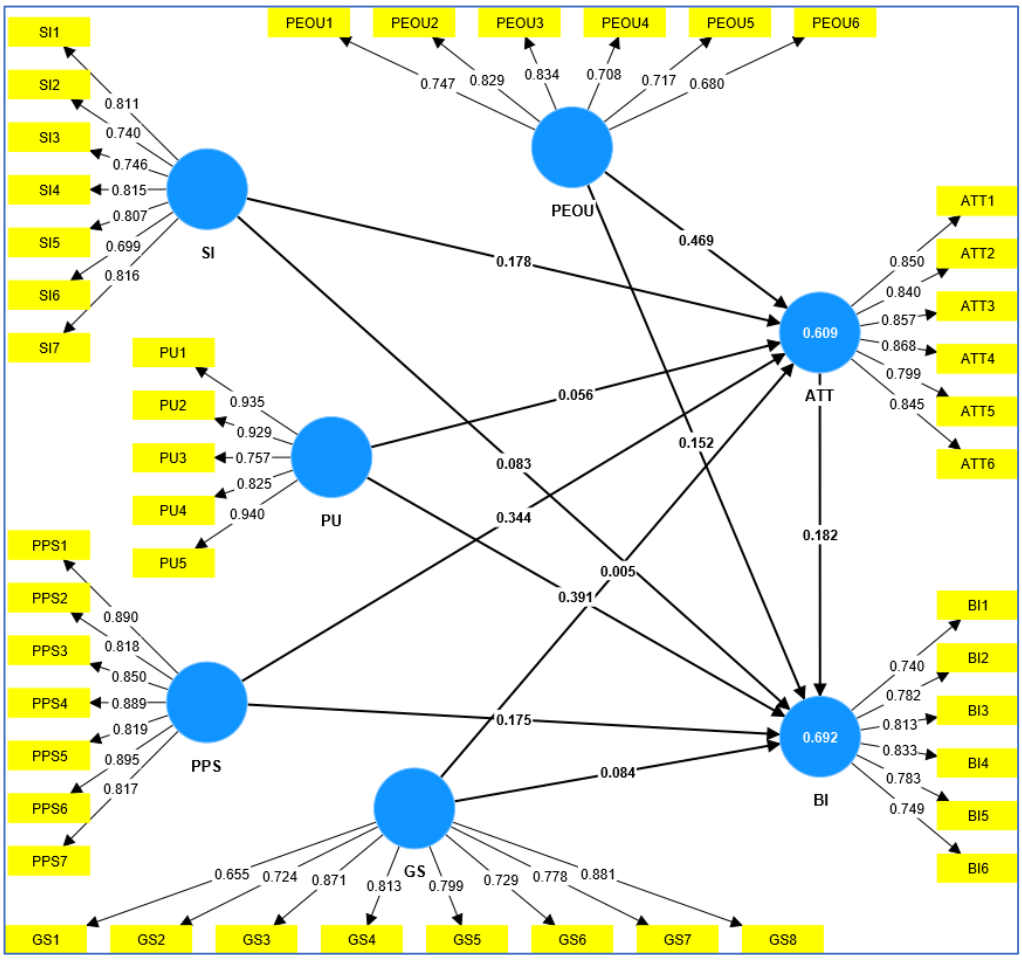


Figure 4.8: Diagram of Outer Loading Analysis

Note: BI is behavior intention toward e-wallets; SI is social influence; PEOU is perceived ease of use; PU is perceived usefulness; PPS is perceived privacy and security; GS is government support; ATT is attitude of using e-wallets.

Table 4.6: Outcome of Outer Loading Analysis

	ATT	BI	GS	PEOU	PPS	PU	SI
ATT1	0.850						
ATT2	0.840						
ATT3	0.857						
ATT4	0.868						
ATT5	0.799						
ATT6	0.845						
BI1		0.740					
BI2		0.782					
BI3		0.813					
BI4		0.833					
BI5		0.783					
BI6		0.749					
GS1			0.655				
GS2			0.724				
GS3			0.871				
GS4			0.813				
GS5			0.799				
GS6			0.729				
GS7			0.778				
GS8			0.881				
PEOU1				0.747			
PEOU2				0.829			
PEOU3				0.834			
PEOU4				0.708			
PEOU5				0.717			
PEOU6				0.680			
PPS1					0.890		
PPS2					0.818		
PPS3					0.850		
PPS4					0.889		

PPS5	0.819		
PPS6	0.895		
PPS7	0.817		
PU1		0.935	
PU2		0.929	
PU3		0.757	
PU4		0.825	
PU5		0.940	
SI1			0.811
SI2			0.740
SI3			0.746
SI4			0.815
SI5			0.807
SI6			0.699
SI7			0.816

Note: BI is behavior intention toward e-wallets; SI is social influence; PEOU is perceived ease of use; PU is perceived usefulness; PPS is perceived privacy and security; GS is government support; ATT is attitude of using e-wallets.

Based on the findings, the outer loading values for PU1, PU2, and PU5 are rated extremely satisfying among all variables, implying that it gives high reliability to the framework with values of 0.935, 0.929, and 0.940, respectively. Since the values range from 0.7 to 0.8, the outer loading value for BI is deemed satisfied. Memon and Rahman (2014) stated that outer loadings of more than 0.5 should be

maintained, whereas outer loadings of less than 0.5 should be deleted because it contributes less to the framework. All the variables have met the minimal threshold of 0.5, therefore all may be kept.

4.3.2 Reliability Test

4.3.2.1 Cronbach's Alpha (CA)

Table 4.7: Outcome of Cronbach's Alpha (CA)

Variables	Value of Cronbach's Alpha	Number of items	Level of reliability
Behavioral Intention toward e-wallet	0.874	6	Good
Attitude of using e-wallet	0.919	6	Excellent
Social influence	0.895	7	Good
Perceived ease of use	0.850	6	Good
Perceived usefulness	0.925	5	Excellent
Perceived privacy and security	0.939	7	Excellent
Government Support	0.909	8	Excellent

With a score of 0.939, perceived privacy and security has the greatest value of all the parameters. This demonstrated that perceived privacy and security is the most consistent indicator among all variables.

Furthermore, perceived usefulness (0.925), attitude of using e-wallets (0.919), and government support (0.909) with values greater than 0.9 are also indicated as excellent reliability levels. Aside from that, the values for e-wallet adoption, social influence, and ease of use are 0.874, 0.895, and 0.850, respectively. As a result, these three variables fall within the same range of reliability, which reveals a high level of reliability.

4.3.2.2 Composite Reliability (CR)

Table 4.8: Outcome for Composite Reliability (CR)

Variables	Value of Composite Reliability
Behavioral Intention toward e-wallet	0.875
Attitude of using e-wallet	0.923
Social influence	0.914
Perceived ease of use	0.864
Perceived usefulness	0.925
Perceived privacy and security	0.962
Government Support	0.913

With a score of 0.962, the variable "Perceived Privacy and Security" obtain the greatest value. The findings revealed that perceived privacy and security are more consistent than other factors. Furthermore, perceived usefulness, attitude of using e-wallet, social influence, and government support all demonstrated composite reliability values of 0.925, 0.923, 0.914, and 0.913, which are regarded as satisfactory. The behavioral intention toward e-wallets was followed by a composite reliability score of 0.875. Despite obtaining the weakest CR outcomes of all factors (0.864), perceived ease of use was still able to reach an adequate level of composite reliability.

In accordance with the composite reliability findings, the overall latent variables were greater than 0.7, indicating that it met the

adequate level. This finding demonstrated that the reliability of factors and observable indicators may be examined.

4.3.2.3 Average Variance Extracted (AVE)

Table 4.9: Outcome for Average Variance Extracted (AVE)

Variables	Value of Average Variance Extracted
Behavioral Intention toward e-wallets	0.615
Attitude of using e-wallet	0.712
Social influence	0.605
Perceived ease of use	0.570
Perceived usefulness	0.775
Perceived privacy and security	0.731
Government Support	0.615

Perceived usefulness has the greatest AVE value including all variables, with a score of 0.775. Whereas 'perceived ease of use' gets a lowest AVE outcome (0.570) across all factors, it is followed by social influence, with an AVE score of 0.605, government support and behavioral intention toward e-wallets, with an AVE score of 0.615, and attitude toward using an e-wallet, which results in an AVE score of 0.712. Furthermore, the AVE score of perceived privacy and security is 0.731. As shown by table 4.9, all of the variables are much more than half with a range between 0.570 and 0.775. The above

findings revealed that AVE could be utilized to explore convergent validity in this report. As a result of these parameters, convergent validity is satisfactory.

4.3.3 Discriminant Validity

4.3.3.1 Heterotrait-Monotrait Ratio (HTMT)

Table 4.10: Outcome of Heterotrait-Monotrait Ratio (HTMT)

	ATT	BI	GS	PEOU	PPS	PU
ATT						
BI	0.755					
GS	0.636	0.702				
PEOU	0.743	0.789	0.671			
PPS	0.448	0.435	0.495	0.142		
PU	0.624	0.817	0.589	0.830	0.218	
SI	0.628	0.624	0.608	0.785	0.235	0.559

Note: BI is behavior intention toward e-wallets; SI is social influence; PEOU is perceived ease of use; PU is perceived usefulness; PPS is perceived privacy and security; GS is government support; ATT is attitude of using e-wallets.

According to Henseler et al. (2015), HTMT is more sensitive to the lack of discriminant validity than the Fornell-Larcker Criterion and partial cross loadings. According to Kline (2011), when the HTMT score exceeds 0.85, discriminant validity is deemed insufficient, however, scores less than 0.90 are considerable. According to these results, 100% of the outcomes are less than 0.85, proving how effectively the approach works.

4.3.3.2 Variance Inflation Factors (VIF)

Table 4.11: Outcome of Variance Inflation Factors (VIF)

	ATT	BI
ATT		2.548
GS	2.329	2.329
PEOU	3.300	3.863
PPS	1.390	1.680
PU	2.314	2.322
SI	2.144	2.223

Note: BI is behavior intention toward e-wallets; SI is social influence; PEOU is perceived ease of use; PU is perceived usefulness; PPS is perceived privacy and security; GS is government support; ATT is attitude of using e-wallets.

Since all the VIF values are larger than 1 but less than 5, this may infer that the indicators are not closely correlated, the framework is appropriate, and no indicators need to be removed.

4.3.4 Bootstrapping

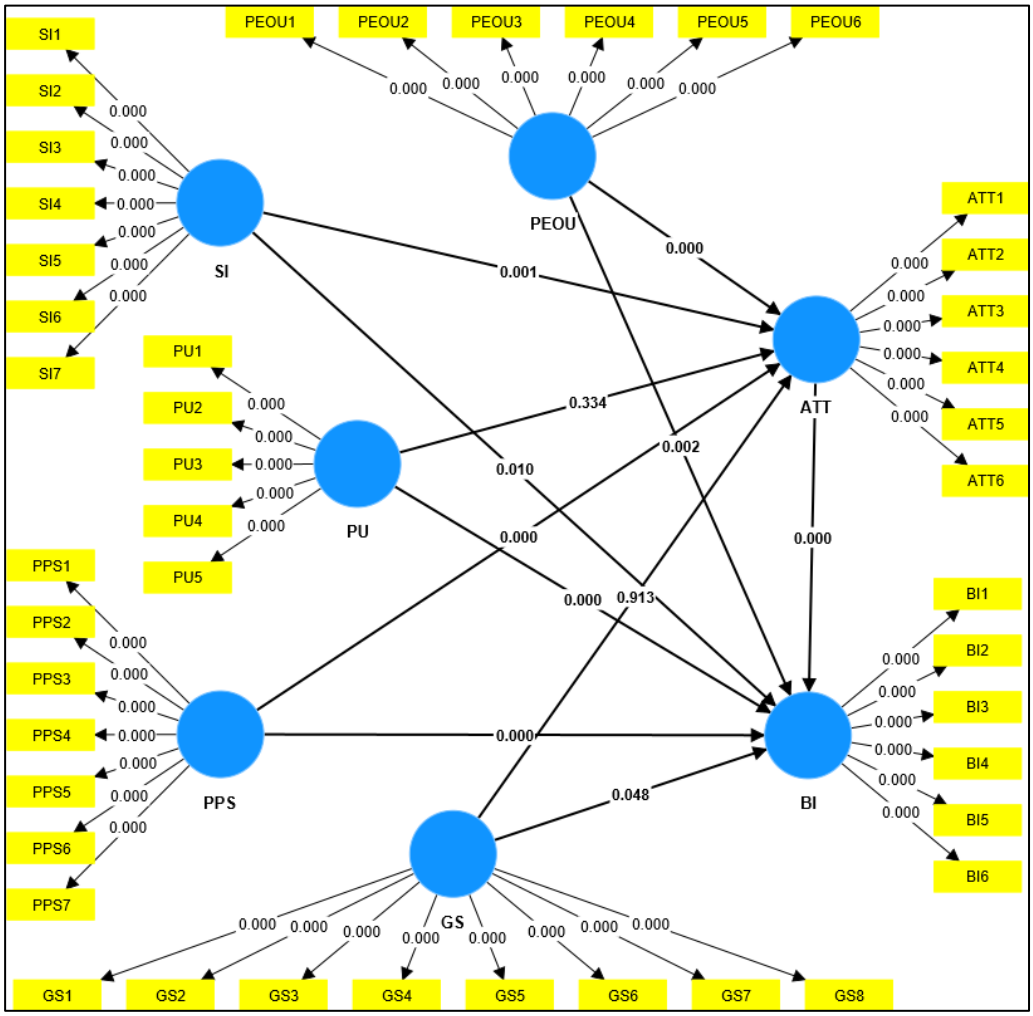


Figure 4.9: Diagram of Bootstrapping

Note: BI is behavior intention toward e-wallets; SI is social influence; PEOU is perceived ease of use; PU is perceived usefulness; PPS is perceived privacy and security; GS is government support; ATT is attitude of using e-wallets.

4.3.4.1 P-value, Path Coefficient (Direct effect)

Table 4.12: Outcome of Bootstrapping, Path Coefficient

		Original sample (O)	STDEV	T-statistics	P-value	Result (NS/S)
H_1	SI → ATT	0.178	0.053	3.381	0.001	S
H_2	PEOU → ATT	0.469	0.050	9.365	0.000	S
H_3	PU → ATT	0.056	0.058	0.967	0.334	NS
H_4	PPS → ATT	0.344	0.033	10.314	0.000	S
H_5	GS → ATT	0.005	0.042	0.110	0.913	NS
H_6	ATT → BI	0.182	0.039	4.672	0.000	S
H_7	SI → BI	0.083	0.032	2.590	0.010	S
H_8	PEOU→ BI	0.152	0.048	3.151	0.002	S
H_9	PU→ BI	0.391	0.043	9.116	0.000	S
H_{10}	PPS → BI	0.175	0.042	4.152	0.000	S
H_{11}	GS → BI	0.084	0.043	1.977	0.048	S

Consider that the p-value has a scale of significance of 0.05. Table illustrates the association between PEOU, PPS, SI, and ATT, as well as GS, PEOU, PPS, PU, SI, and BI, with results ranging from 0.000 to 0.048, all of which are below 0.05. This suggests that all these factors are related to ATT and BI (DV). This also implies that there is a strong connection between attitudes and behavioral intentions toward e-wallets. On the other hand, the p-values of the GS, PU, and ATT, are greater than the significant scale, being 0.913 and 0.334, respectively. The studies revealed that government support, perceived usefulness, and attitude of using e-wallets are insignificantly related.

In addition, table 4.12 indicates the path coefficient for each parameter. All the indicators were revealed with a positive coefficient, implying that DV will be adjusted if the IV is raised by one degree. When the path coefficient's value is higher than another factor, the parameters have a higher impact on the DV. According to the results, the PEOU has a greater effect on the ATT, which indicates that if the PEOU raises by one degree, the ATT will raise by 0.469 degrees. While ATT raises by 0.005 degrees for every degree increase in GS, GS has the minimum effect on ATT.

4.3.5 Mediation Analysis

A mediation study was carried out to determine the effect of ATT in mediating the relationship between SI, PEOU, PU, PPS, GS, and BI.

Table 4.13: Outcome of Total Effect

	P-value	Result
ATT → BI	0.000	Significant
GS → ATT	0.913	Not significant
GS → BI	0.050	Not significant
PEOU → ATT	0.000	Significant
PEOU → BI	0.000	Significant
PPS → ATT	0.000	Significant
PPS → BI	0.000	Significant
PU→ ATT	0.334	Not significant
PU→ BI	0.000	Significant
SI → ATT	0.001	Significant
SI → BI	0.002	Significant

Consider that the p-value has a scale of significance of 0.05. According to Table 4.13, the total effect of SI, PEOU, PU, and PPS on BI was significant, but the total effect of GS on BI was insignificant. The total effect is also known as the influence of IV on DV in the absence of the mediator. In other words, without the presence of ATT, the influence of SI, PEOU, PU, and PPS on BI was significant.

Table 4.14: Outcome of Total Indirect Effects

	P-value	Result
GS → BI	0.914	Not significant
PEOU → ATT	0.000	Significant
PPS → BI	0.000	Significant
PU → ATT	0.350	Not significant
SI → BI	0.003	Significant

Consider that p-value has a scale of significance of 0.05. According to Table 4.14, the total indirect effect of SI, PEOU, and PPS on BI was significant, but the total indirect effect of GS and PU on BI was insignificant. The total indirect effect is often referred to as the influence of IV on DV via the mediating factor. In other words, the influence of SI, PEOU, and PPS on BI was significant with the presence of ATT, but the impact of GS and SI on BI was insignificant with the inclusion of ATT.

Table 4.15: Outcome of mediation analysis

	Results
SI → ATT → BI	ATT partially mediating SI to BI
PEOU → ATT → BI	PEOU partially mediating SI to BI
PU → ATT → BI	No mediating effect
PPS → ATT → BI	PPS partially mediating SI to BI
GS → ATT → BI	No mediating effect

Since the indirect effect of GS and PU on BI was insignificant, however the direct effect of GS and PU on BI was significant, and the study concluded that GS and PU had a direct, non-mediating effect on BI. In contrast, the indirect effect of PEOU, PPS, and SI on BI was significant, as was the direct effect of these three variables on BI. This can be interpreted as partial mediation, which means that a part of the impact of PEOU, PPS, and SI on BI is mediated by ATT, while PEOU, PPS, and SI still explain a part of BI independently of ATT.

4.4 Conclusion

Data analysis was used to evaluate the relationship between the dependent variable and the independent variable. The major indications for data analysis were descriptive analysis, outer loading analysis, reliability test, and discriminant validity. The development of the outcome will be detailed in the next chapter.

CHAPTER 5: DISCUSSIONS, CONCLUSION, AND IMPLICATIONS

5.0 Discussion of Major Findings

Table 5.1: Acceptance of hypothesis statement

Hypothesis	Result (Accepted/ Rejected)
H_1: Social influence is positively related to attitudes of using e-wallets.	α: 0.05 P-value= 0.001 (<0.05) H_1 is accepted.
H_2: Perceived ease of use is positively related to attitudes of using e-wallets.	α: 0.05 P-value= 0.000 (<0.05) H_2 is accepted.
H_3: Perceived usefulness is positively related to attitudes of using e-wallets.	α: 0.05 P-value= 0.334 (>0.05) H_3 is rejected.
H_4: Perceived privacy and security are positively related to attitudes of using technology.	α: 0.05 P-value= 0.000 (<0.05) H_4 is accepted.

H_5: Government support is positively related to attitudes of using e-wallets.	α: 0.05 P-value= 0.913 (>0.05) H_5 is rejected.
H_6: Attitudes mediate the relationship between social influence, perceived privacy and security, government support, and behavioral intention towards e-wallets.	α: 0.05 P-value= 0.000 (<0.05) H_6 is accepted.
H_7: Social Influence is positively related to behavioral intention towards e-wallets.	α: 0.05 P-value= 0.010 (<0.05) H_7 is accepted.
H_8: Perceived ease of use is positively related to the behavior intention towards e-wallets.	α: 0.05 P-value= 0.002 (<0.05) H_8 is accepted.
H_9: Perceived usefulness is positively related to the behavior intention towards e-wallets.	α: 0.05 P-value= 0.000 (<0.05) H_9 is accepted.
H_{10}: Perceived privacy and security are positively related to the behavior intention towards e-wallets.	α: 0.05 P-value= 0.000 (<0.05) H_{10} is accepted.
H_{11}: Government support is positively related to the behavior intention towards e-wallets.	α: 0.05 P-value= 0.048 (>0.05) H_{11} is accepted.

