INVESTIGATING FACTORS INFLUENCING
MALAYSIANS' INTENTION ON USE MOBILE
PAYMENTS SERVICE

LIU JING YI

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DECLARATION

We hereby declare that:

(1) This postgraduate project/case is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2) No portion of this research project/case analysis has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

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___LIU JING YI___   ___22ABM01251___   _____

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ABSTRACT

Since the rapid development of communication technology and the popularity of smart terminal devices, mobile phones have become a new method of accessing the Internet in recent years. As the basic application of the Internet, mobile payment is also expanding in market size, providing consumers with a more convenient payment experience. In the process of using mobile payments, consumers will be faced with a number of different influencing factors based on their individual subjective views, concerns about network security, etc.

The purpose of this paper is to examine the factors influencing consumers' willingness to use mobile payments based on understanding existing scholars' research on consumers' willingness to use mobile payments. The technology acceptance model is combined with the diffusion theory of innovation to examine the five factors that influence consumers' willingness to use mobile payment: perceived usefulness, perceived simplicity, perceived risk, compatibility, and subjective norms.

An online survey of Malaysian consumers was conducted based on the theoretical study described above, and 217 reliable data were collected. An empirical analysis of the factors influencing the intention to use mobile payments is conducted using SPSS data analysis software. In the study, consumers' attitudes toward mobile payment were significantly positively influenced by perceived ease of use, perceived usefulness, perceived risk, and subjective norm; compatibility did not significantly influence consumers' attitudes toward mobile payment. Based on the results of the research, this paper provides marketing suggestions tailored to the development of mobile payments.

Chapter 1：Introduction

1.1 Research Background

Over the past few years, network technology has rapidly advanced, resulting in a significant increase in coverage areas for internet access and improved interface capabilities in countries around the world, including Malaysia, (Subramaniam, 2021). A web survey carried out in January 2019 reports that 75% of Malaysians shop online and 58% use mobile devices for e-shopping purposes (KEMP, 2019). In other words, mobile devices like smartphones are becoming increasingly important in people daily lives.

The traditional PC terminal-based e-commerce model has given way to a mobile terminal-based e-commerce model. People's consumption will not be limited by time and space, as long as there is network coverage, they can conduct e-transactions and other mobile business activities anytime and anywhere (Anjali, 2020), that significantly improves the public's quality of life. In ensuring the success and sustainability of an m-commerce trading, the m-commerce sellers need to assure the e-buyers that the payment is securely and legitimately transferred into the seller's account or the mobile payment service is carried out efficiently and effectively.

In Malaysia, public policies that aim to encourage the Malaysians to move towards a cashless society have been introduced. In 2017, the Bank Negara Malaysia (BNM) released the Financial Sector Blueprint, that inspire to reduce the conventional practice of cheques issuance and replace the practice using mobile payments or

cashless transactions (Widjaja, 2016). In achieving the cashless society status, worldwide companies and government departments begin to adjust their payment systems to become mobile-ready. For example, Wal-Mart Stores, one of the world's leading retailers, has launched its own mobile payment system, Walmart-pay. Starbucks Corporation, the well-known coffee brand retailer, meanwhile has launched its own mobile payment app, Starbucks Wallet. In Malaysia, more than ten mobile payment applications, including Samsung Pay, Alipay, Grabpay, Vcash, Maybank QR pay, TnG, and others, are providing mobile payment services actively. Worldwide financial are participating in providing the mobile transaction systems and services as well.

Before the covid-19 pandemic, only 3.2 million mobile payment users had registered in Malaysia (Statista-MCMC, 2018), The reason is that people's attitude about using mobile devices for e-shopping is still uncertain (Ghazali, 2018). However, during the pandemic in 2021, Malaysia has seen a huge increase in the use of mobile payments, especially among urban residents. Mobile banking service was the most popular payment method (NUR, 2020). Meanwhile, the cell phone usage increases to 98.7% in 2021, as compared to 98.2% in 2020.In growing and sustaining an e-business, it is important for the e-sellers to meet or exceed the e-buyer's expectation. E-buyers may not be loyal to specific e-seller as a bundle of similar and compatible services and products can be sourced from other e-sellers. It's undeniable that the efficiency of a mobile payment system is a primary criterion that can determines the sustainability and expansion of an e-market. Personal internet usage in Malaysia increased from 89.6 percent to 96.8 percent in 2020 (ICT Use and Access by Individuals and Households Survey Report, Malaysia, 2021). This indicates that the use of cell phones

for internet access in Malaysia has become a major trend.