5.0.1 Relationship between social influence and attitude of using e-wallets

H_1 is accepted, as indicated by the outcome. There is a significantly positive relationship between social influence and attitude of using e-wallets. This means that the presence or behavior of others alters an individual's attitudes regarding e-wallets. This outcome was supported by Kadir et al. (2022) and Lee and Jais (2022). In this study, a research model was designed and tested to analyze the attitude as a mediator on e-wallet usage in Malaysia. This study found that social influence has a positive and significant association with attitude of using e-wallet. As Malaysians are compelled to stay at home due to the 'nationwide lockdown,' users who have expressed their opinions and experiences with mobile wallet services on internet sites and media platforms play a vital role in influencing others to connect with e-wallets (Kadir et al., 2022). However, Alfany et al. (2019) and Malik et al. (2019) disagreed with this finding. Previous research has indicated the association between social influence and attitude of using e-wallets is insignificantly related. Nevertheless, since these studies were designed for people from other countries, most of the findings may not be valid in Malaysia owing to differences in cultural, attitudinal, and uniqueness.

5.0.2 Relationship between perceived ease of use and attitude of using e-wallets

The finding revealed that H_2 is approved. There is a significant positive relationship between perceived ease of use and attitude of using e-wallets. This shows that the easier it is to use a digital wallet, the more favorable the attitude toward e-wallets. This result was supported by Ariffin et al. (2021), Trivedi (2016), Himel et al. (2021), and Bhatt et al. (2021), where PEOU was founded to have a significant influence on attitude of using e-wallets. According to Bhatt et al. (2021) and Ariffin et al. (2021), they mentioned that the digital wallet service is simple to use and helpful in daily life, enabling users to conduct faster transactions of different payments, is equally crucial in determining their attitude towards the digital wallet service. Furthermore, Himel et al. (2021) stated that, all else being constant, customers who perceive the different features and functions of mobile financial services to be simpler and more intelligible have a positive attitude toward mobile financial services.

5.0.3 Relationship between perceived usefulness and attitude of using e-wallets

H_3 is rejected, as mentioned in the outcome. This indicates the connection between perceived usefulness and the attitude of using e-wallet is minor. Perceived usefulness might not even influence customers' attitudes toward e-wallet adoption. However, this result did not agree by Trivedi (2016), Daragmeh et al. (2021), Bhatt et al. (2021), Himel et al. (2021), and Chawla and Joshi (2020). These past studies had concluded that the perceived usefulness has a significant association to the attitudes towards digital wallet. The reason that the results contradicted previous outcomes might be due to the fact that the research was conducted in different countries. This indicates that the prior finding might not be valid to Malaysia because of differences in backgrounds, mindsets, and uniqueness. Additionally, this study was conducted among Gen Z in Sabah, Malaysia, and the majority of them agreed that perceived usefulness is not the most important factor influencing their attitude to adopt digital wallets.

5.0.4 Relationship between perceived privacy and security and attitude of using e-wallets

Based on the findings, H_4 is approved since the p-value is less than 0.05. There is a significant positive relationship between perceived privacy and security and attitude of using e-wallets. The result indicates that the higher the perceived privacy and security, the greater the confidence in the digital wallet service, which reflects a favorable attitude toward adoption. In other word, it means that perceived privacy and security is one of the main factors that will affect the attitude of Gen Z in Sabah, Malaysia toward mobile wallet adoption during this pandemic. It was supported by Singh and Kalra (2021), Chawla and Joshi (2020), as well as Amoroso and Watanabe (2012), who conducted a study in India and Japan, respectively, indicating that attitudes toward digital wallets are influenced by perceived privacy and security. According to Singh and Kalra (2021), there is no significant different in the security concerns of various age groups, implying that security concerns are equally relevant for all age ranges.

5.0.5 Relationship between government support and attitude of using e-wallets

The outcome indicated that H_5 was rejected. There is no significant association between government support and attitude of using e-wallets. This indicates that the Malaysian government's attempts to encourage digital wallet use through e-Tunai, e-Penjana, and e-Pemula incentives will not have much effect on consumer attitudes regarding e-wallets. However, this result was contradicted with the study of Lee and Jais (2022), Phuah et al. (2018), and Hossain et al. (2020). Previous research indicated that the government support and the attitudes of using e-wallet is significantly associated. According to Hossain et al. (2020), the government of Bangladesh has introduced different programs and distributed a huge budget to prioritize the use of ICT for digitalized banking in order to achieve the Digital Vision 2021; thus, government support can influence consumer attitudes toward digital wallet adoption. Furthermore, the study by Lee and Jais (2022) focused on consumers who embraced digital wallets in the aftermath of the Covid-19 outbreak. They stated that government support aided in the acceleration of Malaysia's transition to a cashless society. This reveals that the prior research may not be applicable to Malaysia because of variances in cultures and perspectives. Furthermore, since this survey was done among Gen Z in Sabah, Malaysia, and the majority of them have been using digital wallets for more than 3 years, government support may not be the most

significant factor that influences their attitudes to utilize digital wallets.

5.0.6 Attitude mediates the relationship between social influence, perceived privacy and security, government support, and behavioral intention towards e-wallets.

H_6 is accepted, as indicated by the finding. The result showed that attitude mediates the relationship between social influence, perceived privacy and security, government support, and behavioral intention towards e-wallets. This indicates that an individual's attitude about utilizing digital wallets affects their behavioral intention to adopt. Putit et al. (2021), Chawla and Joshi (2020), Bhatt et al. (2021), Shin (2009), Amoroso and Watanabe (2012), and Himel et al. (2021) all agreed with the findings. Putit et al. (2021) discovered that consumers' attitudes can impact their decision to use e-wallet payments, especially during the rapid developments of the COVID-19 epidemics; the more positive the attitude toward digital wallets, the more likely the consumer's behavior intention to adopt digital wallets. Additionally, Himel et al. (2021), Bhatt et al. (2021), and Amoroso and Watanabe (2012) found that PU, PEOU, and PPS positively affect customer attitude and behavioral intention toward e-wallets, customers who have a favorable underlying attitude towards the use of the mobile wallet, which supports a powerful desire to utilize it. In other words, PU, PEOU, and PPS could influence attitude, which in turn influences consumer usage intention.

5.0.7 Relationship between social influence and behavioral intention towards e-wallet

The results showed that H_7 was accepted. There is a significant positive relationship between social influence and behavioral intention towards e-wallets. When numerous customers expressed their opinions and experiences with mobile wallet services on internet sites and media platforms, the results showed that consumers would use for the service. This finding was supported by the past studies of Teo et al. (2020), Chew et al. (2021), Azman et al. (2021), and Nag and Gilitwala (2019). According to Teo et al. (2020), the encouragement or support of their friends, colleagues, or families influences their intention to utilize e-wallets. When the government offered incentives for Malaysians to utilize digital wallets by e-Tunai, e-Penjana, and e-Pemula, the effect of variables, especially social influence, enhanced adoption. Besides, Azman et al. (2021) and Chew et al. (2021) which mentioned social influence is a significant factor to influence the digital wallet adoption, also stated that individuals in the surroundings who are important to them such as families, friends, relative and others will influence their intention to use a digital wallet.

5.0.8 Relationship between perceived ease of use and behavioral intention towards e-wallet

H_8 is accepted, as indicated by the outcome. There is a significant positive relationship between perceived ease of use and behavioral intention towards e-wallets. The findings found out that if an e-wallet is simple to use, Gen Z in Sabah, Malaysia is more likely to use it. The significant influence of perceived ease of use towards digital wallet adoption is in line with previous research on e-wallet adoption-related studies (Trivedi, 2016; Singh, 2019; Shankar & Datta, 2018; Karim et al., 2020; Chua et al., 2020; Singh et al, 2020). According to Trivedi (2016), PEOU is one of the main variables that influence digital wallet acceptance since customers expect a technological advance to make their lives easier and transactions faster. Moreover, Karim et al. (2020) and Chua et al. (2020) indicated that the association between PEOU and behavioral intention towards digital wallets is strongly associated, implying that the simpler an e-wallet is to use, the more beneficial it may be. Furthermore, Shankar and Datta (2018) also stated that customers will only use digital wallets if they find it easier to use than other traditional ways of payment transactions.

5.0.9 Relationship between perceived usefulness and behavioral intention towards e-wallet

H_9 is accepted, as indicated by the finding. The result showed the relationship between perceived usefulness and behavioral intention towards e-wallet is significantly related. This indicates that the higher PU of a digital wallet will lead to a positive result on consumers' intention to adopt it. Amin (2009), Trivedi (2016), Chawla and Joshi (2020), Chua et al. (2020), Tan et al. (2020), and Shankar and Datta (2018) all agreed with the findings. According to Shankar and Datta (2018), perceived usefulness is vital because consumers will accept digital wallets only if they find it beneficial to meet their requirements. They will also change to the next system for conducting financial transactions if they feel more advantageous at a lower or comparable cost. Furthermore, Amin (2009) and Chawla and Joshi (2020), who discovered a significant positive association between PU and behavioral intention towards e-wallet, stated that customers' desire to use digital wallet is stronger when they believe digital wallet is beneficial.

5.0.10 Relationship between perceived privacy and security and behavioral intention towards e-wallet

Based on the findings, H_{10} is approved. There is a significant positive relationship between perceived privacy and security and behavioral intention towards e-wallets. According to the findings, the better the perceived privacy and security, the more likely consumers are to use digital wallet services. Matemba and Li (2018), Soodan and Rana (2020), Amoroso and Watanabe (2012), Deka (2020), and Shin (2009) all agreed on this finding. According to a study by Deka (2020), the behavioral intention of young generation to adopt digital wallets is affected by perceived security. Businesses are advised to consider consumers' safety concerns, such as ensuring adequate protection against customer data and account information, which could direct to increased use of mobile wallets among youngsters in the long run. Furthermore, Soodan and Rana (2020) said that concerns about privacy and security related to internet and user identification network services are crucial in generating usage intentions. The findings also show that customer safety concerns have a larger impact on intention formation than the fear of losing personal info.

5.0.11 Relationship between government support and behavioral intention towards e-wallet

H_{11} is accepted, as mentioned in the outcome. This indicates that the association between government support and the behavioral intention towards e-wallet is significantly related. In other words, government support will influence customers' intention on adoption of digital wallet. The finding is back by the previous research (Si, 2022; Ojo et al., 2022; Chan et al., 2021). According to Ojo et al. (2022), government support has a significant impact on mobile wallet user acceptance since the user feels safe and protected adopting e-wallets because they understand the government is highly supportive of the action plan in terms of working with the industry and favourable policy implementation. In fact, the government has implemented appropriate activities such as e-Tunai, e-Penjana, and e-Pemula to encourage individuals to decrease direct contacts, hence limiting the transmission of virus. This also demonstrates that the Malaysian government's incentives and efforts have effectively influenced generation Z in Sabah, Malaysia to use e-wallets. Furthermore, Chan et al. (2021) noted that when the government encourages mobile wallet, Malaysian youngsters are more likely to use it.

5.1 Implication of Study

Several implications may be given to application developers, the government, and academic scholars for further research on this issue. It enables them to better understand the factor affecting Gen Z's behavioral intention toward digital wallets amid the Covid-19 epidemic in Malaysia. As a result, regulations, marketing tactics, and suggestions for further studies may be produced in more sophisticated ways.

To begin, the study's findings have assisted application developers by providing them with a critical perspective for designing and implementing digital wallet services that will enhance service acceptance. They may employ essential factors such like usefulness, privacy, ease of use, and security to create a reliable digital wallet application for potential users, since when the e-wallet is simpler to use, more Gen Z will use it as a form of payment. Furthermore, application developers may enhance payment methods that favor the efficiency and easiness of utilizing digital wallets, which would favor potential customers. Developers should be at the forefront in highlighting the necessity of encryption in a digital wallet system that safeguards all private info. They can take use of this opportunity to establish confidentiality and protection regulations so that people are reminded of the importance of securing their personal data from private information. This enables the consumer to accept a perception of asymmetric encryption without the risk of lost and stolen it.

In addition, there are also some implications for government. According to this research, government support is a crucial component in boosting the use of digital wallets. As a result, the government has promoted Malaysians to adopt digital wallets by offering rewards and incentives throughout this Covid-19 epidemic. Furthermore, the government should look into collaborating with digital wallet companies to consistently boost the use of digital wallets through appealing schemes provided to both consumers and businesses. For example, the government may offer additional efforts like rebates and coupons to encourage more consumers to use digital wallets in their daily tasks.

Lastly, scholars and researchers who intend to explore digital wallets in the hereafter may reap from this finding. According to the study, perceived privacy and security, ease of use, and social influence may significantly affect users' attitudes toward digital wallets, while the same three factors, along with government support and perceived usefulness, will influence users' behavioral intentions toward digital wallets. In the future, scholars and researchers may use certain parameters as a baseline to either eliminate unnecessary parameters or add new parameters to evaluate digital wallet use. Furthermore, scholars and researchers might use this study as a reference for further studies because there has been minimal research on digital wallets during this pandemic in Sabah, Malaysia.

5.2 Limitation of Study

Various limitations were discovered throughout this study. Academic scholars in the future may take these constraints into account in order to enhance their outcomes. First and foremost, the data collected for this study came from randomly surveys distributed to Gen Z in Sabah, Malaysia, with no gender differences. The outcomes also showed the survey consisted of 41.4% males and 58.6% females' participants. Different genders may have different viewpoints and acceptance of digital wallets; hence, the factors that affect their attitudes and intentions toward digital wallets may differ. As a consequence of these limitations in this research, the outcomes generated from this research might not be representational of the perspectives of all Gen Z in Sabah, Malaysia; hence, the precision of the findings would be lowered.

Secondly, the factual information for this research was gathered from generation Z, whose ages range from 18 to 25 years old. The outcome of this research could only reflect the views and behavioral intentions of the majority of Gen Z, not those of the general population. Digital wallets are aimed at people of all age groups, not just the digital natives. Consumers of various ages will also have various opinions and attitudes. As a result, these individuals' adoption or perception of digital wallets may differ from the viewpoints of survey participants.

Additionally, the information is gathered through completely random surveys distributed to Gen Z in the Penampang and Kota Kinabalu areas. The findings of this study may only indicate the perspectives and behavior intentions of a large percentage of Gen Z in particular locations, not those of Sandakan, Kudat, Tawau, and other areas. A person's viewpoint and willingness to use a digital wallet will shift over time. In other words, people's minds might be shaped by their previous viewpoints, experiences, attitudes, and assumptions. As a result, the degree of digital wallet adoption and the factors that influence their use may change as time passes, this also indicated that the outcome could be less precise in the future.

5.3 Recommendation of Study

In a nutshell, there are several recommendations for this research that academic scholars in the future might use to strengthen the restrictions. To begin, the academic scholars in future are advised to broaden the framework of the study through providing additional parameters such as gender in order to obtain more detailed information and enhance the study. Gender is mentioned as one of a key determinant when consumers are attempting to utilize a digital wallet as the reasons that lead female users to adopt a digital wallet may differ from those that motivate male users. Hence, this parameter could be included in the research

process as it might impact to the outcomes, resulting in more precise and highly reliable results.

Besides, academic scholars are encouraged to increase the range and generation of forthcoming survey respondents. The age group of the survey questionnaire might well be broadened by introducing additional generations such as generation Y, X, and baby boomers. People of various age groups have lived up under different circumstances, which may impact their attitude and access to digital wallet systems. Hence, there may be some fluctuation in the level of acceptability across various age groups.

Furthermore, in order to remove the constraint of the limited area of participants in the study, the data collected should comprise individuals from various areas in Sabah, Malaysia. In future research, academic scholars might not only consider Penampang and Kota Kinabalu as their targeted areas, but also Kudat, Sandakan, Kota Belud, Tawau, and other areas. Individuals living in different areas will have unique opinions and thoughts about digital wallet services. Hence, it is recommended that various areas of participants should be included within their dimensions to enhance the findings more reliable and specific.

5.4 Conclusion

To summarize, digital wallet usage among Generation Z in Sabah, Malaysia is acceptable and needs to be enhanced. In comparison to brick-and-mortar businesses, digital wallets are now the dominant trend in completing cashless interactions in developed countries. As a result, governments and e-wallet organizations may give knowledge and hard work in encouraging digital wallets in order to create a cashless economy.

REFERENCE

Ahmad, Z. B. (2022). *Malaysia.* Britannica. https://www.britannica.com/place/Malaysia

Aji, H. M., Berakon, I., & Husin, M. M. (2020). COVID-19 and e-wallet usage intention: A multigroup analysis between Indonesia and Malaysia. *Cogent Business & Management, 7*(1). https://doi.org/10.1080/23311975.2020.1804181

Al-Fahim, N. H., Jusoh, W. J. W., & Abideen, A. (2016). An examination factors influencing the intention to adopt internet banking among SMES in Yemen: Using an extension of the technology acceptance model (TAM). *Journal of Internet Banking and Commerce, 21*(5).

Alfany, Z., Saufi, A, & Mulyono, L. E. H. (2019). The Impact of Social Influence, Self-Efficacy, Perceived Enjoyment, and Individual Mobility on Attitude toward use and Intention to use Mobile Payment of OVO. *Global Journal of Management and Business Research, 19*(7).

Alkhhurayyif, Y., & Weir, G. R. S. (2017). Readability as a Basis for Information Security Policy Assessment. *2017 Seventh International Conference on Emerging Security Technologies (EST*), 114-121, https://doi.org/10.1109/EST.2017.8090409

Allied Wallet. (2021). *Why secure e-wallets are gaining a competitive edge.* Allied Wallet. https://www.alliedwallet.com/blog/blog-posts/secure-e-wallets-gaining-competitive-edge/

Amin, H. (2009). Mobile Wallet Acceptance in Sabah: An Empirical Analysis. *Labuan Bulletin of International Business & Finance, 7*, 33-52.

Amin, H., Rahman, A. R. A., Jr, S. L. S., & Hwa, A. M. C. (2011). Determinants of customers' intention to use Islamic personal financing: The case of Malaysian Islamic banks. *Journal of Islamic Accounting and Business Research, 2*(1), 22-42. https://doi.org/10.1108/17590811111129490

Amoroso, D. L., & Watanabe, R. M. (2012). Building a Research Model for Mobile Wallet Consumer Adoption: The Case of Mobile Suica in Japan.

Journal of Theoretical and Applied Electronic Commerce Research, 7(1), 94-110. https://doi.org/10.4067/S0718-18762012000100008

Ariffin, S. K., Rahman, M. F. R. A., Muhammad, A. M., & Zhang, Q. (2021). Understanding the consumer's intention to use the e-wallet services. *Spanish Journal of Marketing – ESIC, 25*(3), 446-461. https://doi.org/10.1108/SJME-07-2021-0138

Azman, H., Cheong, S. L., & Yahaya, S. N. (2021). Factors affecting adoption of e-wallet among Gen Y in Pahang. *Journal of Technology Management and Technopreneurship, 9*(2), 102-112.

Bank Negara Malaysia. (2022). *Electronic Payments: Volume and Value of Transactions.* https://www.bnm.gov.my/documents/20124/57659/02_epayment.pdf

Bank Negara Malaysia. (2022). *Payment systems.* https://www.bnm.gov.my/list-of-regulatees

Betts, P. (2016). *Cultural, political and social factors influence the meaning of translations.* Globalization Partners International. https://www.globalizationpartners.com/2016/06/09/cultural-political-and-social-factors-influence-the-meaning-of-translations/

Bhat, A. (2019). *Nominal, Ordinal, Interval, Ration Scales with Examples.* QuestionPro. https://www.questionpro.com/blog/nominal-ordinal-interval-ratio/

Bhatt, V., Ajmera, H., & Nayaj, K. (2021). An Empirical Study On Analyzing A User's Intention Towards Using Mobile Wallets; Measuring The Mediating Effect Of Perceived Attitude And Perceived Trust. *Turkish Journal of Computer and Mathematics Education, 12*(10),5332-5353.

Birruntha, S. (2020). Malaysia expect to go full cashless by 2030. *The Malaysian Reserve.* https://themalaysianreserve.com/2020/09/17/malaysia-expect-to-go-full-cashless-by-2030/

Birruntha, S. (2021). Pandemic pushes more than 80% growth for e-wallet players. *The Malaysian Reserve.* https://themalaysianreserve.com/2021/10/18/pandemic-pushes-more-than-80-growth-for-e-wallet-players/

Boku. (2021). *Mobile Wallet Report 2021*. Boku. https://d15k2d11r6t6rl.cloudfront.net/public/users/Integrators/ca93d1a2-15c8-4dba-b10a-ca6349c6a6d1/ap-boku2/Boku%20-%202021%20Mobile%20Wallets%20Report.pdf?utm_campaign=Mobile+Wallets+Report+2021+Download&utm_medium=email&utm_source=autopilot

Bramantyo, P. D. & Utami, C. W. (2022). Technology Acceptance Model (TAM) factors and social factors analysis through attitude towards the use on intention to purchase of Kisah Kita Ngopi online café. *Review of Management and Entrepreneurship, 6*(1), 73-96. https://doi.org/10.37715/rme.v6i1.2456

Chan, Y. H., Chia, C. H., Loh, H. L., & Tong, E. (2021). The intention of young adult to adopt e-wallet during the COVID-19 pandemic in Malaysia.

Chawla, D, & Joshi, H. (2019). Consumer attitude and intention to adopt mobile wallet in India- An empirical study. *International Journal of Bank Marketing, 37*(7), 1590-1618. https://doi.org/10.1108/IJBM-09-2018-0256

Chawla, D., & Joshi, H. (2020). Role of Mediator in Examining the Influence of Antecedents of Mobile Wallet Adoption on Attitude and Intention. *Global Business Review.* https://doi.org/10.1177/0972150920924506

Chellappa, R. K. (2007). Consumers' Trust in Electronic Commerce Transactions: The Role of Perceived Privacy and Perceived Security.

Cheng, F. M., Khim, C, & Thai, S. (2018). Consumer Adoption of E-Wallets: A Study of Millennials at the Institute of Foreign Languages, Cambodia. *Proceedings of the 21st Asia-Pacific Conference on Global Business, Economics, Finance & Social Sciences (AP18Taiwan Conference) Taipei-Taiwan.*

Chew, J. W., Parveen K. A/P. A. S., Siew, X. Y., Tan, H. Y., & Tan, Y. Z. (2021). Factors Influencing the intention to use digital wallets in Malaysia.

Chin, W. W. (2010). Bootstrap cross-validation indices for PLS path model assessment. *In Handbook of partial least squares* (pp. 83-97). Springer, Berlin, Heidelberg.

Chua, C. J., Lim C, S., & Aye, A. K. (2020). Consumers' Behavioural Intention to Accept of the Mobile Wallet in Malaysia. *Journal of Southwest Jiaotong University*, *55*(1), 460. https://doi.org/10.35741/issn.0258-2724.55.1.3

Daragmeh, A., Sagi, J., & Zeman, Z. (2021). Continuous Intention to Use E-Wallet in the Context of the COVID-19 Pandemic: Integrating the Health Belief Model (HBM) and Technology Continuous Theory (TCT). *Journal of Open Innovation: Technology, Market, and Complexity*, *7*(2), 132. https://doi.org/10.3390/joitmc7020132

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, *13*(3), 319-34. https://doi.org/10.2307/249008

Definition of 'E-wallets. (2022). *The Economic Times.* https://economictimes.indiatimes.com/definition/e-wallets

Deka, P. K. (2020). Intention to use mobile wallet by youths in Northeast India. *Journal of Management in Practice*, *5*(1).

Department of Statistic Malaysia. (2021). *Current Population Estimates, Malaysia, 2021.* https://www.dosm.gov.my/v1/index.php?r=column/cthemeByCat&cat=155&bul_id=ZjJOSnpJR21sQWVUcUp6ODRudm5JZz09&menu_id=L0pheU43NWJwRWVSZklWdzQ4TlhUUT09

Department of Statistics Malaysia. (2022). Malaysia @ a Glance. https://www.dosm.gov.my/v1/index.php?r=column/cone&menu_id=ZmVrN2FoYnBvZE05T1AzK0RLcEtiZz09

Dimock, M. (2019). *Defining generations: Where Millennials end and Generation Z begins.* Pew Research Center. https://www.pewresearch.org/fact-tank/2019/01/17/where-millennials-end-and-generation-z-begins/

Effendy, F., Hurriyati, R., & Hendrayati, H. (2021). Perceived usefulness, perceived ease of use, and social influence: Intention to use e-wallet.

Advances in Economics, Business and Management Research, 187, 311-315. https://doi/org/10.2991/aebmr.k.210831.060

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics, 5*(1), 1-4.

Fan, V., & Cheong, R. (2021). *Malaysia: MCO, CMCO, RMCO, CMCO Again: Regulations and SOPs.* Mondaq. https://www.mondaq.com/operational-impacts-and-strategy/1022936/mco-cmco-rmco-cmco-again-regulations-and-sops

Fandy, T., Ghazala, K., Soo, Y. E., & Vimala, K. (2020). Generation Z in Malaysia: The Five 'E' Generation (Electronically Engaged, Educated, Entrepreneurial, Empowered, and Environmentally Conscious). *The New Generation Z in Asia: Dynamics, Differences, Digitalization*, 149-163. https://doi.org/10.1108/978-1-80043-220-820201015

Fishbein, M. & Ajzen, I. (1975), *Belief, attitude, intention and behavior: An introduction to theory and research.* Reading, MA: Addison-Wesley.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50.

Goh, J. (2020). Credit cards see growth despite rise of e-wallets. *The Edge Markets.* https://www.theedgemarkets.com/article/credit-cards-see-growth-despite-rise-ewallets

Gold, A. H., Malhotra, A., & Segers, A. H. (2001). Knowledge management: An organizational capabilities perspective. *Journal of Management Information Systems, 18*(1), 185-214. https://doi.org/10.1080/07421222.2001.11045669

Gomes, V. (2022). E-Wallet: Digital payments pivotal to Malaysia's financial services industry. *The Edge Markets.* https://www.theedgemarkets.com/article/ewallet-digital-payments-pivotal-malaysias-financial-services-industry

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing theory and Practice, 19*(2), 139-152.

Halim, N. A. A., Zadeh, A. V., Hanifah, H., Teoh, A. P., & Nawaser, K. (2021). Understanding the determinants of e-wallet continuance usage intention in Malaysia. *Quality & Quantity*. https://doi.org/10.1007/s11135-021-01276-7

Hamid, M. R. A., Sami, W., & Sidek, M. H. M. (2017). Discriminant Validity Assessment: Use of Fornell & Larcker criterion versus HTMT Criterion. *Journal of Physics: Conference Series, 890*. https://doi.org/10.1088/1742-6596/890/1/012163

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43(*1), 115-135. https://doi.org/10.1007/s11747-014-0403-8

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial lease squares path modeling in international marketing. *New Challenges to International Marketing: Advances in International Marketing, 20*, 277-319. https://doi.org/10.1108/S1474-7979(2009)0000020014

Hill, R. (1998). What sample size is "enough" in internet survey research? *Interpersonal Computing and Technology: An Electronic Journal for the 21st Century, 6*(3-4).

Himel, M. T. A., Ashraf, S., Bappy, T. A., Abir, M. T., Morshed, M. K., & Hossain, M. N. (2021). Users' attitude and intention to use mobile financial services in Bangladesh: an empirical study. *South Asian Journal of Marketing, 2*(1), 72-96. https://doi.org/10.1108/SAJM-02-2021-0015

Ho, D. (2021). *Cashing in on going cashless*. Accounting and Business. https://abmagazine.accaglobal.com/global/articles/2021/dec/business/cashing-in-on-going-cashless.html

Hossain, S. A., Bao, Y., Hasan, N., & Islam, M. F. (2020). Perception and prediction of intention to use online banking systems: An empirical study using extended TAM. *International Journal of Research in Business and Social Science, 9*(1), 112-126. https://doi.org/10.20525/ijrbs.v9i1.591

Institute for Capital Market Research Malaysia. (2021). *The rise of Millennial & Gen Z investors: Trends, Opportunities, and Challenges for Malaysia 2021*. Institute for Capital Market Research Malaysia. https://www.icmr.my/wp-content/uploads/2021/10/FINAL-VERSION-The-Rise-of-Millennial-and-Gen-Z-Investors.pdf

Isaac, S., & Michael, W. B. (1995). *Handbook in research and evaluation.* San Diego, California: Educational and Industrial Testing Services.

Junnonyang, E. (2021). Integrating TAM, perceived risk, trust, relative advantage, government support, social influence and user satisfaction as predictors of mobile government adoption behavior in Thailand. *International Journal of eBusiness and eGovernment studies, 13*(1), 159-178. https://doi.org/10.34109/ijebeg.202113108

Kadir, H. A., Ismail, R., Wok, S., & Manan, K. A. (2022). The mediating effect of attitude on e-wallet usage among users in Malaysia. *Journal of Communication Education, 2*(1), 58-77.

Karim, M. W., Haque, A., Ulfy, M. A., Hossain, M. A., & Anis, M. Z. (2020). Factors Influencing the Use of E-wallet as a Payment Method among Malaysian Young Adults. *Journal of International Business and Management, 3*(2), 1-12. https://doi.org/10.37227/jibm-2020-2-21

Kasirye, F., & Masum, S. M. H. (2021). The Effects of e-Wallet Among Various Types of Users in Malaysia: A Comparative Study. *Asian Journal of Research in Business and Management, 3*(2), 177-194.

Kee, M. H. D., Lai, K. H., Lee, J. C., Lee, J. J., Lee, J. L., Yosanti, I., & Aryani, D. N. (2022). Do you have a digital wallet? A study of e-wallet during the COVID-19 Pandemic. *International Journal of Accounting & Finance in Asia Pacific, 5*(1), 24-38. https://doi.org/10.32535/ijafap.v5i1.141

Kirana, K. C., Ratnasari, R., & Widiastuti, T. (2018). Subjective norms, self-efficacy and government support to intention to use internet banking (in Islamic perspective). *Journal of Internet Banking and Commerce, 23*(1).

Kline, R. B. (2011). *Principles and practices of structural equation modeling* (3rd ed.). New York: Guilford Press.

Krejcie, R., & Morgan, D.W. (1970). Determining sample size for research activity. *Journal of Computing and Technology, 30*, 607-610.

Kumar, K. S., Sivashanmugam, C., & Venkataraman, A. (2017). Intention to use mobile wallet: Extension of TAM model. *International Journal of Current Engineering and Scientific Research, 4*(12).

Laurer, C. (2021). *What is an e-wallet – Definitions and technical distinctions.* Trimplement. https://trimplement.com/blog/2021/02/e-wallets-definition/

Lee, J. (2018). *With over 30 e-wallets in M'sia, it's time someone tries to get them all in 1 app.* Vulcan Post. https://vulcanpost.com/647184/mback-pay-combine-ewallet-payment-merchant/

Lee, Y. M. K., & Jais, M. (2022). Factors affecting the intention to use e-wallets during the Covid-19 pandemic. *Gadjah Mada International Journal of Business, 24*(1), 82-100. https://doi.org/10.22146/gamaijb.64708

Lee, Y. M. K., Jais, M., Chan, C. W., & Zaidi, N. S. (2020). Factor affecting adoption of e-wallet in Sarawak. *International Journal of Academic Research in Accounting, Finance and Management Science. 10*(2), 244-256. https://doi.org/10.6007/IJARAFMS/v10-i2/7446

Liew, J. M. (2019). A Study of Factors Influencing Customers' Acceptance of Mobile Payments in Malaysia.

Malik, A., Suresh, S., & Sharma, S. (2019). An empirical study of factors influencing consumers' attitude towards adoption of wallet apps. *International Journal of Management Practice, 12*(4), 426-442. https://doi.org/10.1504/IJMP.2019.102534

Mandari, H. E., Chong, Y. L., & Chung, K. W. (2017). The influence of government support and awareness on rural farmers' intention to adopt mobile government services in Tanzania. *Journal of Systems and Information Technology, 19*(1/2), 42-64. https://doi.org/10.1108/JSIT-01-2017-0005

Marakarkandy, B., Yajnik, N., & Dasgupta, C. (2017). Enabling internet banking adoption: An empirical examination with an augmented technology

acceptance model (TAM). *Journal of Enterprise Information Management, 30*(2), 263-294. https://doi.org/10.1108/JEIM-10-2015-0094

Matemba, E. D., & Li, G. (2018). Consumers' willingness to adopt and use WeChat wallet: An empirical study in South Africa. *Technology in Society, 53*, 55-68. https://doi.org/10.1016/j.techsoc.2017.12.001

Memom, A. H., & Rahman, I. A. (2014). SEM-PLS analysis of inhibiting factors of cost performance for large construction projects in Malaysia: perspective of clients and consultants. *The Scientific World Journal, 2014*(1).

Mobile Network Experience Report. (2022). *4G Availability in Sabah (in % of time).* Open Signal. https://www.opensignal.com/reports/2022/04/malaysia/mobile-network-experience

Mobile Network Experience Report. (2022). *4G coverage experience in Sabah.* Open Signal. https://www.opensignal.com/reports/2022/04/malaysia/mobile-network-experience

Nag, A. K., & Gilitwala, B. (2019). E-wallet- Factors affecting its intention to use. *International Journal of Recent Technology and Engineering, 8*(4), 3411-3415. https://doi.org/10.35940/ijrte.D6756.118419

Nathan, L. (2021). The boom of e-commerce in Covid-19 era. *The Malaysian Reserve.* https://themalaysianreserve.com/2021/01/01/the-boom-of-e-commerce-in-covid-19-era/

Ng, M. S. (2019). Malaysia's position in the fintech race. *The Malaysian Reserve.* https://themalaysianreserve.com/2019/07/16/malaysias-position-in-the-fintech-race/

Nugroho, M. A. (2015). Impact of government support and competitor pressure on the readiness of SMEs in Indonesia in adopting the information technology. *Procedia Computer Science, 72*, 102-111. https://doi.org/10.1016/j.procs.2015.12.110

Ojo, A. O., Fawehinmi, O., Ojo, O. T., Arasanmi, C., & Tan, C. N. L. (2022). Consumer usage intention of electronic wallets during the COVID-19

pandemic in Malaysia. *Cogent Business & Management, 9*(1). https://doi.org/10.1080/23311975.2022.2056964

Open Signal. (2021). *Understanding mobile network experience: What do Opensignal's metrics mean?* Open Signal. https://www.opensignal.com/2021/05/26/understanding-mobile-network-experience-what-do-opensignals-metrics-mean#:~:text=In%20simple%20terms%2C%204G%20Coverage,they%20live%2C%20work%20and%20travel.

Oppotus. (2021). *Consumer Confidence in MCO 2.0 Rebounds: Q1 2021*. Oppotus. https://www.oppotus.com/q1-2021-malaysian-consumer-confidence-in-mco-2-0/

Oppotus. (2021). *Malaysian E-wallet Usage as we move towards recovery [2021]*. Oppotus. https://www.oppotus.com/malaysian-e-wallet-usage-towards-recovery-2021/

Oppotus. (2022). *Q4'2021 Update: Omicron Affected Malaysians' Sentiments Towards End 2021*. Oppotus. https://www.oppotus.com/q4-2021-update-omicron-affected-malaysians-sentiments-towards-end-2021/

Pang, T. Y. (2019). *Shopee releases its own e-wallet, Shopee pay.* RinggitPlus. https://ringgitplus.com/en/blog/e-wallet/shopee-releases-its-own-e-wallet-shopeepay.html

Payments Network Malaysia. (2022). *Weathering the pandemic.* https://paynet.my/publications/Digital-Payments-Insights-Study-2022.pdf

Phuah, K. T., Ting, J. L., & Wong, K. S. K. (2018). Understanding customer intention to use mobile payment services in Nanjing, China. *International Journal of Community Development & Management Studies, 2*, 49-60. https://doi.org/10.31355/22

Putit, L., Suki, A. A., Abdullah, M. F., Ahmad, N., Salleh, N. F., & Asmawi, N. H. (2021). Gravitating towards consumers' use of contactless payment: A COVID 19 Pandemic perspective. *Journal of Marketing Research and Case Studies, 2021*(2021). https://doi.org/10.5171/2021.679283

Razak, S. N. A., Ghazali, N. A., Shakarudin, N. A., & Zalaruddin, M. N. I. (2021). Influencing factors to e-wallet adoption among generation Z.

Ruel, E., Wagner, W. E., & Gillespie, B. J. (2015). *The Practice of Survey Research: Theory and Applications.* SAGE Publications, Inc.

Sacco, F. (2020). *The history of digital wallets.* 717 Credit Union. https://blog.717cu.com/resources/education/financial-education-blog/the-history-of-digital-wallets

Sachdev, N. (2019). *The evolution of ewallets: history, benefits and withdrawals.* The Sociable. https://sociable.co/mobile/evolution-ewallets-history-benefits-withdrawals/

Shankar, A., & Datta, B. (2018). Factors Affecting Mobile Payment Adoption Intention: An Indian Perspective. *Global Business Review,19*(3), 72-89. https://doi.org/10.1177%2F0972150918757870

Sharma, B. (2016). A focus on reliability in developmental research through Cronbach's Alpha among medical, dental and paramedical professionals. *Asian Pacific Journal of Health Sciences, 3*(4), 271-278.

Shin, D. H. (2009). Towards an understanding of the consumer acceptance of mobile wallet. *Computers in Human Behavior, 25*(6), 1343-1354. https://doi.org/10.1016/j.chb.2009.06.001

Si, D. (2022). E-wallet, convenient or complicated? *Journal of Digitainability, Realism & Mastery (DREAM), 1*(1), 18-22.

Singh, A., & Kalra, A. (2021). Impact of mobile wallet security on consumer attitude towards use. *Psychology and Education, 58*(4), 3140-3146.

Singh, G. (2019). A Review of Factors Affecting Digital Payments and Adoption Behaviour for Mobile e-wallets. *International Journal of Research in Management & Business Studies,* 89-96.

Singh, N., Sinha, N., & Liebana-Cabanillas, F. J. (2020). Determining factors in the adoption and recommendation of mobile wallet services in India: Analysis of the effect of innovativeness, stress to use and social influence. *International Journal of Information Management, 50,* 191-205. https://doi.org/10.1016/j.ijinfomgt.2019.05.022

Soodan, V, & Rana, A. (2020). Modeling customers' intention to use e-wallet in a developing nation: extending UTAUT2 with security, privacy and savings. *Journal of Electronic Commerce in Organizations, 18*(1), 89-114. https://doi.org/10.4018/JECO.2020010105

Statista. (2020). *Pandemic set to benefit smartphone mobile payments.* Statista. https://www.statista.com/chart/23470/global-transaction-value-forecast-of-smartphone-mobile-payments/

Tahar, A., Riyadh H. A., Sofyani, H., & Purnomo, W. E. (2020). Perceived ease of use, perceived usefulness, perceived security and intention to use e-filing: The role of technology readiness. *Journal of Asian Finance, Economics, and Business, 7*(9), 537-547, https://doi.org/10.13106/jafeb.2020.vol7.no9.537

Tan, J. (2020) *Mastercard: Malaysia Has Highest Mobile Wallet Usage in Southeast Asia.* RinggitPlus. https://ringgitplus.com/en/blog/e-wallet/mastercard-malaysia-has-highest-mobile-wallet-usage-in-southeast-asia.html

Tan, K. O., Aziz, F. B., Ong, C. H., Goh, C. F., Lim, K. Y., Saadon, M. S., & Choi, S. L. (2020). E-Wallet Acceptance among Undergraduates in Malaysia. *Test Engineering & Management,* 12990-12998.