This pandemic and the rapid growth of cell phone penetration have helped greatly in advancing the rapid growth of digital finance in Malaysia. Add to this another major trend: the rapid growth of e-commerce, which has increased consumers' willingness to purchase goods and services online. However, all of these developments also pose challenges. There is a segment of the foreign worker and immigrant population in Malaysia, most of whom do not have bank accounts as they have very limited access to banking services in Malaysia. Like some developing countries, Malaysia still has a prevalence of unbanked people, and in rural and some underdeveloped areas, overly fragmented payment methods, and inadequate infrastructure make for low trust in electronic payments. And there is an opportunity for e-mobile payments to serve them by providing transparent and competitive digital remittance services.

In order to improve the retention rates and expand rates of users, optimize products, and increase consumers' willingness to use mobile payment platforms, it is very important to study the impact of users' willingness to use mobile payment. In order to develop mobile payments in Malaysia more effectively and more actively, we need to analyze these variables to determine what factors affect consumer willingness to use mobile payments. The purpose of this study is to examine the variables affecting mobile payment usage in Malaysia and how operators can adjust their sales tactics accordingly.

1.2 Problem Statement

Over the years, mobile payments have grown in full force and have impacted on the

growth of the economy and our daily life. The focus is on diversification, rapid development, penetration of multiple domains, and internationalization.

The Malaysian mobile payment service is growing strongly. The Malaysian version of Alipay was introduced in 2017 through a partnership between Ant Financial Services Company and Malaysian bank TnG (Aziz, 2017), which provides services such as cell phone recharge, utility payment, and some subway swipe code to pass the gate.   Then, the mobile payment service is used by many products and services – such as clothing, food, housing and transportation – sellers. In the food and beverage sector, apps such as Grabfood and Foodpanda have emerged. Grab has been used by more than 3,000 restaurants in Malaysia in 2019 (Grab MY, 2019) and launches the practice of direct mobile payment for taxi rides throughout Malaysia. Boost, Wechat Pay, AirAsia BigPay, GrabPay, MAE, FavePay, and Razer Pay all have strong leadership positions in the Malaysian mobile payment market by 2020, which illustrates its fast growth.

The "zero-touch finance" concept that has emerged from the pandemic has created new opportunities for mobile payment. The pandemic, government action control orders, and global economic panic have largely halt the Malaysia's real economy, while e-commerce has grown in popularity among those who are unable to leave their homes. Throughout the pandemic, an increasing number of consumers began to shop online using the mobile payment service to meet their daily consumption needs. According to the Visa Consumer Payments Attitude Survey's (2020) report, Since the start of the pandemic, cash usage has dropped by 64% in Malaysia, while mobile payment usage has risen by 18%. Between 2015 and 2019, 3.6 billion transactions

counts were recorded in Malaysia and the mobile payment usage growth by 16.2% (Cheong, 2021). During the pandemic period, the mobile payment usage growth by 30.2% increase or 5.5 and 7.2 billion transactions were recorded in 2020 and 2021. The e-Tunai Rakyat and ePENJANA programs were introduced by the Malaysian government in 2020 (Mahadhir, 2022) in an effort to increase consumption, advance digital adoption, and strengthen the Malaysian economy.

Despite government aid and the catalysis of the pandemic, Malaysia's mobile payment industry has grown,But the mobile payment industry in the country still faces huge limitations and deficiencies. which may become factors that prevent the further expansion and deepening of the mobile payment industry in Malaysian society.

First, Malaysia's mobile payment industry is fragmented. Compared to the highly integrated Chinese market, the Malaysian mobile payment industry has many large mobile payment software and companies. There are more than 53 mobile payment platforms for consumers to choose from in the Malaysian market (Gomes, 2022). Although not all of them are aimed at the retail market, there are as many as 5 of them with the highest usage. Meanwhile, WeChat Pay and Alipay account for 91% of all mobile payment usage in China by 2021 (Daxue Consulting, 2020). As a result, consumers are faced with many choices and may require many payment software to transact at different outlets or with others.

Secondly, the digital infrastructure is not well developed. in April 2020, Malaysia experienced a submarine cable failure that slowed down the internet speed in the

country and caused a lot of disturbance to the lives of the people (New Straits Times, 2020). Malaysia experienced widespread internet connectivity problems, showing the backwardness of Malaysia's internet infrastructure. Through perceived usefulness, When customers sense that mobile payments are simpler to use, they perceive that these payments are more beneficial, so consumers are more inclined to choose to use mobile payment (Jayantari et al., 2021). However, due to the uneven construction of signal infrastructure, the network speed in some areas is extremely slow, resulting in the complete inability to reflect their own convenience and encounter obstacles when using electronic payments. This may even lead to monetary loss for consumers who are using mobile payment when the barrier suddenly occurs. How to facilitate the technical transformation between payment software and banks to achieve interconnection and Increase consumer awareness of mobile payments has become a common problem for banks, merchants and   payment companies in Malaysia.