Teo, S. C., Law, P. L., & Koo, A. C. (2020). Factors affecting adoption of e-wallets among youths in Malaysia. *Journal of Information System and Technology Management, 5*(19), 39-50. https://doi.org/10.35631/JISTM.519004

Thai, S. B., & Kuwa, Y. Y. (2021). An examination of determinants for e-wallet adoption in Malaysia: A combined approach [version 1; peer review: 1 not approved]. *F1000Research 2021, 10*. https://doi.org/10.12688/f1000research.73402.1

Trivedi, J. P. (2016). Factors Determining the Acceptance of E Wallets. *International Journal of Applied Marketing and Management, 1*(2), 42-53.

Venkatesh, V., Morris, M. G., Davis, G. G., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a unified view. *MIS Quarterly, 27*(3), 425-478. https://doi.org/10.2307/30036540

Vinitha, K. (2021). A model of behavioural Intention on usage of e-Wallet amid the pandemic Covid-19. *Natural Volatiles & Essential Oils, 8*(5), 9909-9919.

World Health Organization. (2021) *Coronavirus disease (COVID-19).* https://www.who.int/health-topics/coronavirus#tab=tab_1

Worldometer. (2022). *Covid-19 Coronavirus Pandemic.* Worldometer. https://www.worldometers.info/coronavirus/

Yaakop, A. Y., Yee, P. S., Foster, B., & Saputra J. (2021). Investigating e-wallet adoption of COVID19 intra-period among Malaysian youths': Integrated task-technology fit and technology acceptance model framework. *International Journal of Data and Network Science*, 295-302, https://doi.org/10.5267/j.ijdns.2021.6.004

Yap, C. M., & Ng, B. A. (2019) Factors Influencing Consumer's Perceived Usefulness of M-Wallet in Klang Valley, Malaysia. *Review of Integrative Business and Economics Research, 8*(4), ISSN: 2304-1013.

Yunus, R. (2017). More risk of scams in year-end online sales. *The Malaysian Reserve.* https://themalaysianreserve.com/2017/11/14/risk-scams-year-end-online-sales/

Yusoff, A. S. M., Peng, F. S., Razak, F. Z. A., Mustafa, W. A. (2020). Discriminant Validity Assessment of Religious Teacher Acceptance: The Use of HTMT Criterion. *Journal of Physics: Conference Series, 1529*. https://doi.org/10.1088/1742-6596/1529/4/042045

Zailinawati, A. H., Schattner, & Mazza, D. (2006). Doing a pilot study: why is it essential? *Mal Fam Physician, 1* (2&3), 70-73.

Zhang, J., Yan, L., & Song, Y. (2019). The Role of Consumers' Perceived Security, Perceived Control, Interface Design Features, and Conscientiousness in Continuous Use of Mobile Payment Services. *Sustainability 2019, 11*(23). https://doi.org/10.3390/su11236843

Appendix 3.1 Academic experts amendment suggestions on item of selected variables

Variables	Draft of Measuring Items Adopted from Article	Suggestion from Expert
Social Influence	1. I feel like part of the community by using e-Wallet. 2. I use e-Wallet because the community encourages me to use it. 3. I use e-Wallet because everybody around me is using it. 4. I am using e-Wallet because my family members use it. 5. I am using e-Wallet because a salesperson is encouraging me to use it. 6. I am using e-Wallet because my friends usually use it. 7. People important to me have a positive attitude towards e-Wallet. 8. Many people have a positive attitude towards e-Wallet.	1. I feel like part of the community by using e-Wallet. 2. I use e-Wallet because the community encourages me to use it. 3. I use e-Wallet because everybody around me is using it. 4. I am using e-Wallet because my family members use it. 5. I am using e-Wallet because a salesperson is encouraging me to use it. 6. I am using e-Wallet because my friends usually use it. 7. People important to me have a positive attitude towards e-Wallet. 8. Many people have a positive attitude towards e-Wallet.
Perceived Ease of Use	1. Learning to use e-Wallet service is easy for me. 2. I rarely get frustrated when I use E-Wallet. 3. I find it easy to use E-Wallet services. 4. I rarely make errors when using the E-Wallet. 5. I find e-Wallet app useful for my various types of payment needs. 6. I like the fact that payments done through e-wallets require minimum effort. 7. Generally, using an e-Wallet is effortless.	1. Learning to use e-Wallet service is easy for me. 2. I rarely get frustrated when I use E-Wallet. 3. I find it easy to use E-Wallet services. 4. I rarely make errors when using the E-Wallet. 5. I find e-Wallet app useful for my various types of payment needs. 6. I like the fact that payments done through e-wallets require minimum effort. 7. Generally, using an e-Wallet is effortless.

	8. Instruction in using e-Wallet is easy for me.	8. Instruction in using e-Wallet is easy for me.
Perceived Usefulness	1. E-Wallet has improved quality of my job performance. 2. I find E-Wallet useful in the buying process. 3. E-Wallet services have improved my productivity. 4. E-Wallet services increase my effectiveness. 5. I think using e-Wallet app would enable me to complete transactions more quickly as compared to other traditional methods. 6. I believe e-Wallet app improves the quality of online transaction. 7. I can track my spending better using e-Wallet compared to cash money. 8. E-wallet is a better alternative mode of payment compared to cash money.	1. E-Wallet has improved quality of my ***life***. 2. I find E-Wallet useful in the buying process. 3. E-Wallet services have improved my productivity. 4. E-Wallet services increase my effectiveness. 5. I think using e-Wallet [5] app would enable me to complete transactions more quickly as compared to other traditional methods. 6. I believe e-Wallet [6] app improves the quality of online transaction. 7. I can track my spending better using e-Wallet compared to cash money. *8.* E-wallet is a better alternative mode of payment compared to cash money.

Perceived Privacy and Security	1. I am quite confident making payments through e-Wallet apps. 2. I believe technology used in e-Wallet apps is very secure. 3. I believe e-Wallet apps has a potential to be safer than traditional payment options (such as credit cards, cash etc). 4. I believe that transactions conducted through e-Wallet apps are secure. 5. I believe the chances of losing money stored in e-Wallet are low. 6. I would feel safe providing sensitive information about myself over the e-Wallet platforms. 7. I perceive secure using my credit/debit card information through e-Wallet platforms. 8. I believe the information (personal and behavioral) being collected about me is not being used for purposes other.	1. I am quite confident making payments through e-Wallet apps. ***Eg. Boost, Touch'N Go, Grab Pay, etc.*** 2. I believe technology used in e-Wallet apps is very secure. 3. I believe e-Wallet apps has a potential to be safer than traditional payment options (such as credit cards, cash etc). 4. I believe that transactions conducted through e-Wallet apps are secure. 5. I believe the chances of losing money stored in e-Wallet are low. 6. I would feel safe providing sensitive ***personal*** information over the e-Wallet platforms. 7. I perceive secure using my credit/debit card information through e-Wallet platforms. 8. I believe the information (personal and behavioral) ***being collected is not*** being used for purposes other.
Government Support	1. During COVID-19 pandemic, the government encourages payment transaction using e-Wallets. 2. During COVID-19 pandemic, the government ensures e-Wallets server facilities. 3. During COVID-19 pandemic, the government encourages payment innovation via e-Wallets. 4. During COVID-19 pandemic, the government controls e-Wallets payment operations. 5. During COVID-19 pandemic, the government provides digital incentives to e-Wallets users.	1. During COVID-19 pandemic, the government encourages payment transaction using e-Wallets. 2. During COVID-19 pandemic, the government ensures e-Wallets server facilities. 3. During COVID-19 pandemic, the government encourages payment innovation via e-Wallets. 4. During COVID-19 pandemic, the government controls e-Wallets payment operations. 5. During COVID-19 pandemic, the government provides digital incentives to e-Wallets users.

	6. During COVID-19, the government broadcasts a budget to upgrade the e-Wallet industry. 7. The government ensures that the e-Wallet server is stable during Covid-19. 8. Amid COVID-19, I found the stringent controllance from governance over e-Wallet system operations.	6. During COVID-19, the government broadcasts a budget to upgrade the e-Wallet industry. 7. The government ensures that the e-Wallet server is stable during Covid-19. 8. Amid COVID-19, I found the stringent ***control lance*** from governance over e-Wallet system operations.
Attitude to use e-Wallets	1. I am happy with the e-Wallet payment system. 2. I am fascinated with the e-Wallet payment system. 3. Overall, I am satisfied with the E-wallet. 4. I am enjoying using the e-Wallet when shopping. 5. I am happy with the internet connection when accessing the e-Wallet services. 6. I am pleased with the e-Wallet application for its privacy reason. 7. I am pleased with the e-Wallet application for its security reason. 8. Using e-Wallet is beneficial.	1. I am happy with the e-Wallet payment system. 2. I am fascinated with the e-Wallet payment system. 3. Overall, I am satisfied with the E-wallet. 4. I am enjoying using the e-Wallet when shopping. 5. I am happy with the internet connection when accessing the e-Wallet services. 6. I am pleased with the e-Wallet application for its privacy reason. 7. I am pleased with the e-Wallet application for its security reason. 8. Using e-Wallet is beneficial.

Behavioral Intention to Use e-Wallets	1. I will use e-Wallets for payment transactions during COVID-19 pandemic. 2. I prefer using e-Wallets for payment transactions during COVID-19 pandemic. 3. In the future, I will use e-Wallets for payment transactions. 4. If I had access to E-Wallet, I intend to use it. 5. I would recommend e-Wallet payment to others during Covid-19. 6. I will continue to use e-Wallet to make payments even if the pandemic is over. 7. I plan to use the e-Wallet frequently. 8. I expect my use of the e-Wallet app to increase in the future.	1. I will use e-Wallets for payment transactions during COVID-19 pandemic. 2. I prefer using e-Wallets for payment transactions during COVID-19 pandemic. 3. In the future, I will use e-Wallets for payment transactions. 4. If I had access to E-Wallet, I intend to use it. 5. I would recommend e-Wallet payment to others during Covid-19 ***pandemic***. 6. I will continue to use e-Wallet to make payments even if the pandemic is over. 7. I plan to use the e-Wallet frequently. 8. I expect my use of the e-Wallet app to increase in the future.

Appendix 3.2 Survey Questionnaire Sample

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 the 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 the 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 in 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 authorize 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 contact you or 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 elinggtan@1utar.my.

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:

Questionnaires

Please tick (√) the following answer box for each question.

1. Are you using an e-wallet?
   - □ Yes
   - □ No

2. Have you used an e-wallet before?
   - □ Yes
   - □ No

Section A: Demographic Profile

1. Gender
   - □ Male
   - □ Female

2. Age

____ Years Old

3. Please tick your education level:

   - □ SPM or lower
   - □ Foundation/ Diploma
   - □ Bachelor's Degree
   - □ Master's degree
   - □ Others

4. Occupation Status:

   - □ Students
   - □ Part-time
   - □ Full-time
   - □ Unemployed

5. Period of using e-wallet services.

   - □ Never
   - □ Less than 1 year
   - □ 1-2 years
   - □ 2-3 years
   - □ More than 3 years

Section B

Please indicate your degree of agreement on the following statements by circling the numbers given ranging from:
Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, Strongly Agree = 5

Variables

(i) Social Influence

	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
SI1	I feel like part of the community by using e-Wallet.	5	4	3	2	1
SI2	I use e-Wallet because the community encourages me to use it.	5	4	3	2	1
SI3	I use e-Wallet because everybody around me is using it.	5	4	3	2	1
SI4	I am using e-Wallet because my family members use it.	5	4	3	2	1
SI5	I am using e-Wallet because a salesperson is encouraging me to use it.	5	4	3	2	1
SI6	I am using e-Wallet because my friends usually use it.	5	4	3	2	1
SI7	People important to me have a positive attitude towards e-Wallet.	5	4	3	2	1

(ii) Perceived Ease of Use

	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
PEOU1	Learning to use e-Wallet service is easy for me.	5	4	3	2	1
PEOU2	I rarely get frustrated when I use E-Wallet.	5	4	3	2	1

PEOU3	I find it easy to use E-Wallet services.	5	4	3	2	1
PEOU4	I rarely make errors when using the E-Wallet.	5	4	3	2	1
PEOU5	I like the fact that payments done through e-wallets require minimum effort.	5	4	3	2	1
PEOU6	Generally, using an e-Wallet is effortless.	5	4	3	2	1

(iii) Perceived Usefulness

	Statement	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
PU1	I find E-Wallet useful in the buying process.	5	4	3	2	1
PU2	E-Wallet services have improved my productivity.	5	4	3	2	1
PU3	E-Wallet services increase my effectiveness.	5	4	3	2	1
PU4	I think using e-Wallet app would enable me to complete transactions more quickly as compared to other traditional methods.	5	4	3	2	1
PU5	I believe e-Wallet app improves the quality of online transactions.	5	4	3	2	1

(iv) Perceived privacy and security

	Statement	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
PPS1	I am quite confident making payments through e-Wallet apps.	5	4	3	2	1

	Eg. Boost, Touch'N Go, Grab Pay, etc.					
PPS2	I believe technology used in e-Wallet apps is very secure.	5	4	3	2	1
PPS3	I believe e-Wallet apps has a potential to be safer than traditional payment options (such as credit cards, cash etc).	5	4	3	2	1
PPS4	I believe that transactions conducted through e-Wallet apps are secure.	5	4	3	2	1
PPS5	I believe the chances of losing money stored in e-Wallet are low.	5	4	3	2	1
PPS6	I would feel safe providing sensitive personal information over the e-Wallet platforms.	5	4	3	2	1
PPS7	I perceive secure using my credit/debit card information through e-Wallet platforms.	5	4	3	2	1

(v) Government Support

	Statement	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
GS1	During COVID-19 pandemic, the government encourages payment transaction using e-Wallets.	5	4	3	2	1
GS2	During COVID-19 pandemic, the government ensures e-Wallets server facilities.	5	4	3	2	1

GS3	During COVID-19 pandemic, the government encourages payment innovation via e-Wallets.	5	4	3	2	1
GS4	During COVID-19 pandemic, the government controls e-Wallets payment operations.	5	4	3	2	1
GS5	During COVID-19 pandemic, the government provides digital incentives to e-Wallets users.	5	4	3	2	1
GS6	During COVID-19, the government broadcasts a budget to upgrade the e-Wallet industry.	5	4	3	2	1
GS7	The government ensures that the e-Wallet server is stable during Covid-19.	5	4	3	2	1
GS8	Amid COVID-19, I found the stringent control lance from governance over e-Wallet system operations.	5	4	3	2	1

(vi) Attitude of using e-wallet

	Statement	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
ATT1	I am happy with the e-Wallet payment system.	5	4	3	2	1
ATT2	I am fascinated with the e-Wallet payment system.	5	4	3	2	1
ATT3	Overall, I am satisfied with the E-wallet.	5	4	3	2	1
ATT4	I am enjoying using the e-Wallet when shopping.	5	4	3	2	1
ATT5	I am happy with the internet connection when accessing the e-Wallet services.	5	4	3	2	1
ATT6	I am pleased with the e-Wallet application for its privacy reason.	5	4	3	2	1

(vii) Behavioral Intention to adopt an e-wallet

	Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
BI1	I will use e-Wallets for payment transactions during COVID-19 pandemic.	5	4	3	2	1
BI2	I prefer using e-Wallets for payment transactions during COVID-19 pandemic.	5	4	3	2	1
BI3	If I had access to E-Wallet, I intend to use it.	5	4	3	2	1
BI4	I would recommend e-Wallet payment to others during Covid-19 pandemic.	5	4	3	2	1
BI5	I will continue to use e-Wallet to make payments even if the pandemic is over.	5	4	3	2	1
BI6	I plan to use the e-Wallet frequently.	5	4	3	2	1

- End of Questionnaire -

Appendix 3.3: Sources of questionnaires

	Variables	Questions	Sources
SI1	Social Influence	I feel like part of the community by using e-Wallet.	Kadir et al. (2022)
SI2		I use e-Wallet because the community encourages me to use it.	
SI3		I use e-Wallet because everybody around me is using it.	
SI4		I am using e-Wallet because my family members use it.	
SI5		I am using e-Wallet because a salesperson is encouraging me to use it.	
SI6		I am using e-Wallet because my friends usually use it.	
SI7		People important to me have a positive attitude towards e-Wallet [1].	Bramantyo & Utami (2022)
PEOU1	Perceive Ease of Use	Learning to use e-Wallet service is easy for me.	Trivedi (2016)
PEOU2		I rarely get frustrated when I use E-Wallet.	
PEOU3		I find it easy to use E-Wallet services.	
PEOU4		I rarely make errors when using the E-Wallet.	
PEOU5		I like the fact that payments done through e-wallets [4] require minimum effort.	

PEOU6		Generally, using an e-Wallet is effortless.	Kadir et al. (2022)
PU1	Perceived usefulness	I find E-Wallet useful in the buying process.	Trivedi (2016)
PU2		E-Wallet services have improved my productivity.	
PU3		E-Wallet services increase my effectiveness.	
PU4		I think using e-Wallet [5] app would enable me to complete transactions more quickly as compared to other traditional methods.	Bhatt et al. (2021)
PU5		I believe e-Wallet [6] app improves the quality of online transaction.	
PPS1	Perceived privacy and security	I am quite confident making payments through e-Wallet [7] apps. Eg. Boost, Touch'N Go, Grab Pay, etc.	Bhatt et al. (2021)
PPS2		I believe technology used in e-Wallet [8] apps is very secure.	
PPS3		I believe e-Wallet [9] apps has a potential to be safer than traditional payment options (such as credit cards, cash etc).	
PPS4		I believe that transactions conducted through e-Wallet [10] apps are secure.	
PPS5		I believe the chances of losing money stored in e-Wallet [11] are low.	
PPS6		I would feel safe providing sensitive personal	Zhang et al. (2019)

		information over the e-Wallet [12] platforms.	
PPS7		I perceive secure using my credit/debit card information through e-Wallet [13] platforms.	
GS1	Government Support	During COVID-19 pandemic, the government encourages payment transaction using e-Wallets.	Aji et al. (2020)
GS2		During COVID-19 pandemic, the government ensures e-Wallets server facilities.	
GS3		During COVID-19 pandemic, the government encourages payment innovation via e-Wallets.	
GS4		During COVID-19 pandemic, the government controls e-Wallets payment operations.	
GS5		During COVID-19 pandemic, the government provides digital incentives to e-Wallets users.	Kee et al. (2022)
GS6		During COVID-19, the government broadcasts a budget to upgrade the e-Wallet industry.	
GS7		The government ensures that the e-Wallet server is stable during Covid-19.	
GS8		Amid COVID-19, I found the stringent control lance from governance over e-Wallet system operations.	Vinitha (2021)
ATT1	Attitude	I am happy with the e-Wallet payment system.	Kadir et al. (2022)

ATT2		I am fascinated with the e-Wallet payment system.	
ATT3		Overall, I am satisfied with the E-wallet.	
ATT4		I am enjoying using the e-Wallet when shopping.	
ATT5		I am happy with the internet connection when accessing the e-Wallet services.	
ATT6		I am pleased with the e-Wallet application for its privacy reason.	
BI1	Behavioral intention	I will use e-Wallets for payment transactions during COVID-19 pandemic.	Aji et al. (2020)
BI2		I prefer using e-Wallets for payment transactions during COVID-19 pandemic.	
BI3		If I had access to E-Wallet, I intend to use it.	Trivedi (2016)
BI4		I would recommend e-Wallet payment to others during Covid-19 pandemic.	Kee et al. (2022)
BI5		I will continue to use e-Wallet to make payments even if the pandemic is over.	
BI6		I plan to use the e-Wallet [15] frequently.	Bhatt et al. (2021)

Appendix 3.4: Ethical approval for Research Project

Re: U/SERC/161/2022

20 August 2022

Ms Chia Mei Si
Department of Finance
Faculty of Business and Finance
Universiti Tunku Abdul Rahman
Jalan Universiti, Bandar Baru Barat
31900 Kampar, Perak

Dear Ms Chia,

Ethical Approval For Research Project/Protocol

We refer to your application for ethical approval for your research project (Master student's project) and are pleased to inform you that your application has been approved under Expedited Review.