Finally,Merchant and public acceptance is not very high. Some Malaysians seem to be embracing this trendy payment method thanks to government promotions and digital bonuses etc., But, more needs to be done to increase acceptability generally. Many businesses still don't understand the full benefits of mobile payments to promote them properly, and some have misconceptions about how to use e-wallets. (Giachi, 2020). According to McKinsey & Company interviews in 2022 with Martha Sazon of Mynt, Anthony Thomas of MoMo, and Chris Yeo of Grab Financial Group, three frontier leaders in mobile payments. They believe that the biggest obstacle to mobile payments is people's education and awareness, because some people believe that after depositing funds into e-wallets, companies providing mobile payment services can use these funds as they please, such as for investment or expansion. Once

people get over the trust hurdle by recognizing the convenience and security of the service, then they will stick with it. And the current mobile payment has always been centered on the city, but there are many opportunities for expansion in small cities outside the traditional center, which is where the future growth lies (Reet et al., 2022). Such perceptions lead to difficulties in the diffusion of the mobile payment industry. By perceived risk, users choose a mobile payment platform by considering first and foremost security issues such as personal information of funds, and consumers are likely to choose mobile payments only if the mobile payment platform is secure enough. The government's challenge is to improve the public's mindset and increase the appropriate awareness of mobile payments.

Moreover, Credit and debit cards are widely used in Malaysia has prevented the general public from benefiting from the maximum "convenience" and "security" features of mobile mobile payment (Lim, 2021). On the other hand, there is also a considerable disparity in the acceptability of mobile payment between urban and rural areas. Due to disparities in infrastructure, such as networks, mobile payment acceptability in Malaysia's rural areas is far lower than in its urban areas. (Zixin et al., 2022). Retailers and customers in other regions have only a limited acceptance of online shopping, with the exception of major centers such as Kuala Lumpur, Johor, and Penang. Due to these factors, both consumers and businesses are developing e-wallet habits, but the acceptance and penetration rates are still low.

While Malaysia's mobile payment development has expanded and its growth rate is relatively fast compared to other countries, it remains relatively small in terms of overall user scale development when compared with other countries. Mobile payment

is still in its infancy in Malaysia, and some consumers have not yet become used to it. They still have some doubts about the new payment method, such as how safe it is, How simple it is to use, whether it fits into their existing lifestyles, and whether Will there be additional charges will all have an impact on how widely accepted and used mobile payment is.

1.3 Research Questions

The following are the study's research questions:

Malaysians' intention to use mobile payment services is related to the perceived ease of use and perceived usefulness of mobile services？

ii)What is the relationship between Malaysians' intention to use mobile payment services and perceived risk, subjective norms, and compatibility?

1.4 Research Objectives

From the perspective of Malaysian consumers, this study investigates the factors that influence their willingness to use mobile payments. A theoretical framework of the factors that influence users' willingness to use mobile payments is developed based on the technology acceptance model, which first summarizes the theoretical research and achievements of related scholars.

The project has two distinct goals, which are listed below:

i) To examine the effect of perceived ease of use and perceived usefulness of mobile services on the intention of Malaysians to use mobile payment services.

ii) To examine the effect of perceived risk, subjective norms and compatibility on the intention of Malaysians to use mobile payment services.

1.5 Significance of the Study

The purpose of this study is to examine the factors that affect Malaysian consumers' willingness and behavior with regard to mobile payments, as well as the factors that influence their willingness to use mobile payments.

1.5.1 Theoretical Significance

As a result of the above analysis, this study will summarize existing theoretical research on mobile payment and employ the Technology Acceptance Model (TAM) as its main research framework. The diffusion of innovation theory incorporates mobile payment characteristics, the perceived usefulness and perceived ease of use factors of the Technology Acceptance Model, subjective norms, perceived risks, and compatibility factors of consumers. Mobile payment usage intention is studied based on these five variables. The mobile payment research theory is enriched, and the mobile payment influencing factor model is improved. It is after collating all the factors that the final model framework for the paper is derived, and hypotheses about their correlation are presented.