The details of your research project are as follows:

Research Title	Go Cashless! Factors Affecting the Behavior Intention Towards E-wallet Among Gen Z During the Covid-19 Pandemic in Malaysia: A Case Study in Sabah, Malaysia
Investigator(s)	Ms Chia Mei Si Tan Yie Ling (UTAR Postgraduate Student)
Research Area	Social Sciences
Research Location	Online Study
No of Participants	384 participants (Age: 18 - 25)
Research Costs	Self-funded
Approval Validity	20 August 2022 - 19 August 2023

The conduct of this research is subject to the following:

(1) The participants' informed consent be obtained prior to the commencement of the research,

(2) Confidentiality of participants' personal data must be maintained; and

(3) Compliance with procedures set out in related policies of UTAR such as the UTAR Research Ethics and Code of Conduct, Code of Practice for Research Involving Humans and other related policies/guidelines.

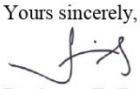
(4) Written consent be obtained from the institution(s)/company(ies) in which the physical or/and online survey will be carried out, prior to the commencement of the research.

Should you collect personal data of participants in your study, please have the participants sign the attached Personal Data Protection Statement for your records.

The University wishes you all the best in your research.

Thank you.

Yours sincerely,



Professor Ts Dr Faidz bin Abd Rahman
Chairman
UTAR Scientific and Ethical Review Committee

c.c Dean, Faculty of Business and Finance
Director, Institute of Postgraduate Studies and Research

Kampar Campus : Jalan Universiti, Bandar Barat, 31900 Kampar, Perak Darul Ridzuan, Malaysia
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Go cahsless! Factor affetcting the behavioral intention towards e-wallet among Gen Z during the Covid-19 pandemic in Malaysia-A case study in Sabah, Malaysia

by Yie Ling Tan

Submission date: 12-Oct-2022 01:58AM (UTC+0800)
Submission ID: 1919991616
File name: vid-19_pandemic_in_Malaysia-A_case_study_in_Sabah,_Malaysia.docx (84.87K)
Word count: 15289
Character count: 83943

CHAPTER 1: INTRODUCTION

1.0 Background of study

Digital payments date back to 1997 when the Coca-Cola Company debuted a few vending machines in Helsinki that allowed customers to purchase a can via text messages (Sacco, 2020). Using mobile devices to purchase and make payments has become a trend, with 95 million users using their mobile devices to make purchases in 2003. In 2011, Google became the first company to provide a mobile wallet, which allows users to make purchases, accumulate loyalty points, and redeem coupons using NFC (near field communications) technology (Sachdev, 2019).

Despite the fact that it was only accessible on one phone model and was only accepted by a few merchants, it was a great success in the FinTech world. Because of the convenience, simplicity of payment, and security of e-wallets, going "cashless" has become the latest trend in the FinTech industry (Sachdev, 2019).

An E-wallet, commonly known as an electrical and digital wallet, is an electronic card that enables users to conduct online transactions by using any electronic device such as a desktop, laptop, tablet, or smartphone (Definition of 'E-wallets', 2022). E-wallets' function works similarly to a conventional wallet, it stores the

credit and debit card information, as well as digital coupons, loyalty cards, and other information. To make a payment or any money transaction, users must link their bank accounts to their e-wallets. Besides, e-wallet functions as a pre-paid account, allowing users to save money for the future online transaction. Software and information were integrated into the part of a digital wallet. Personal data saved in the part of the software providing information security, protection, and encoding of the data (Definition of 'E-wallets', 2022). Nowadays, various mobile security techniques are used by smartphones, for example, complicated alphanumeric passwords as well as biometric procedures like voice activation and fingerprint access, e-wallets use a similar technique. Users of digital wallets can further secure their e-wallet account with a password, customer information is further secured from hackers and other third parties by combining advanced encryption techniques (Laurer, 2021). Modern encryption technology is heavily utilized by e-wallet payment providers to improve mobile wallet security. Data encryption is done by converting regular data, or "plaintext," into a group of random characters, or "ciphertext," which can only be decoded with a unique key. Most businesses safeguard their data with 128-bit data encryption technologies (Allied Wallet, 2021). On the other hand, the information component is a database containing user information such as name, shipping address, billing address, method of payment, information of credit and debit card, amount of the transaction, and so on. As the usage of cashless transactions has grown in popularity, so needs e-wallets. E-wallets may be simply located and downloaded from the app store using the user's smartphone.

Based on (Statista, 2020), the forecast of smartphone mobile payment in global transaction value had increased from 300 million in 2017 to 800 million in 2018, followed by 1200 million (2019), 2000 million (2020), and 2500 million (2021). E-wallets are becoming increasingly popular across the world due to their simplicity, speed, and security.

Users may conduct any money transaction with only a few clicks. Users will no longer need to memorize their passwords or even carry a physical wallet outside, all the e-wallets will be protected by a 6-digit password set by the user, and the e-wallet will automatically provide the information on the payment form during the transaction (Definition of 'E-wallets', 2022).

According to (Boku, 2021), the global mobile wallet market is valued at 2.8037 billion in 2020, followed by 3.085 billion in 2021, and the market is predicted to reach 3.4606 billion in 2022, 3.8565 billion in 2023, 4.3063 billion in 2024 and 4.8727 billion in 2025.

Coronavirus disease (Covid-19) is an infection caused by the SARS-CoV-2 virus. Most people may experience mild to severe respiratory disease because of the coronavirus, but most will recover on their own without any particular therapy (World Health Organization, 2021). However, some people who are infected with the virus develop significant illnesses and may require medical treatment. Coughing, sneezing, speaking, even the breath of an infected patient, and any little liquid particles from the patient's mouth or nose can spread the virus to persons nearby. Anyone of any age can become infected with the

virus, become extremely ill, or die as a result. However, the World Health Organization (WHO) has stated that the best ways to slow and prevent the spread of the virus include staying at least 1 meter away from others to protect yourself, using your hand to cover your mouth and nose when sneezing, and coughing, washing hands frequently, wearing a fitted mask properly, staying at home and self-quarantining if feeling unwell, and most importantly, getting vaccinated (World Health Organization, 2021). The World Health Organization has deemed the coronavirus to be a severe global health hazard, and this global pandemic has had a significant influence on every sector of the global economy. From the end of 2019 to today, according to statistics from Worldometres, the number of coronavirus cases has reached and even surpassed 500 million (Worldometer, 2022).

According to Mastercard Impact Study 2020, mobile or digital wallet usage in Malaysia is leading among countries in Southeast Asia, Malaysia has hit 40% of the digital wallet usage, followed by the Philippines (36%), Thailand (27%), and Singapore (26%) (Tan, 2020).

There are many digital wallets available in Malaysia; Samsung wallet, XOX mobile wallet, FavePay wallet, KiplePay wallet, Presto and others were among the first to launch in the FinTech industry in 2017 (Oppotus, 2021). In the next year, BigPay, Touch'n Go e-wallet, GrabPay wallet and others joined the Malaysian digital wallet industry, followed by MAE, GoPayzm, and 1Pay in 2019, Shopee Pay, and CIMB QR Pay in 2020, and VCash and RazerPay in 2019 and 2021, respectively (Oppotus, 2021). To date, there are 53 e-money issuers

have been listed, which included 47 non-bank e-money licenses and 6 banks' e-money (Bank Negara Malaysia, 2022).

In the last two years, Covid-19 has had a significant influence on our lifestyles, particularly in Malaysian digital wallet usage. The covid-19 pandemic raised digital wallet usage by more than 80% in Malaysia, with e-wallet tendencies dramatically increasing due to the decline in cash usage seen during the epidemic (Birruntha, 2021). Malaysia's government implemented the first Movement Control Order (MCO) on 18th March 2020, followed by the Conditional Movement Control Order (CMCO), Recover Movement Control Order (RMCO), and Enhanced Movement Control Order (EMCO), all these control orders had improved individual's consciousness about the significance of the cashless transaction (Fan & Cheong, 2021). The 'nationwide lockdown' also minimized most of the social and physical interaction, leading Malaysians to engage in more contactless transactions, with e-wallet being their preferred method of payment. The government of Malaysia introduced the e-Tunai, e-Penjana, and e-Pemula incentives to encourage people to use electronic wallets. This incentive was given to approximately 15 million Malaysians who qualified via through GrabPay, Touch' N Go, Shopee Pay, and Boost. In the first quarter of 2020, which is the time when Malaysia's government first gave out the e-Tunai incentives, 62% of people used an e-wallet, up to 38% in the fourth quarter of 2019 (Oppotus, 2022). The usage of e-wallets decreases to 49% in the second quarter of 2020 and increases 11% to 60% in the third quarter of 2020, which is also the time when the government has started disbursing the e-Penjana incentive to all eligible Malaysians. (Oppotus, 2022).

According to the Oppotus report in 2020, the e-wallet usage of generation Z increase 16% from the second quarter of 2020 to 71% in the third quarter of 2020, followed by 61% (4Q2020) and 78% (1Q2021). Compared to other generations, Generation Z showed that they had the highest ups and downs percentage, especially from 2H19 until 1Q2021, and Gen Z also had hit the highest e-wallet usage in 1Q2021 among all the generations.

Moreover, Payments Network Malaysia (2022) showed the result of the consumer perspective of cash usage before and after the pandemic, 18-25 years old, which we know as Gen Z has the highest changes (-8.3) before and after the pandemic, followed by 31-35 years old (-8.11), 26-30 years old (-8.08), 36-40 years old (-6.23), and 41-45 years old (-6.18), this also showed that Gen Z is the highest adopters of digital payments.

Based on the report of (Institute for Capital Market Research Malaysia, 2021), Gen Z and millennials are thought to make up 63% of the world's population, and the figures from the Department of Statistics (2021) showed that 17.1 million Malaysians, or 52.5% of the population, are between the ages of 10 and 40. With an average daily Internet usage of 8 hours, Malaysia's Generation Z is a technologically savvy generation that is largely reliant on social media and smartphones (Fandy et al., 2020). Generation Z is defined as those who were born between 1997 to 2012, as most of them grew up with the internet and technology, they are a vital segment for FinTech firms to target to penetrate e-wallets (Razak et al., 2021).

Due to Covid-19, many countries such as Indonesia, Vietnam, Singapore, Philippines, and Thailand are starting to move into a cashless society (Ho, 2021). The government of Malaysia is also aiming to go cashless in the future, and the implementation and execution of these initiatives will be vital as digital payments involve every part of Malaysian society, not only in the public and private sectors (Birruntha, 2020). It is important to get the onboarding process and coordination right, it will put the economy of one country on the right track if it does well (Gomes, 2022).

Malaysia is divided into two parts: East Malaysia, which is located on the island of Borneo, and West (Peninsular) Malaysia, which is located on the Malay Peninsula (Ahmad, 2022). East Malaysia is made up of the Malaysian states of Sabah and Sarawak, as well as the Federal Territory of Labuan, it covered 20.6% (6.75 million) of the total population in Malaysia, which included 0.10 million in the Federal Territory of Labuan, 2.82 million in Sarawak and 3.83 million in Sabah (Department of Statistics Malaysia, 2022). Sabah has hit the highest population among other states in East Malaysia. However, the Malaysian government has yet to offer full coverage of 4G mobile networks in Sabah. The 4G availability measure provides the average amount of time that users spend with each operator's network with a 4G or stronger connection while the 4G Coverage Experience metric uses a 0-10 scale to determine how mobile users perceive 4G coverage on an operator's network (Open Signal, 2021). Since an e-wallet requires a sufficient internet connection to function, users in a state of underdevelopment will be unable to make payments. As a result, smartphone users reject to use of e-wallets and doubt their use in comparison to physical cash.

Therefore, studying factors affecting the behavior intention toward digital wallets during this pandemic in Sabah, Malaysia is important.

1.1 Problem statement

According to Oppotus (2020), the data on payment and e-wallet trends in Malaysia shows only 38% of Malaysian adopted e-wallets before this pandemic, and it increased by 24% sharply to 62% in the first quarter of 2020. Malaysia government launched a RM30 digital incentives program to increase the adoption of e-wallets in 2020, this program received a positive response from Malaysian (Kementerian Komunikasi dan Multimedia Malaysia, 2020). In addition, the Ministry of Finance (MoF) encouraged Malaysians to boost consumer spending with the e-Penjana campaign in June 2020, this program has pushed the usage of e-wallets to raise from 49% to 60%. However, the volume of e-wallet transactions decreased dramatically from 128.3 million to 45.9 million, followed by 95.8 million in April and May 2020 (Bank Negara Malaysia, 2022). Therefore, the relationship between government support, attitude, and behavior intention toward e-wallets during this pandemic needs to be examined in this study.

Moreover, the impression of social pressure on a person's decision to participate in a certain event is referred to as social influence (Fishbein & Ajzen, 1975). Social influence may come from a variety of places, including family, friends, teachers, lovers, and celebrity influencers. According to Payments Network Malaysia (2022), the decision to adopt and/ or continue usage of e-wallets by generation Z mostly relies on social media including comments, tweets, reviews, and also feedback on digital wallets. The e-Tunai, e-Penjana, and e-Pemula incentives attracted a large number of people to utilize digital wallets, many

people will also share about how they claim the incentives successfully on their social media accounts. Malaysians, on the other hand, are drawn to freebies and will sign up for an e-wallet if a discount or promotion is given. They will move on or quit to the next e-wallet once the deal expires. Brand loyalty and stickiness are difficult to come by (Ng, 2019). For this reason, the relationship between social influence, attitude, and behavior intention toward e-wallets during the covid-19 pandemic needs to be examined in this study.

As Malaysia's government implemented the Movement Control Order (MCO) in 2020, and the awareness of covid-19 towards social distancing has increased, lots of businesses started to realize the distinct advantage of leveraging e-commerce to diverse revenue streams and to meet the ever-rising demand of online shoppers (Nathan, 2021). The top e-commerce platforms in Malaysia such as Lazada, Shopee has also announced their own e-wallet in 2018 and 2019 (Pang, 2019). However, for those e-commerce platforms which don't have their e-wallet, they also collaborated with digital wallets in their payment systems such as GrabPay, Touch'n Go, Boost, and consumers can also direct pay through e-wallet instead of online banking and credit/ debit card method (Gomes, 2022). Users who saved their credit/ debit card information on an e-commerce platform may face cybercriminal risks, hackers can steal personal information such as bank detail, information of credit cards, usernames, and passwords (Yunus, 2017). Instead of memorizing the long credit card number and login to online banking and doing the transaction, the e-wallet which already saves the information of consumer's debit/ credit information can top up with just a click and insert the one-time password (OTP), this is much easier and convenient for

the consumer to do online shopping and make payment. In addition, Karim et al. (2020) also stated that the perceived ease of use has a positive and significant relationship with the usage intention to use a digital wallet. According to Payments Network Malaysia (2022), 78% of Malaysians still use cash to pay, despite an 11 percent drop in cash payments since the Covid-19 epidemic. On average, 48.4% of Malaysians still use cash for everyday costs (Payment Network Malaysia, 2022). Since there are too many e-wallet providers, even if the business supports a specific e-wallet, many e-wallet adopters confront the problem of the cashier not knowing how to use it. It will take them 10 minutes to figure out how to use it, and they may have to call the manager for help, which may be rather inconvenient. This negates the purpose of electronic wallets, which are supposed to be more convenient than cash or even credit cards (Lee, 2018). Consumers and merchants aren't the only ones affected by the oversupply of e-wallets on the market; e-wallet firms are also experiencing difficulties (Lee, 2018). Thus, the relationship between the perceived ease of use, attitude, and behavior intention towards e-wallets during the covid-19 pandemic is proposed for examination in this study.

Furthermore, the major benefit of digital payments is the reduction in the cost of handling cash and peace of mind for consumers and sellers while performing their transactions (Baharuddin & Abu, 2020). Digital wallet enhances transparency, and mobile payment also gives better data access for financial management as it allows consumers to track and monitor their financial activity in real-time (Baharuddin & Abu, 2020). Using a digital wallet is safer and more hygienic, consumers can top up and store money in the e-wallet without having

to queue up at ATMs and so on. People can minimize face-to-face contact with others, do contactless payments and avoid carrying physical cash completely by going cashless. The use of e-wallets may bring some effect on the epidemic curve by reducing the amount of physical contact, hence it can reduce the potential spread of the virus (Hassan, 2020). Moreover, Lee and Jais (2022) revealed that perceived usefulness have a positive and significant association to the intention to utilize e-wallets during the covid-19 epidemic.

However, compared to mobile wallets, credit cards are still the preferred method of payment due to the high acceptance level (Goh, 2020). For example, customers will still require credit cards for large-ticket purchases as it allows them to avoid carrying significant sums of cash. Credit cards are known as a cashless payment system that was first presented to Malaysia 40 years ago (Goh, 2020). Consumers are more familiar with them than with e-wallets since credit cards are a more established type of cashless payment. This also helps to explain why credit cards are still in high demand against e-wallets. The data demonstrate that while e-wallets have a larger transaction volume than credit cards, the latter's transaction value outnumbers the former by a factor of ten (Goh, 2020). Therefore, this project plans to explore the link between the perceived usefulness, attitude, and behavior intention toward e-wallets during this pandemic.

On the contrary, as the Malaysia government stated that Malaysian would go cashless in the future, there are still some consumers who do not adopt e-wallets due to security concerns. Many of them felt that their private information will be stolen, the Nielsen Payment Landscape report showed that 59% believed that

digital wallets will lead to credit and debit card fraud, while 38% are concerned about the missing transaction (Tan, 2019). Although there have not been many e-wallet hacking incidents reported in Malaysia, there are still many consumers who think cash is better than an e-wallet. Lee and Jais (2022) and Lee et al. (2020) argued that the intention toward e-wallets is significantly affected by the elements of perceived privacy and security. Hence, the relationship between perceived privacy and security, attitude, and behavior intention towards e-wallets during the covid-19 pandemic needs to be examined in this study. This paper attempts to deliver further precise info regarding how the covid-19 epidemic influences behavior intention toward digital wallets.

1.2 Research Objectives

i. To examine the relationship between social influence and the attitude of using e-wallets among generations Z in Sabah, Malaysia.

ii. To examine the relationship between perceived ease of use and the attitude of using e-wallets among generations Z in Sabah, Malaysia.

iii. To examine the relationship between perceived usefulness and the attitude of using e-wallets among generations Z in Sabah, Malaysia.

iv. To examine the relationship between perceived privacy and security and the attitude of using e-wallets among generations Z in Sabah, Malaysia.

v. To examine the relationship between government support and the attitude of using e-wallets among generations Z in Sabah, Malaysia.

vi. To examine the mediating effect of attitude in the relation between perceived privacy and security, social influence, government support, and behavior intention towards e-wallets among generations Z in Sabah, Malaysia.

vii. To examine the relationship between social influence and the behavior intention toward e-wallets among generation Z in Sabah, Malaysia.

viii. To examine the relationship between perceived ease of use and the behavior intention towards e-wallets among generation Z in Sabah, Malaysia.

ix. To examine the relationship between perceived usefulness and the behavior intention towards e-wallets among generation Z in Sabah, Malaysia.

x. To examine the relationship between perceived privacy and security and the behavior intention towards e-wallets among generation Z in Sabah, Malaysia.

xi. To examine the relationship between government support and the behavior intention towards e-wallets among generation Z in Sabah, Malaysia.

1.3 Research Question

i. How does social influence relate to the attitude of using e-wallets among generations Z in Sabah, Malaysia?

ii. How does perceived ease of use relate to the attitude of using e-wallets among generations Z in Sabah, Malaysia?

iii. How does perceived usefulness relate to the attitude of using e-wallets among generations Z in Sabah, Malaysia?

iv. How does perceived privacy and security relate to the attitude of using e-wallets among generations Z in Sabah, Malaysia?

v. How does government support relate to the attitude of using e-wallets among generations Z in Sabah, Malaysia?

vi. How does attitude mediate the perceived privacy and security, social influence, government support, and behavior intention toward e-wallets among generation Z in Sabah, Malaysia?

vii. How does social influence relate to behavior intention towards e-wallets among generation Z in Sabah, Malaysia?

viii. How does perceived ease of use relate to behavior intention towards e-wallets among generation Z in Sabah, Malaysia?

ix. How does perceived usefulness relate to behavior intention towards e-wallets among generation Z in Sabah, Malaysia?

x. How does perceived privacy and security relate to behavior intention towards e-wallets among generation Z in Sabah, Malaysia?

xi. How does government support relate to behavior intention towards e-wallets among generation Z in Sabah, Malaysia?

1.4 Significance of the study

1.4.1 To managerial decision-makers

Covid-19 was declared a pandemic two years ago, this pandemic has changed the world in every sector, it still evolving with new variants and new patterns of the disease and virus. The eradication of the virus still long way to go, the Omicron wave shows no signs of declining, and the Health Ministry of Malaysia stated that Malaysian should start to live with covid-19. This does not mean the public health measures such as wearing a mask and social distancing should be left behind. E-wallets still play a vital role in the FinTech sector during this hard time, and they will also mark an important instrument in the future since Malaysia is aiming to go cashless (Gomes, 2022).

The aim of digital wallets, also known as e-wallets (Electronic wallets), is for the business owner and customers able to utilize e-payments for safer, cashless transactions, and more effective. In order to understand the factors that affect Malaysian's willingness to use e-wallets in Malaysia, this research will provide valuable information to those who wish to digitalize their business. By advancing technology,

the firm may acquire a stronger competitive edge and be able to sell to customers who prefer to pay using digital wallets, giving them an advantage over rivals who favor more conventional payment methods.

For instance, users may concern about perceived ease of use, privacy and security, and usefulness when using a digital wallet. Government and e-wallet adopters can base these factors to make improvements to e-wallets to raise their customer's acceptance of using digital wallets for payment. As the latest generation in Malaysia that grows and lives up with modern technologies, Gen Z has shown being a technology savvy and able to respond on technological developments. (Fandy et al., 2020), this research can assist the government and the e-wallet operators to find out the primary concern of users in Gen Z when utilizing the service of e-wallets.

1.4.2 To the academics

This study can assist future researchers in their studies regarding this topic. This paper is helpful in delivering e-wallet info that future studies may fill the gaps by exploring the factors that lead to the behavior intention of e-wallets in Gen Z during the Covid-19 pandemic in Malaysia. The factors that will influence the attitude and behavior intention toward e-wallets are social influence (SE), perceived ease of use (PEOU), perceived usefulness (PU), and

perceived privacy and security (PPS). As the largest generational cohorts right now are Gen Z, and they have the ability to shape future consumer and business trends, future researchers will gain from this research's related information for their study.

In general, most of the past studies were examining the factors which affect the adoption of e-wallets (Abdullah et al., 2020). There are fewer previous studies related to factors that affect the behavior intention of e-wallets during the Covid-19 pandemic. This research will discuss what factors will affect the behavior intention toward e-wallets during the pandemic of covid-19 in Sabah, Malaysia by adding government support and social influence as new factors and provide a clearer perspective on the variables that affect the behavior intention of digital wallets across a wide range of relevant topics.

1.5 Organization of the thesis

41

The background of the study, research problem statement, research objectives, research questions, the significance of the research, and organization of the thesis will all be explored in depth in Chapter 1. Chapter 2 establishes a literature analysis, conceptual, and theoretical model that includes previous studies' perspectives on the research topic. The methodology, which includes the research procedure and study design, is covered in Chapter 3. Furthermore, the

design of sampling, data analysis tools, and data collection will be covered along with primary data.

CHAPTER 2: LITERATURE REVIEW

2.0 Theory of Acceptance Model (TAM) Theoretical Frameworks

Davis (1989) developed the Technology Acceptance Model, based on the Theory of Reasoned Action (TRA), to investigate the factors influencing how consumers accept and adopt new technology. TAM is a model that is frequently used to describe behavioral intention and the desire to apply new technologies. The intention refers to a person's plan or odds of really performing in a certain way.

According to Davis (1989), he mentioned that perceived usefulness (PU) refers to users' belief that utilizing a particular technology would enhance their life and job achievement, whereas perceived ease of use (PEOU) refers to users' trust and expectation that using a particular technology will be free of effort. In addition, external variables such as social, political, and cultural considerations can also have an impact on PU and PEOU. Social factors can be categorized as facilitating conditions, which can affect someone's lifestyle. Cultural factor can be knowns as the desirability of users toward a particular system while political factor is stated as political crises or government influence (Betts, 2016). TAM was adopted and used in a number of studies to look at the intention to utilize

new technology using two variables: perceived usefulness (PU) and perceived ease of use (PEOU).

2.1 Theory of Acceptance Model (TAM) Past Studies Research

Table presents a compilation of historical research based on the TAM and related to digital wallet studies. TAM has also been enhanced in the past by the addition of variables. For example, additional independent factors, such as perceived trust, self-efficacy, and subjective norms were tested (Trivedi, 2016). To investigate digital wallet acceptance in Sabah, Amin (2009) used PEU, PU, perceived credibility, expressiveness, understanding of the e-wallet as IVs, and acceptance of mobile wallet as DV. To examine the intention toward P2P transactions, the TAM was modified by adding additional dependent variables such as privacy, trust, and security to the model. In addition, they noted that privacy concerns may be influenced by trust and security, whereas relative advantage may be influenced by PEU.

TAM was used in the study by Chawla and Joshi (2020), and they employed the mediator theory by using PU to mediate the link between trust and PEU, trust and PU mediates the link between attitude and PEU, PU mediates the link between attitude and facilitation condition (FC), attitude and PU mediates the link between FC and behavioral intention. Aji et al. (2020) investigated the intention toward digital wallets using TAM and the extra parameters of perceived Covid-19 risk and government support. Furthermore, Tan et al. (2020),

as well as Liew (2019), adopted TAM as the main fundamental concept for their research.

In summary, the number of e-wallet research using the TAM and studies looking at the intention to utilize an e-wallet during this pandemic is still limited. This research aims to enrich the e-wallet literature by filling the literature gap by examining the factors that have affected the behavioral intention towards e-wallets during the Covid-19 pandemic, using TAM as the basic theory, and adding two variables which are government support and social influence.

2.2 Past studies Related to Government Support

The variable of government support has been examined in various sectors of studies. The encouragement from the government is critical since any action imposed by the government may directly or indirectly alter citizens' intention.

Hossain et al. (2020) stated that government support was revealed to be one of the essential and favorable antecedents in explaining the adoption of online banking systems. To achieve the Digital Vision 2021, the government of Bangladesh has launched various projects and given a massive budget to prioritize the usage of ICT for digitalized banking. (Hossain et al., 2020). Kirana et al. (2018) revealed that there is a positive significant relationship between government support and the online banking implementation. According to the findings, government support was a substantial factor encouraging the adoption of internet banking.

According to Al-Fahim et al. (2016), government support has a positive significant relationship with the intention to use internet banking among SMEs in Yemen. Legal support and digital business supporting law was significant component of internet banking adoption among SMEs in Yemen, as there is effective legislation in Yemen to protect customers' confidentiality and confront cybercrime. Similar results were found in the study of Junnonyang (2021) and Mandari et al. (2017), which stated that government support is positively associated to the intention to use mobile government in Thailand and Tanzania. Rural farmers are more inclined to utilize the mobile government when the key

supporting elements are provided by the government such as the availability of regulations and policies and lowering the cost of mobile ownership (Mandari et al., 2017).

However, Marakarkandy et al. (2017), stated that government support has no significant relationship to attitude and behavioral intention towards e-banking in India. In addition, Amin et al. (2011) revealed that government support is insignificantly related to the customers' intention to use Islamic personal financing in Malaysia. As an emerging economy, Indonesia's SME sector has yet to completely integrate and utilize information technology (IT) in business processes, government support was found to have an insignificant relationship with the readiness of SMEs to adopt information technology in Indonesia (Nugroho, 2015).

2.3 The development of the current research's hypothesis

2.3.1 Social influence and attitude of using e-wallets

Social influence is also stated as the extent to which a person believes that influential individuals think they should adopt the system is known as social influence (Venkatesh et al., 2003). The relationship between two variables was tested in many past studies, for example,

the paper by (Putit et al., 2021; Alfany et al., 2019; Malik et al., 2019; Lee and Jais, 2022; Kadir et al., 2022). In general, the respondents consensually agreed that social influence shows direct impact on their attitudes of using e-wallets. Uncertainty regarding the possible consequences of innovations creates uncertainty, and those who are uncomfortable with confusion will tend to interact with their social network before making a choice.

According to Lee and Jais (2022), the Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB) were used to investigate the factors that influence people's willingness to use e-wallets during the Covid-19 pandemic, social influence has a positive relationship with the willingness to use e-wallets during the pandemic. Furthermore, Kadir et al. (2022) revealed a significant positive relationship between social influence and a person's attitude of using e-wallet services in Malaysia.

On the other hand, Putit et al. (2021) discovered that social influence findings greatly support the expanded TAM model, although attitudes toward e-wallets and social influence are insignificantly connected. Furthermore, Alfany et al. (2019) claimed that social influence has no effect on attitudes regarding e-wallets in Indonesia. Similar findings were obtained in the study of Malik et al. (2019), which revealed that the association between social influence and attitudes toward e-wallet

usage is insignificant. As a result, the following hypothesis is proposed.

H1: Social influence is positively related to attitude of using e-wallets.

2.3.2 Perceived ease of use (PEOU) and attitude of using e-wallets

The level to which a person perceived how easy it is to utilize the e-wallet is characterized as perceived ease of use (PEOU) (Tahar et al., 2020). Most of the research which adopted TAM as a basic theory used PEOU as one of the variables as PEOU is also the variable included by TAM. According to Kadir et al. (2022), PEOU is significantly correlated to the attitude of using digital wallets in Malaysia. The findings indicated both the PEOU and user attitudes toward e-wallets in Malaysia are significantly connected. The study of Trivedi (2016) showed the result that PEOU has a significant relationship to attitude and behavioral intention toward digital wallets. It shows that users 18-35 years old are more likely to the adoption of e-wallets. Besides, Shin (2009) pointed out that PEOU and attitude toward the usage intention of mobile wallets are positively related. Bhatt et al. (2021), Ariffin et al. (2021), Amoroso and Watanabe (2012), and Himel et al. (2021) also stated that PEOU has a significant influence on the attitude towards digital wallet usage. However, Daragmeh et al. (2021) observed that PEOU had no significant

influence on customer attitudes toward e-wallets in the post-adoption period because consumers were more experienced and comfortable with utilizing the mobile banking system. A similar result was found in the study of Putit et al. (2021), PEOU and attitudes of using e-wallets are insignificantly associated because of the participants' knowledge of Internet and smartphone usage, which may improve their expectancies of service utility rather than altering their attitudes toward the system. As a result, the following hypothesis is proposed.

H_2: Perceived ease of use is positively related to attitude of using e-wallets.

2.3.3 Perceived usefulness (PU) and attitude of using e-wallet

Perceived usefulness (PU) is referred to the extent to which individuals believe how useful the e-wallet would be (Tahar et al., 2020). Consumers tend to use digital wallets continuously compared to other methods of payment if an e-wallet has a high value in PU. PU is another parameter included in TAM that is usually found in studies. Based on the study by Trivedi (2016), stated that PU is significantly associated with an attitude of using e-wallets. The higher the level of PU, the greater the attitude toward e-wallet adoption. In a research done by Kadir et al. (2022) to evaluate the external and internal variables that influence the e-wallet usage of Malaysian consumers

using the extended Technology Acceptance Model, PU was shown to possess a substantial connection with the attitude regarding digital wallets. In addition, Daragmeh et al. (2021), Bhatt et al. (2021), Ariffin et al. (2021) and Himel et al. (2021) stated PU has a strong impact on attitudes of using e-wallets in their studies. Chawla and Joshi (2020) pointed out that the higher the level of PU, the greater the level of trust, attitude, and behavioral intention. Users with a high level of PU will find an e-wallet to be convenient and advantageous in conducting payment transactions. As a result, the following hypothesis is proposed.

H_3: Perceived usefulness is positively related to attitude of using e-wallets.

2.3.4 Perceived Privacy and Security (PPS) and attitude of using e-wallet

Perceived security is defined as individuals only feel minimal fear when adopting the new technology while perceived privacy is concerned with the protection of their private data (Tahar et al., 2020). Security issues included verification (information shared during the transaction restricted to the authorized customer only), confidentiality (information transferred during the payment read and acknowledged only by the potential recipient), non-repudiation (attendees of the transaction were unable to refuse their involvement in the transfer of fund), and data integrity (precise information transmitted during the

transaction) while privacy concern included collection (the business obtaining too many personal details), illegal access (private data was not secured), inconsistencies (inaccurate private data in the database), and secondary use (private data used for activities which apart from those authorized by the potential customer) (Amoroso & Watanabe, 2012). Based on the study of Chawla and Joshi (2020), perceived privacy is stated to have a significant relationship with attitudes towards e-wallets. They also pointed out that privacy is one of the variables that affect the consumer of India in mobile wallet adoption. According to Singh and Kalra (2021), security has a positive linkage with customers' attitudes toward digital wallet services. Similar results were found in the study by (Amoroso & Watanabe, 2012; Chawla & Joshi, 2019), which showed a positive significant relationship between perceived security and privacy and attitude towards the mobile wallet in Japan and India. However, Deka (2020) stated that perceived security shows insignificant consequences on attitudes towards mobile wallets in Northeast India. As a result, the following hypothesis is proposed.

H_4: Perceived privacy and security are positively related to attitude of using e-wallet.

2.3.5 Government support and attitude of using e-wallets

In order to encourage cashless transactions and e-commerce in the era of the pandemic, the Malaysian government, for example, was offering an e-Tunai incentive of RM30 in January 2020, an e-Penjana incentive of RM50 in July 2020, and an e-Pemula incentive of RM150 in April 2022. (Gomes, 2020).

As reported by Lee and Jais (2022), all factors including government support affect the intention toward e-wallet usage in Malaysia. General research on the intention to utilize mobile payment services in Nanjing, China was conducted by (Phuah et al., 2018). According to the findings, support from family members would lead to respondents using E-wallets, followed by the involvement of government and social media. Furthermore, in the study by Hossain et al. (2020), government support was revealed as one of the greatest significant and positive determinants in explaining the acceptance of digital banking systems in this study. According to these arguments, it is expected that government support will affect attitudes toward the use of e-wallets. As a result, the following hypothesis is proposed.

H_5: Government support is positively related to attitude of using e-wallets.

2.3.6 Attitude mediates the relationship between social influence, perceived privacy and security,

government support, and behavioral intention towards e-wallet

Davis (1989) established the technology acceptance model (TAM), which is the most well-known technique for discovering and analyzing individual intentions to adopt new technology. According to Davis (1989), a person's attitude toward implementing new technologies influences behavioral intention, with perceived usefulness and perceived ease of use being the two main influencing variables on an individual's adoption. Putit et al. (2021) investigated the impact of attitude as a mediator between perceived ease of use, perceived usefulness, social influence, and behavioral intention to adopt contactless payment transactions. The study found that attitude influenced the link between perceived ease of use, perceived usefulness, social influence, and behavioral intention. Moreover, Chawla and Joshi (2020), Bhatt et al. (2021), Shin (2009), Amoroso and Watanabe (2012), and Himel et al. (2021) pointed out that attitude moderates the link between perceived ease of use, perceived usefulness, and intention towards digital wallet. According to the findings, the primary focus of e-wallet adoption and diffusion initiatives should be on evolving consumer attitudes that promote effective utilization and acceptance of the behavior. As a result, the following hypothesis is proposed.

H_6: Attitude mediates the relationship between social influence, perceived privacy and security, government support, and behavioral intention towards e-wallets.

2.3.7 Social influence and behavioral intention towards e-wallet

Social influence is the extent to which a person believes that influential individuals think they should adopt the system is known as social influence (Venkatesh et al., 2003). The relationship between two variables was supported in many past studies, for example, the paper by (Teo et al., 2020; Chew et al., 2021; Azman et al., 2021; Nag & Gilitwala, 2019). In general, the respondents consensually agreed that they will adopt the service when many users had shared their thoughts and experiences with digital wallet services on websites, social media, and other public platforms. Users can post their behavioral intentions to embrace and suggest a new technology to others on the future social network platform.

Nevertheless, the relationship was not supported in a few studies as a consensus agreement among the respondents was not reached. In the study by Effendy et al. (2021), social influence has been discovered to have an insignificant effect on the intention to use e-wallets. A similar result was also found in the paper of Cheng et al. (2018). According to Effendy et al. (2021), social influence was found to be insignificantly associated with the intention may because millennials

in their study were not impacted by the role models they idolize, while Cheng et al. (2018) stated the result showed insignificantly may due to the fact that those who adopted new technology in the research were among the innovators, early adopters, and early majority who were willing to face significant risk in doing so. As a result, the following hypothesis is proposed.

H_7: Social Influence is positively related to behavioral intention towards e-wallets.

2.3.8 Perceived ease of use and behavioral intention towards e-wallet

According to Amin (2009), PEOU is positively linked to bank customers' willingness to adopt e-wallets in Sabah. The findings revealed a significant positive association between the PEOU and the consumer's intention to use e-wallets in Sabah. The study of Trivedi (2016) showed the result that PEOU has a significant relationship to attitude and behavioral intention toward digital wallets. It shows that users 18-35 years old are more likely to the adoption of e-wallets. Besides, Singh (2019) pointed a positive relationship between PEOU and behavioral intention to utilize e-wallets. According to the report, customers find it easier to use e-wallets since they only require scanning for the QR code instead of memorizing and keying in the long card PIN during payment transactions. PEOU has also been found to have a positive influence on mobile wallet adoption by Singh

et al. (2020), Shankar and Datta (2018), Chua et al. (2020), and Karim et al. (2020). As a result, the following hypothesis is proposed.

H_8: Perceived ease of use is positively related to the behavior intention towards e-wallets.

2.3.9 Perceived usefulness and behavioral intention towards e-wallet

Based on the study by Amin (2009) and Trivedi (2016), PU is directly associated with usage intentions. The higher the level of PU, the greater the consumer's behavioral intention toward e-wallet adoption. In a study done by Shankar and Datta (2018) to evaluate the main parameters influencing the mobile payment acceptance of Indian consumers using the extended TAM, PU was shown to possess a substantial association with mobile wallet intention. In addition, PU is stated to have a significant effect on intention toward e-wallet adoption in the study by Singh et al. (2020), Tan et al. (2020). Chawla and Joshi (2020) pointed out that the higher the level of PU, the greater the level of trust, attitude, and behavioral intention. Users with a high level of PU will find an e-wallet to be convenient and advantageous in conducting payment transactions. As a result, the following hypothesis is proposed.

H_9: Perceived usefulness is positively related to the behavior intention towards e-wallets.

2.3.10 Perceived privacy and security and behavioral intention towards e-wallet

Based on the study of Matemba and Li (2018), perceived privacy is stated to have a significant relationship with behavioral intention towards P2P transactions. They also pointed out that privacy is one of the variables that affect the consumer of South Africa in Wechat wallet adoption. In addition, Chellappa (2007) showed that PPS may have a direct impact on customers' confidence in digital commercial transactions; it also highlighted that the influence of privacy on commerce trade confidence is heavily driven by perceived security. A study conducted by Soodan and Rana (2020), stated that perceived security has a favorable and substantial association with users' inclination to use digital wallets in India. This finding is consistent with previous studies that found perceived privacy and security to be a significant factor in determining intentions to adopt digital wallets (Amoroso and Watanabe, 2012; Deka, 2020; Shin, 2009). However, Chawla and Joshi (2019) showed that perceived security was insignificantly related to the adoption of e-wallets in India. As a result, the following hypothesis is proposed.

H_{10}: Perceived privacy and security are positively related to the behavior intention towards e-wallets.

2.3.11 Government support and behavioral intention towards e-wallet

Government assistance to a business can lower the price of goods or services by lowering tax rates or contributing to the expense that a consumer would pay for excellent performance (Kee et al., 2022). According to Si (2022), government support was significantly and positively associated with e-wallet adoption intentions in Malaysia. Similar results were found in the study by Ojo et al. (2022) and Chan et al. (2021). According to Ojo et al. (2022), government support is directly linked to digital wallet usage intention as Malaysia's government has implemented relevant initiatives to facilitate cashless payments by pushing individuals to reduce physical contact, hence limiting the spread of the virus. On the other hand, Chan et al. (2021) investigated the intention of the young generation toward the adoption of digital wallets, and it was discovered that government support has a significant and positive relationship with the intention. However, this result contradicts Kee et al. (2022) and Thai and Kuwa (2021), where government support was insignificantly related to the intention toward e-wallet adoption. As a result, the following hypothesis is proposed.