Based on this, this study summarizes the theoretical research of existing scholars on mobile network payment, takes the Technology Acceptance Model (TAM) as the main framework of the research model in this paper, and combines the characteristics of mobile payment to combine perceived usefulness, perceived ease of use, and innovation Compatibility in Diffusion Theory, Consumers' Subjective Norm and Perceived Risk are five variables that are used as the influencing factors of mobile payment usage intention. It has improved the factor model that affects mobile payment willingness, and it has enriched the research theory of mobile payment. After

all the factors have been sorted out, a final model framework is established, and a hypothesis is presented for the correlation among them. It provides a complementary understanding of mobile payment to the theory and deepens our understanding of some aspects of mobile payment.

1.5.2 Practical significance

Because of the decline of traditional e-commerce and the popularity of mobile e-commerce, mobile payment begins to appear in front of the public and gradually has an impact on people's lives. Therefore, this paper focuses on mobile payments, summarizes existing research theories, presents a theoretical model that influences the intention to use mobile payments, and researches factors that influence that intention. In light of the research findings presented in this paper, the following practical implications can be drawn.

i). improved knowledge of the elements influencing people's intention to use mobile payments.

Consumers' intention to use mobile payments is significantly impacted by the factors that influence that intention. Subjective norms refer to the influence of consumers' surroundings when choosing third-party mobile payments. Only by identifying the fundamental factors that influence consumers' choices can we effectively understand the shortcomings of current mobile payment platforms and make corresponding improvements to address specific problems, thus promoting the rapid and healthy development of mobile payments.

ii). Promote the improvement of user experience

By examining the variables affecting Malaysian consumers' willingness to use mobile payment platforms, we can investigate the variables affecting consumers' selection of mobile payment platforms, improve the perceived value of mobile payment platforms among consumers, and thus promote mobile payment platforms to continuously improve their own products, so that consumers' experience can be continuously improved and bring more convenience and benefits to consumers.

Chapter 2 Literature Review

2.1 Overview of mobile payment

2.1.1 Definition of Mobile Payments

A key part of e-commerce has been mobile payment, which has penetrated into people's daily lives thanks to the continuous development of e-commerce in recent years. There is a difference in research understanding of mobile payment between domestic and foreign scholars. In 2004, Nambiar et al conducted a detailed study of mobile payment in the world. As part of their study on mobile payment behavior in e-commerce, they introduced the idea of mobile payment. To expand on the concept proposed by Nambiar, Ghezzi, Renga and others (2010) suggest that mobile payment refers to the practice of conducting financial transactions using mobile devices in a variety of wireless technology environments, including Bluetooth, Radio Frequency Identification (RFID), Near Field Communication (NFC). It is possible to use various types of mobile devices, including cell phones, smartphones, PDAs, and other wirelessly-connected devices, such as mobile phones, smartphones, and PDAs.

The industry of mobile payments, which started at the turn of the 20th century, has been growing and developing at the same time as the study of mobile payments. The research time has been very brief, and the definition of mobile payment has not yet been unified in academic circles. This study provides a chronological overview of the knowledge and research on mobile payments conducted by academics both domestically and internationally.

According to Heijden (2000), mobile payment is a practical and cutting-edge payment method that enables financial transactions via mobile networks within

organisations, between organisations and individuals, and between individuals. Heijden (2000) contends that mobile payments include the transactions involving multiple parties.

In the definition of the mobile payment method provided by Bohle and Krueger (2001), the two parties exchange data representing the same amount for a certain amount or deposit of a certain commodity or business through a mobile payment service provider, and the mobile terminal serves as the medium of transferring the data to the recipient for the settlement of the commercial transaction. According to Bohle and Krueger (2001), using mobile devices for payments is similar to using mobile communication devices, such as mobile phones and PDAs.

In terms of the Mobile Payment Forum's (2002) definition, a mobile payment (also known as a "Mobize payment") is a business transaction that occurs between two groups for specific goods or services using mobile devices, i.e. mobile terminals, which can be cell phones, Personal Digital Assistant System (PDAs), and mobile PCs, among other things. Mobile payments, according to Fraunhofer Fokus (2004), are any payments made using a mobile device. In this scenario, the payment can be started, activated, and/or confirmed using the mobile device.

2.1.2 Consumer Behavioral Intentions Research

Many academics have conducted extensive research on consumers' behavioural intentions since the 1970s, leading to the development of more sophisticated theoretical research models, including the TRA (Theory of Rational Behavior), the

TPB (Theory of Planned Behavior), and the TAM (Technology Acceptance Model), etc.