H_{11}: Government support is positively related to the behavior intention towards e-wallets.

2.4 Proposed Conceptual Framework

The fundamental framework, TAM, was employed in this study to evaluate the e-wallet as it is a highly valid approach. Besides, 'Social Influence (SI)' and 'Government Support (GS)' have been added as new independent variables in the research. 'Attitude (ATT)' as a mediator between SI, GS, PPS, and BI. The behavioral intention of Generation Z in Sabah, Malaysia to adopt e-wallets (BI) will be the DV of this study.

CHAPTER 3: RESEARCH METHODOLOGY

3.0 Introduction

This study goes into considerable detail on methodology analysis. In addition, this section will explain the research process, including how the study will be carried out, analyzed, and performed, as well as why specific research methodologies are proposed.

3.1 Research Design

Comparatively, the majority of past studies used a quantitative approach when they intended to develop the fundamental TAM theory. In quantitative research, a larger sample size might be able to generate results that are more accurate and significant for the research, it is also necessary to ensure that the population is distributed in a representative manner. In summary, the quantitative approach is the most appropriate methodological approach for this study.

Table shows the compilation of several previous studies that had used TAM in e-wallet studies, in which qualitative data was not collected by the shown past studies. This research uses structured questionnaires to obtain quantitative data in a way similar to those in past studies. By modifying the measuring items from previous research, the TAM and additional variables are modified to fit the context of this study. The ongoing phenomenon of e-wallets usage intention among Gen Z in Malaysia was explained using a descriptive design.

3.2Target population

'Participants' refers to everyone who participates in this study, in which the researcher is targeting in drawing conclusions. In this research, the target population of this study is Malaysian aged between 18 to 25 years old, which is also known as Gen Z (Dimock, 2019). The reason for selecting Gen Z who live in Sabah, Malaysia as respondents is because the largest age group in Malaysia currently now is Gen Z, which makes up approximately 29% of the total population, Gen Z is a technologically savvy generation that is largely active on social media and smartphone, with an average daily internet usage of 8 hours (Fandy et al., 2020). In addition, Gen Z also showed the highest usage of e-wallets in the third quarter of 2020 (Oppotus. 2021). Moreover, the reason for selecting Sabah, East Malaysia as sampling location because there have been few prior research on how the Covid-19 epidemic influence digital wallet usage intention in East Malaysia. East Malaysia covered 20.6% (6.75 millions) of total

population in Malaysia, which included 0.10 million in Federal Territory of Labuan, 2.82 million in Sarawak and 3.83 million in Sabah, Sabah has hit the highest population among other states in East Malaysia (Department of Statistics Malaysia, 2022). In order to improve their system, the government and software development companies should understand why Gen Z users have chosen in using e-wallets as a result of this research.

3.3 Sample size

Followed by the information of Department of Statistics Malaysia (2020), there are 32.7 million people living in Malaysia, East Malaysia (Sabah) account for 10.4% of the total, which the total is 3.4 million. Using the Morgan's sample size table, a total of 384 respondents should be selected from population counts of 100,000 and more (Krejcie & Morgan, 1970).

3.4 Sampling design

Probability sampling and non-probability sampling are the two different types of sampling techniques. Non-probability sampling is the method of choice for the research. This is due to the convenience and suitability of non-probability sampling for this study's time, financial, and massive collection size constraints. According to Etikan et al. (2016), primary objective of convenience sampling is to gather respondents' info so that the researchers may easily access it. Due to the large population of Gen Z in Malaysia, which is also the target population, convenience sampling will be conducted by distributing the online questionnaire through Google Forms. As a result, respondents were randomly selected at the appropriate location and time.

3.5 Development of Questionnaire and Data Collection Method

Academic professionals were engaged to evaluate the prepared statement for each item. This also known as a component of the process for enhancing the construct's validity. The professional provided feedback regarding how to rephrase the statement so that participants may better grasp what each measuring item is designed to assess. Appendix 3.1 showed the questionnaire which drafted by the current researcher after obtaining information on the measuring items for all examined variables from previous research and the academic experts' amendment suggestion. Prior to the main survey, a pilot study to assess the validity and reliability of the proposed questionnaire must be conducted in order to verify that the main survey participants can fully comprehend the generated questionnaire item statements. The specifics of the pilot test are explained in the following subtopic.

3.5.1 Pilot test

The pilot test, which is used in research studies, is a critical and necessary stage before running the large-scale collection of data (Zailinawati et al., 2006). 30 Google Form pilot test questionnaire will be provided to Gen Z through social media. Isaac and Michael (1995) and Hill (1988) stated individuals between 10 and

30 are recommended for the pilot test in questionnaire research. The recommended number of participants for a pilot test is between 30 and 100, however this number will vary depending on the size of the research sample (Ruel et al., 2015). It is a preliminary evaluation to identify any issues with the suggested study (Alkhurayyif & Weir, 2017). Pilot testing improves the research's relevance, clarity, and substance. Additionally, indications of a relationship between the questionnaire's variables will be found, and performance metrics like time required will be calculated.

In a pilot test, the reliability value of each factor was evaluated by determining the Outer Loading Analysis, Cronbach's Alpha (CA), Average Variance Extracted (AVE), and Composite Reliability (CR) values for each item.

3.5.2 Pilot test result

3.5.2.1 Outer Loading Analysis

Based on the study by Memon and Rahman (2014), items with outer loading values greater than 0.7 is regarded highly satisfactory, loading values between 0.5 to 0.7 are deemed acceptable, while manifest items with outer loading values less than 0.5 should be removed. The majority of the variables meet the requirement of being greater than 0.5. However, ATT7, ATT8, BI3, BI8, PEOU5, PEOU8, PPS8, PU1, PU7, PU8, and SI8 were removed since all of these are less than 0.5, therefore, only 45 items can be kept.

3.5.2.2 Cronbach's Alpha (CA)

'Government Support' has the highest value of Cronbach's Alpha (0.852), followed by 'Perceived Privacy and Security" and 'Social Influence', with the value of 0.816 and 0.812, these three variables are stated at a good level. In addition, 'Perceived Ease of Use' and 'Behavioral Intention towards e-wallets' with the value of 0.754 and 0.751 are consider acceptable, while the 'Attitudes of using e-wallets' and 'Perceived Usefulness' are counted as questionable, as both of their values fall within the range from 0.6 to 0.7.

3.5.2.3 Composite Reliability (CR)

According to Henseler et al. (2009), the composite reliability (CR) value of variable which greater than 0.7 is stated as reliable and satisfactory. Table showed that the CR value of all the variables is greater than 0.7, this means that the model is quite accurate in determining the latent variable.

3.5.2.4 Average Variances Extracted (AVE)

Average Variance Extracted values greater than 0.5 show that it may minimize inaccuracy variation by obtaining over half of the variations and demonstrating adequate internal consistency (Hair et al., 2011). When an AVE value is less than 0.5, this indicates that the inaccuracy variation is greater than the variations given by the model. Yet, in order to retain an AVE that is greater than 0.4, the value of CR must be 0.6 and above (Fornell & Larcker, 1981). Other than 'Attitude of using e-wallets,' 'Government support,' 'Perceived Privacy and Security,' and 'Social Influence,' all the variables are much more than 0.5. Meanwhile, all the factors have a CR score of 0.776, 0.886, 0.859, and 0.855, which is higher than 0.6. As a result, the framework shows an adequate internal consistency.

3.5.3 Main study

Following the completion of the questionnaire, the primary research was conducted, with the objective of collecting 384 totally completed surveys. The major survey results were utilized to confirm the project's hypothesis.

3.5.3.1 Questionnaire Design for Main Study

The survey questionnaire is divided into two sections: A and B. The first part (Section A) focuses with the participant's biographical info which includes the participant's gender, age, education level, occupation status and period of using e-wallet. Section B included the questionnaire, which consisted of 56 statements about the IV and DV. A combination of 6 statement is designed for the DV, behavior intention towards e-wallet, whereas the other 39 statements were for the five IV, which were government support, social influence, perceived ease of use, perceived usefulness and perceived privacy and security (refer appendix 3.2).

Differences between each of these variables can be seen by a numerical analysis of the variables' order. It indicates the area that separates two things at an equal distance (Bhat, 2019). While displaying logical and orderly divisions, this scale has no true zero value. In the research, the popularly known Likert scale was usedIn Section B of the survey, a Likert scale is utilized to determine the level of agreement with the statement. Strongly disagree, disagree, neutral, agree, and strongly agree are each indicated by one to five in the standard five-level Likert scale. The 5-point Likert scale gives respondents the choice of remaining neutral rather than being required

to select an option that does not accurately reflect their thoughts. It also offers greater insight into what respondents are thinking and feeling. Appendix 3.3 contains the source questions for each variable.

3.5.3.2 Distribution of the main study's questionnaire

Questionnaires will be provided to respondents in the form of softcopy, google link will be provided through WhatsApp, WeChat, or any social messaging platform, as some of the respondents may wish to do on contactless. Respondents with e-questionnaires tend to be more willing to read the statement of the item precisely and carefully in order to give the most accurate answer which can represent their option.

All respondents who conduct the questionnaire will be briefed about the main purpose of the study and explain to respondent in order to let them understand what each item statement is measuring.

3.6 Data analysis tool

In this research, the software Smart PLS will be used for data collection analysis. Two types of analysis will be conducted based on the data collected, which are descriptive and inferential analysis.

3.6.1 Descriptive analysis

Frequency counts table in descriptive analysis shows the distribution of respondents' demographic information such as gender, age, education level, occupation status, and period of e-wallet usage. The table also can help researcher to analyze whether the collected data are complete or incomplete. In addition, cross tabulation analysis summarizes the relationship between demographic variables of categorical data. All the data collected will be transformed into statistics for ratio and internal scale measurement. The outcomes of the questionnaire in this study will be reported in a graph and a table using Smart PLS. The chart and statistics will be used to fully describe the outcomes in the next coming chapter.

3.6.2 Outer Loading Analysis (OLA)

Independent manifest reliability describes the variance of independent manifest related to endogenous constructs by computing generalized outer loadings of the latent variable, whereas variable validity is evaluated by convergent and discriminant validity (Memon & Rahman, 2014). In comparison to others, OLA is defined to be a higher typical solution for inner path model connections. It is also known as one of the reliability indicators. Based on the study by Memon and Rahman (2014), the rules of thumb state that items with outer loading values greater than 0.7 is regarded highly satisfactory, loading values between 0.5 to 0.7 are deemed acceptable, while manifest items with outer loading values less than 0.5 should be removed.

3.6.3 Cronbach Alpha (CA)

The reliability test for data collection is significant because it ensures that all measuring items are free of bias and that measurements are consistent throughout time and across different parts of the instrument. The reliability test will be carried out using CA. Reliability coefficients of CA are typically between 0 and 1.

An alpha value of less than 0.5 is deemed unacceptable, while one between 0.5 and 0.6 is deemed poor. Alpha values between 0.6 and 0.7 are regarded as questionable, whereas those between 0.7 and 0.8 are considered acceptable. Alpha values between 0.8 and 0.9 are considered to be good, while values higher than 0.9 are considered to be excellent.

3.6.4 Composite Reliability (CR)

Cronbach alpha and composite reliability, which evaluate the reliability based on the interrelationship of the measured item variables, are the most generally utilized metrics for internal consistency (Hamid et al., 2017). The composite reliability takes into consideration the fact that metrics have varying loadings and may be evaluated in the same approach as Cronbach's alpha (Henseler et al., 2009). Whatever reliability coefficient is chosen, an internal consistency reliability result over 0.7 in early phases of research and values above 0.8 or 0.9 in more developed stages of study are considered adequate, however a value below 0.6 shows a lack of reliability (Henseler et al., 2009).

3.6.5 Average Variance Extracted (AVE)

Average Variance Extracted (AVE), can be utilized as a guideline for determining the research framework's convergent validity. As AVE is at or higher than 0.5, the frameworks are deemed to include adequate convergent validity. This also means that an underlying factor can explain 50% or above of the variation of its measurement on averaging. It may be used to identify the indicator, which represents the variation level out of its corresponding observed factors owing to inaccuracy (Memon & Rahman, 2014). Furthermore, Chin (2010) claimed that an AVE value of 0.5 or higher indicates that half or above the manifest variable's variation may be deemed adequately convergent.

3.6.6 Heterotrait-Monotrait Ratio (HTMT)

The heterotrait-monotrait ratio (HTMT) approach was adopted to investigate the model's multicollinearity. According to Henseler et al. (2015), previous methods are difficult to adopt in variance-based SEM as it unable to identify a lack of discriminant validity in common study scenarios; thus, the researchers proposed another strategy focuses on multitrait-multimethod (MTMM) validity to identify a lack of discriminant validity by applying the HTMT. Henseler et al. (2015) discovered that responsiveness rates of HTMT are greater than the Fornell-Larcker Criterion and partial cross loadings, at 97.01% to 99.90%, 20.82% and 50.79%, respectively. Yusoff et al. (2019) mentioned that discriminant validity is consider unsatisfactory where the score is close to 1. According to the findings of Hamid et al. (2017), discriminant validity issues occurred when the HTMT value is close to 1. Conversely, other scholars, such as Gold et al. (2001) and Kline (2011), argued the issue of discriminant validity will arise if the value is more than 0.85.

3.6.7 Variance Inflation Factor (VIF)

The value of variance being exaggerated is tested and calculated by using the variance inflation factor (VIF).

The value of VIF equal to 1 stated there is no multicollinearity issue occur as it is not correlated, when the VIF score is over 1, less and equal to 5, it means the parameter is moderately correlated. Conversely, the multicollinearity issue will arise when the value of VIF is higher than 5, and the variable will be suggested to eliminate from the model.

3.7 Ethical Consideration

Ethical considerations are necessary for all research studies as all the conducting of research required not only honesty and integrity, but also expertise and diligence. Based on one of the university's research ethics and code of conduct, all questionnaire/ survey, paramedical procedures, studies (whether prospective or retrospective) are required to obtain approval from Scientific and Ethical Review Committee (SERC). Researchers should ensure the confidentiality and privacy of personal information relating to the participants in research, safety of the research participants, and that the research fulfils any legal requirement in any research which involving human participations. The personal data protection statement (PDPS) (refer appendix 3.2) will attach together with the

questionnaires in order to ensure the privacy and confidentiality of participants' information

3.8 Conclusion

To conclude, the current research's approach has been properly devised and performed to strengthen the reliability and validity of the results. A pilot test was conducted to enhance internal consistency by having an academic professional review the prepared questionnaire. The questionnaire was then modified according to the professional's comments. Following that, validity test is performed by obtaining the assistance of 30 respondents to provide feedback on the modified questionnaire items included in the survey. This is performed to ensure that the obtained data accurately represents the targeting population's viewpoint or impression of the tested variables. As the study technique framework was thoroughly explained in this chapter. In the next chapter, data analysis and interpretation will be performed.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

To analyze data, 384 questionnaires were gathered from Gen Z in Sabah, Malaysia. The descriptive analysis of the participant regarding their demographic profile will be examined in the study. SMART PLS 4 was offered as an analytical technique in the study.

4.1 Filtering Question

The first section of the survey included two fundamental questions on digital wallets. Both questions must be completed in order to move to the next section of the survey.

For this study, 385 sets of surveys were obtained in Sabah, Malaysia. The question concerns whether or not the participants use a digital wallet. The results revealed that 384 respondents used digital wallets. The invalid outcome has been removed from the analysis as this goal of the study is to explore at the factors

that influence the adoption of digital wallets. As a result of the data gathered, 384 out of 385 respondents (99.7%) use digital wallets.

In the second question, participants were asked if they had ever used digital wallets. According to the findings, 100% of the respondents have previously used a digital wallet. As a result, 385 surveys from Gen Z in Sabah, Malaysia who have used digital wallets in the past were collected since they are valid and correspond with the research purpose.

4.2 Descriptive Analysis

4.2.1 Gender

Table indicates the gender of the participants. This study's target respondent is Gen Z, aged 18 to 25 in Sabah, Malaysia. According to Table, male respondents numbered 159 and account for 41.4% of all participants, while female respondents numbered 225 and accounted for 58.6% of all survey participants.

4.2.3 Age

The age of the participants is shown in the table. The 25-year-old age group had the largest percentage of participants (27.1%) out of the 8 age groups. The group of 22-year-olds, consisting of 100 participants, came in second with 26%, the highest proportion. Following that, 62 responders (16.1%) are under the age of 23. 24 years old has 50 respondents (13%), 21 years old has 36 respondents (9.4%), 20 years old has 14 respondents (3.6%), and 19 years old has 10 respondents (2.6%). The age of respondents under 18 years old is represented by 8 respondents, yielding the lowest percentage (2.1%).

4.2.3 Education level

The table represents the participants' educational level. The majority of participants have a bachelor's degree, which includes 256 individuals (66.7%) responded, with 84 people (21.9%) having a foundation or diploma level of education. There are 42 individuals (10.9%) who obtain SPM or lower education level, while 2 people (0.5%) acquire master's degree education level.

4.2.4 Occupation Status

The occupation status of participants is shown in Table. Full-time workers make up the largest participation category, with 238 persons (61.2%). The remaining three groups are students (139 people, or 36.2%), unemployed (7 people, or 1.8%), and part-time (3 people, or 0.8%).

4.2.5 Period of using e-wallet services

Table indicates how long users used e-wallet services. More than 3 years has the largest number of 229 responders at 59.6%. The second highest number is 27.1%, obtained from 104 responders representing 2-3 years. Following that, 1-2 years demonstrates 51

responders at 13.3%. Less than one year and never have the lowest percentage of 0 replies.

4.3 Partial least squares-Structural Equation Modeling (PLS-SEM)

4.3.1 Outer Loading Analysis

Based on the findings, the outer loading values for PU1, PU2, and PU5 are rated extremely satisfying among all variables, implying that it gives high reliability to the framework with values of 0.935, 0.929, and 0.940, respectively. Since the values range from 0.7 to 0.8, the outer loading value for BI is deemed satisfied. Memon and Rahman (2014) stated that outer loadings of more than 0.5 should be maintained, whereas outer loadings of less than 0.5 should be deleted because it contributes less to the framework. All the variables have met the minimal threshold of 0.5, therefore all may be kept.

4.3.2 Reliability Test

4.3.2.1 Cronbach's Alpha

With a score of 0.939, perceived privacy and security has the greatest value of all the parameters. This demonstrated that perceived privacy and security is the most consistent indicator among all variables. Furthermore, perceived usefulness (0.925), attitude of using e-wallets (0.919), and government support (0.909) with values greater than 0.9 are also indicated as excellent reliability levels. Aside from that, the values for e-wallet adoption, social influence, and ease of use are 0.874, 0.895, and 0.850, respectively. As a result, these three variables fall within the same range of reliability, which reveals a high level of reliability.

4.3.2.2 Composite Reliability (CR)

With a score of 0.962, the variable "Perceived Privacy and Security" obtain the greatest value. The findings revealed that perceived privacy and security are more consistent than other factors. Furthermore, perceived usefulness, attitude of using e-wallet, social influence, and government support all demonstrated composite reliability values of 0.925, 0.923, 0.914, and 0.913, which are regarded as satisfactory. The behavioral intention toward e-wallets was followed by a composite reliability score of 0.875. Despite obtaining the weakest CR outcomes of all factors (0.864), perceived ease of use was still able to reach an adequate level of composite reliability.

In accordance with the composite reliability findings, the overall latent variables were greater than 0.7, indicating that it met the adequate level. This finding demonstrated that the reliability of factors and observable indicators may be examined.

4.3.2.3 Average Variance Extracted (AVE)

Perceived usefulness has the greatest AVE value including all variables, with a score of 0.775. Whereas 'perceived ease of use' gets a lowest AVE outcome (0.570) across all factors, it is followed

by social influence, with an AVE score of 0.605, government support and behavioral intention toward e-wallets, with an AVE score of 0.615, and attitude toward using an e-wallet, which results in an AVE score of 0.712. Furthermore, the AVE score of perceived privacy and security is 0.731. As shown by table, all of the variables are much more than half with a range between 0.570 and 0.775. The above findings revealed that AVE could be utilized to explore convergent validity in this report. As a result of these parameters, convergent validity is satisfactory.

4.3.3 Discriminant Validity

4.3.3.1 Heterotrait-Monotrait Ratio (HTMT)

According to Henseler et al. (2015), HTMT is more sensitive to the lack of discriminant validity than the Fornell-Larcker Criterion and partial cross loadings. According to Kline (2011), when the HTMT score exceeds 0.85, discriminant validity is deemed insufficient, however, scores less than 0.90 are considerable. According to these results, 100% of the outcomes are less than 0.85, proving how effectively the approach works.

4.3.3.2 Variance Inflation Factors (VIF)

Since all the VIF values are larger than 1 but less than 5, this may infer that the indicators are not closely correlated, the framework is appropriate, and no indicators need to be removed.

4.3.4 Bootstrapping

4.3.4.1 P-value, Path Coefficient (Direct effect)

Consider that the p-value has a scale of significance of 0.05. Table illustrates the association between PEOU, PPS, SI, and ATT, as well as GS, PEOU, PPS, PU, SI, and BI, with results ranging from 0.000 to 0.048, all of which are below 0.05. This suggests that all these factors are related to ATT and BI (DV). This also implies that there is a strong connection between attitudes and behavioral intentions toward e-wallets. On the other hand, the p-values of the GS, PU, and ATT, are greater than the significant scale, being 0.913 and 0.334, respectively. The studies revealed that government support, perceived usefulness, and attitude of using e-wallets are insignificantly related.

In addition, table indicates the path coefficient for each parameter. All the indicators were revealed with a positive coefficient, implying that DV will be adjusted if the IV is raised by one degree. When the path coefficient's value is higher than another factor, the parameters have a higher impact on the DV. According to the results, the PEOU has a greater effect on the ATT, which indicates that if the PEOU raises by one degree, the ATT will raise by 0.469 degrees. While ATT raises by 0.005 degrees for every degree increase in GS, GS has the minimum effect on ATT.

4.3.5 Mediation Analysis

A mediation study was carried out to determine the effect of ATT in mediating the relationship between SI, PEOU, PU, PPS, GS, and BI.

Consider that the p-value has a scale of significance of 0.05. According to Table, the total effect of SI, PEOU, PU, and PPS on BI was significant, but the total effect of GS on BI was insignificant. The total effect is also known as the influence of IV on DV in the absence of the mediator. In other words, without the presence of ATT, the influence of SI, PEOU, PU, and PPS on BI was significant.

Consider that p-value has a scale of significance of 0.05. According to Table, the total indirect effect of SI, PEOU, and PPS on BI was significant, but the total indirect effect of GS and PU on BI was insignificant. The total indirect effect is often referred to as the influence of IV on DV via the mediating factor. In other words, the influence of SI, PEOU, and PPS on BI was significant with the presence of ATT, but the impact of GS and SI on BI was insignificant with the inclusion of ATT.

Since the indirect effect of GS and PU on BI was insignificant, however the direct effect of GS and PU on BI was significant, and the study concluded that GS and PU had a direct, non-mediating effect on BI. In contrast, the indirect effect of PEOU, PPS, and SI on BI was significant, as was the direct effect of these three variables on BI. This can be interpreted as partial mediation, which means that a part of the impact of PEOU, PPS, and SI on BI is mediated by ATT, while PEOU, PPS, and SI still explain a part of BI independently of ATT.

4.4 Conclusion

Data analysis was used to evaluate the relationship between the dependent variable and the independent variable. The major indications for data analysis

were descriptive analysis, outer loading analysis, reliability test, and discriminant validity. The development of the outcome will be detailed in the next chapter.

CHAPTER 5: DISCUSSIONS, CONCLUSION, AND IMPLICATIONS

5.0 Discussion of Major Findings

5.0.1 Relationship between social influence and attitude of using e-wallets

H_1 is accepted, as indicated by the outcome. There is a significantly positive relationship between social influence and attitude of using e-wallets. This means that the presence or behavior of others alters an individual's attitudes regarding e-wallets. This outcome was supported by Kadir et al. (2022) and Lee and Jais (2022). In this study, a research model was designed and tested to analyze the attitude as a mediator on e-wallet usage in Malaysia. This study found that social influence has a positive and significant association with attitude of using e-wallet. As Malaysians are compelled to stay at home due to the 'nationwide lockdown,' users who have expressed their opinions and experiences with mobile wallet services on internet sites and media platforms play a vital role in influencing others to connect with e-wallets (Kadir et al., 2022). However, Alfany et al. (2019) and Malik et al. (2019) disagreed with this finding. Previous research has indicated the association between social influence and attitude of using e-wallets is insignificantly related. Nevertheless, since these

studies were designed for people from other countries, most of the findings may not be valid in Malaysia owing to differences in cultural, attitudinal, and uniqueness.

5.0.2 Relationship between perceived ease of use and attitude of using e-wallets

The finding revealed that H_2 is approved. There is a significant positive relationship between perceived ease of use and attitude of using e-wallets. This shows that the easier it is to use a digital wallet, the more favorable the attitude toward e-wallets. This result was supported by Ariffin et al. (2021), Trivedi (2016), Himel et al. (2021), and Bhatt et al. (2021), where PEOU was founded to have a significant influence on attitude of using e-wallets. According to Bhatt et al. (2021) and Ariffin et al. (2021), they mentioned that the digital wallet service is simple to use and helpful in daily life, enabling users to conduct faster transactions of different payments, is equally crucial in determining their attitude towards the digital wallet service. Furthermore, Himel et al. (2021) stated that, all else being constant, customers who perceive the different features and functions of mobile financial services to be simpler and more intelligible have a positive attitude toward mobile financial services.

5.0.3 Relationship between perceived usefulness and attitude of using e-wallets

H_3 is rejected, as mentioned in the outcome. This indicates the connection between perceived usefulness and the attitude of using e-wallet is minor. Perceived usefulness might not even influence customers' attitudes toward e-wallet adoption. However, this result did not agree by Trivedi (2016), Daragmeh et al. (2021), Bhatt et al. (2021), Himel et al. (2021), and Chawla and Joshi (2020). These past studies had concluded that the perceived usefulness has a significant association to the attitudes towards digital wallet. The reason that the results contradicted previous outcomes might be due to the fact that the research was conducted in different countries. This indicates that the prior finding might not be valid to Malaysia because of differences in backgrounds, mindsets, and uniqueness. Additionally, this study was conducted among Gen Z in Sabah, Malaysia, and the majority of them agreed that perceived usefulness is not the most important factor influencing their attitude to adopt digital wallets.

5.0.4 Relationship between perceived privacy and security and attitude of using e-wallets

Based on the findings, H_4 is approved since the p-value is less than 0.05. There is a significant positive relationship between perceived privacy and security and attitude of using e-wallets. The result indicates that the higher the perceived privacy and security, the greater the confidence in the digital wallet service, which reflects a favorable attitude toward adoption. In other word, it means that perceived privacy and security is one of the main factors that will affect the attitude of Gen Z in Sabah, Malaysia toward mobile wallet adoption during this pandemic. It was supported by Singh and Kalra (2021), Chawla and Joshi (2020), as well as Amoroso and Watanabe (2012), who conducted a study in India and Japan, respectively, indicating that attitudes toward digital wallets are influenced by perceived privacy and security. According to Singh and Kalra (2021), there is no significant different in the security concerns of various age groups, implying that security concerns are equally relevant for all age ranges.

5.0.5 Relationship between government support and attitude of using e-wallets

The outcome indicated that H_5 was rejected. There is no significant association between government support and attitude of using e-wallets. This indicates that the Malaysian government's attempts to encourage digital wallet use through e-Tunai, e-Penjana, and e-Pemula incentives will not have much effect on consumer attitudes regarding e-wallets. However, this result was contradicted with the study of Lee and Jais (2022), Phuah et al. (2018), and Hossain et al. (2020). Previous research indicated that the government support and the attitudes of using e-wallet is significantly associated. According to Hossain et al. (2020), the government of Bangladesh has introduced different programs and distributed a huge budget to prioritize the use of ICT for digitalized banking in order to achieve the Digital Vision 2021; thus, government support can influence consumer attitudes toward digital wallet adoption. Furthermore, the study by Lee and Jais (2022) focused on consumers who embraced digital wallets in the aftermath of the Covid-19 outbreak. They stated that government support aided in the acceleration of Malaysia's transition to a cashless society. This reveals that the prior research may not be applicable to Malaysia because of variances in cultures and perspectives. Furthermore, since this survey was done among Gen Z in Sabah, Malaysia, and the majority of them have been using digital wallets for more than 3 years, government support may not be the most

significant factor that influences their attitudes to utilize digital wallets.

5.0.6 Attitude mediates the relationship between social influence, perceived privacy and security, government support, and behavioral intention towards e-wallets.

H_6 is accepted, as indicated by the finding. The result showed that attitude mediates the relationship between social influence, perceived privacy and security, government support, and behavioral intention towards e-wallets. This indicates that an individual's attitude about utilizing digital wallets affects their behavioral intention to adopt. Putit et al. (2021), Chawla and Joshi (2020), Bhatt et al. (2021), Shin (2009), Amoroso and Watanabe (2012), and Himel et al. (2021) all agreed with the findings. Putit et al. (2021) discovered that consumers' attitudes can impact their decision to use e-wallet payments, especially during the rapid developments of the COVID-19 epidemics; the more positive the attitude toward digital wallets, the more likely the consumer's behavior intention to adopt digital wallets. Additionally, Himel et al. (2021), Bhatt et al. (2021), and Amoroso and Watanabe (2012) found that PU, PEOU, and PPS positively affect customer attitude and behavioral intention toward e-wallets, customers who have a favorable underlying attitude towards the use of the mobile wallet, which supports a powerful desire to utilize it. In other words, PU, PEOU, and PPS could influence attitude, which in turn influences consumer usage intention.

5.0.7 Relationship between social influence and behavioral intention towards e-wallet

The results showed that H_7 was accepted. There is a significant positive relationship between social influence and behavioral intention towards e-wallets. When numerous customers expressed their opinions and experiences with mobile wallet services on internet sites and media platforms, the results showed that consumers would use for the service. This finding was supported by the past studies of Teo et al. (2020), Chew et al. (2021), Azman et al. (2021), and Nag and Gilitwala (2019). According to Teo et al. (2020), the encouragement or support of their friends, colleagues, or families influences their intention to utilize e-wallets. When the government offered incentives for Malaysians to utilize digital wallets by e-Tunai, e-Penjana, and e-Pemula, the effect of variables, especially social influence, enhanced adoption. Besides, Azman et al. (2021) and Chew et al. (2021) which mentioned social influence is a significant factor to influence the digital wallet adoption, also stated that individuals in the surroundings who are important to them such as families, friends, relative and others will influence their intention to use a digital wallet.

5.0.8 Relationship between perceived ease of use and behavioral intention towards e-wallet

H_8 is accepted, as indicated by the outcome. There is a significant positive relationship between perceived ease of use and behavioral intention towards e-wallets. The findings found out that if an e-wallet is simple to use, Gen Z in Sabah, Malaysia is more likely to use it. The significant influence of perceived ease of use towards digital wallet adoption is in line with previous research on e-wallet adoption-related studies (Trivedi, 2016; Singh, 2019; Shankar & Datta, 2018; Karim et al., 2020; Chua et al., 2020; Singh et al, 2020). According to Trivedi (2016), PEOU is one of the main variables that influence digital wallet acceptance since customers expect a technological advance to make their lives easier and transactions faster. Moreover, Karim et al. (2020) and Chua et al. (2020) indicated that the association between PEOU and behavioral intention towards digital wallets is strongly associated, implying that the simpler an e-wallet is to use, the more beneficial it may be. Furthermore, Shankar and Datta (2018) also stated that customers will only use digital wallets if they find it easier to use than other traditional ways of payment transactions.

5.0.9 Relationship between perceived usefulness and behavioral intention towards e-wallet

H_9 is accepted, as indicated by the finding. The result showed the relationship between perceived usefulness and behavioral intention towards e-wallet is significantly related. This indicates that the higher PU of a digital wallet will lead to a positive result on consumers' intention to adopt it. Amin (2009), Trivedi (2016), Chawla and Joshi (2020), Chua et al. (2020), Tan et al. (2020), and Shankar and Datta (2018) all agreed with the findings. According to Shankar and Datta (2018), perceived usefulness is vital because consumers will accept digital wallets only if they find it beneficial to meet their requirements. They will also change to the next system for conducting financial transactions if they feel more advantageous at a lower or comparable cost. Furthermore, Amin (2009) and Chawla and Joshi (2020), who discovered a significant positive association between PU and behavioral intention towards e-wallet, stated that customers' desire to use digital wallet is stronger when they believe digital wallet is beneficial.

5.0.10 Relationship between perceived privacy and security and behavioral intention towards e-wallet

Based on the findings, H_{10} is approved. There is a significant positive relationship between perceived privacy and security and behavioral intention towards e-wallets. According to the findings, the better the perceived privacy and security, the more likely consumers are to use digital wallet services. Matemba and Li (2018), Soodan and Rana (2020), Amoroso and Watanabe (2012), Deka (2020), and Shin (2009) all agreed on this finding. According to a study by Deka (2020), the behavioral intention of young generation to adopt digital wallets is affected by perceived security. Businesses are advised to consider consumers' safety concerns, such as ensuring adequate protection against customer data and account information, which could direct to increased use of mobile wallets among youngsters in the long run. Furthermore, Soodan and Rana (2020) said that concerns about privacy and security related to internet and user identification network services are crucial in generating usage intentions. The findings also show that customer safety concerns have a larger impact on intention formation than the fear of losing personal info.

5.0.11 Relationship between government support and behavioral intention towards e-wallet

H_{11} is accepted, as mentioned in the outcome. This indicates that the association between government support and the behavioral intention towards e-wallet is significantly related. In other words, government support will influence customers' intention on adoption of digital wallet. The finding is back by the previous research (Si, 2022; Ojo et al., 2022; Chan et al., 2021). According to Ojo et al. (2022), government support has a significant impact on mobile wallet user acceptance since the user feels safe and protected adopting e-wallets because they understand the government is highly supportive of the action plan in terms of working with the industry and favourable policy implementation. In fact, the government has implemented appropriate activities such as e-Tunai, e-Penjana, and e-Pemula to encourage individuals to decrease direct contacts, hence limiting the transmission of virus. This also demonstrates that the Malaysian government's incentives and efforts have effectively influenced generation Z in Sabah, Malaysia to use e-wallets. Furthermore, Chan et al. (2021) noted that when the government encourages mobile wallet, Malaysian youngsters are more likely to use it.

5.1 Implication of Study

Several implications may be given to application developers, the government, and academic scholars for further research on this issue. It enables them to better understand the factor affecting Gen Z's behavioral intention toward digital wallets amid the Covid-19 epidemic in Malaysia. As a result, regulations, marketing tactics, and suggestions for further studies may be produced in more sophisticated ways.

To begin, the study's findings have assisted application developers by providing them with a critical perspective for designing and implementing digital wallet services that will enhance service acceptance. They may employ essential factors such like usefulness, privacy, ease of use, and security to create a reliable digital wallet application for potential users, since when the e-wallet is simpler to use, more Gen Z will use it as a form of payment. Furthermore, application developers may enhance payment methods that favor the efficiency and easiness of utilizing digital wallets, which would favor potential customers. Developers should be at the forefront in highlighting the necessity of encryption in a digital wallet system that safeguards all private info. They can take use of this opportunity to establish confidentiality and protection regulations so that people are reminded of the importance of securing their personal data from private information. This enables the consumer to accept a perception of asymmetric encryption without the risk of lost and stolen it.

In addition, there are also some implications for government. According to this research, government support is a crucial component in boosting the use of digital wallets. As a result, the government has promoted Malaysians to adopt digital wallets by offering rewards and incentives throughout this Covid-19 epidemic. Furthermore, the government should look into collaborating with digital wallet companies to consistently boost the use of digital wallets through appealing schemes provided to both consumers and businesses. For example, the government may offer additional efforts like rebates and coupons to encourage more consumers to use digital wallets in their daily tasks.

Lastly, scholars and researchers who intend to explore digital wallets in the hereafter may reap from this finding. According to the study, perceived privacy and security, ease of use, and social influence may significantly affect users' attitudes toward digital wallets, while the same three factors, along with government support and perceived usefulness, will influence users' behavioral intentions toward digital wallets. In the future, scholars and researchers may use certain parameters as a baseline to either eliminate unnecessary parameters or add new parameters to evaluate digital wallet use. Furthermore, scholars and researchers might use this study as a reference for further studies because there has been minimal research on digital wallets during this pandemic in Sabah, Malaysia.

5.2 Limitation of Study

Various limitations were discovered throughout this study. Academic scholars in the future may take these constraints into account in order to enhance their outcomes. First and foremost, the data collected for this study came from randomly surveys distributed to Gen Z in Sabah, Malaysia, with no gender differences. The outcomes also showed the survey consisted of 41.4% males and 58.6% females' participants. Different genders may have different viewpoints and acceptance of digital wallets; hence, the factors that affect their attitudes and intentions toward digital wallets may differ. As a consequence of these limitations in this research, the outcomes generated from this research might not be representational of the perspectives of all Gen Z in Sabah, Malaysia; hence, the precision of the findings would be lowered.

Secondly, the factual information for this research was gathered from generation Z, whose ages range from 18 to 25 years old. The outcome of this research could only reflect the views and behavioral intentions of the majority of Gen Z, not those of the general population. Digital wallets are aimed at people of all age groups, not just the digital natives. Consumers of various ages will also have various opinions and attitudes. As a result, these individuals' adoption or perception of digital wallets may differ from the viewpoints of survey participants.

Additionally, the information is gathered through completely random surveys distributed to Gen Z in the Penampang and Kota Kinabalu areas. The findings of this study may only indicate the perspectives and behavior intentions of a large percentage of Gen Z in particular locations, not those of Sandakan, Kudat, Tawau, and other areas. A person's viewpoint and willingness to use a digital wallet will shift over time. In other words, people's minds might be shaped by their previous viewpoints, experiences, attitudes, and assumptions. As a result, the degree of digital wallet adoption and the factors that influence their use may change as time passes, this also indicated that the outcome could be less precise in the future.

5.3 Recommendation of Study

In a nutshell, there are several recommendations for this research that academic scholars in the future might use to strengthen the restrictions. To begin, the academic scholars in future are advised to broaden the framework of the study through providing additional parameters such as gender in order to obtain more detailed information and enhance the study. Gender is mentioned as one of a key determinant when consumers are attempting to utilize a digital wallet as the reasons that lead female users to adopt a digital wallet may differ from those that motivate male users. Hence, this parameter could be included in the research

process as it might impact to the outcomes, resulting in more precise and highly reliable results.

Besides, academic scholars are encouraged to increase the range and generation of forthcoming survey respondents. The age group of the survey questionnaire might well be broadened by introducing additional generations such as generation Y, X, and baby boomers. People of various age groups have lived up under different circumstances, which may impact their attitude and access to digital wallet systems. Hence, there may be some fluctuation in the level of acceptability across various age groups.

Furthermore, in order to remove the constraint of the limited area of participants in the study, the data collected should comprise individuals from various areas in Sabah, Malaysia. In future research, academic scholars might not only consider Penampang and Kota Kinabalu as their targeted areas, but also Kudat, Sandakan, Kota Belud, Tawau, and other areas. Individuals living in different areas will have unique opinions and thoughts about digital wallet services. Hence, it is recommended that various areas of participants should be included within their dimensions to enhance the findings more reliable and specific.

5.4 Conclusion

To summarize, digital wallet usage among Generation Z in Sabah, Malaysia is acceptable and needs to be enhanced. In comparison to brick-and-mortar businesses, digital wallets are now the dominant trend in completing cashless interactions in developed countries. As a result, governments and e-wallet organizations may give knowledge and hard work in encouraging digital wallets in order to create a cashless economy.

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