(1) Behavioral willingness research based on the TRA

A theory of rational action (TRA) originated in psychology and is used for understanding and predicting human behavior. The first time it was proposed was in 1975 by Ajzen and Fishbein. It is assumed that attitudes and subjective norms play a significant role in determining human behavior, including willingness to act. According to Blackwell (2011), intention to use refers to specific behaviors of users, which can be consumption behaviors or some behaviors for specific goals.

Based on the TRA theory, Vijayasarathy (2004) conducted an empirical analysis of consumers' online purchasing behaviour and discovered that consumers' online purchasing decisions were positively influenced by their attitudes towards and subjective standards for online consumption. As a result of the TRA and TAM theories, Nysveen et al. (2005) derived their explanation of mobile chat usage intentions.

(2) Behavioral intention research based on the TPB

Ajzen proposed the Theory of Planned Behavior (TPB) on the basis of research on TRA theory. Considering that individual behavior is not completely controlled by willpower, the model adds variables controlled by perceived behavior, which is also better than the TRA model. predictive and explanatory power.

The public's willingness to pay for nature tourism parks was studied using the TPB theory by Lu-Feng Huang et al. (2014). Through empirical research, they found that attitudes, subjective norms, and perceived behaviors all have significant positive effects on people's willingness to pay for nature tourism parks, with attitude having a stronger influence than either subjective norms or perceived behavioural control.Mohammed and Edward (2016) used the TPB theory to analyse consumer behaviour when using Islamic bonds in the Qatar region. They found that There is a significant relationship between consumers' attitudes and their behavioral intentions, as well as between consumers' perceptions of Sukuks and perceived behavior.

(3) Behavioral intention research based on the TAM

Davis (1989) made the initial suggestion for the Technology Acceptance Model (TAM), which was later developed by other researchers and is based on the evolution of TRA and TPB. According to this model, it shows that the user's behavior in accepting new things will be affected by it. It is believed that users' willingness, influenced by their attitudes and perceived usefulness, determines their acceptance behavior. Users' attitudes are affected by perceived usefulness and perceived ease of use, but perceived usefulness also affects perceived ease of use.

Despite its simplicity and high level of rigor and practicality, the technology acceptance model is widely used by consumers. Luarn and Lin (2005) found that self-utility, cost, credibility, and ease of use all play a significant role in determining user behavior intentions, in support of the TAM model. Their empirical research also found that self-utility, cost, credibility, and ease of use play an important role in determining user behavior intentions. By the Alain et al. (2012), "Trust" significantly

affects users' willingness to adopt m-commerce in both countries, and social factors also have an impact on Chinese users' willingness to adopt.

2.2 Relevant theoretical models

2.2.1 Theoretical models related to users' willingness to use

The next step will be to discuss that the theory of user intention to use has evolved from the initial Theory of Rational Actions (TRA) to the more mature Theory of Planned Behaviors (TPB) to the more mature Technology Acceptance Model (TAM).

(1) Theory of Rational Behavior

The Theory of Rational Behavior was advanced in the 1970s by two American academics, Fishbein and Ajzen (TRA).According to the TRA, subjective norms and behavioural attitudes are the main factors influencing users' willingness to use, suggesting that people can control their behavioral willingness through subjective factors and that people are reasonable.
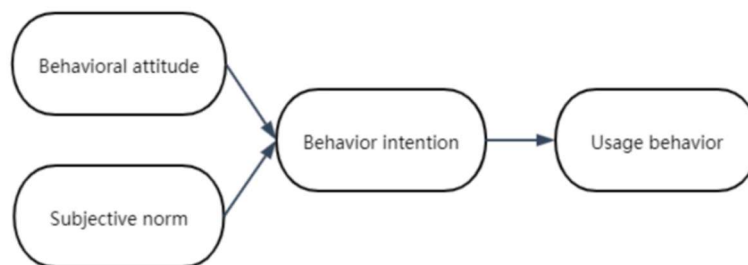
Figura 2-1 The Theoretical Framework of theory of rational behavior (TRA)

(2) Theory of Planned Behavior

According to Ajzen, when he was conducting the research that led to the Theory of Planned Behavior (TPB), he made the same claim. The willingness to act of a person is affected by a wide variety of non-subjective factors, as well as by behavioral

attitudes and subjective norms. He added the perceived behavioral control aspects to the TRA model due to the combined effects of these three elements on the user's willingness to act. Eventually, the Theory of Planned Behavior was developed. TRA is the theoretical basis for TPB, and the following diagram shows the model.
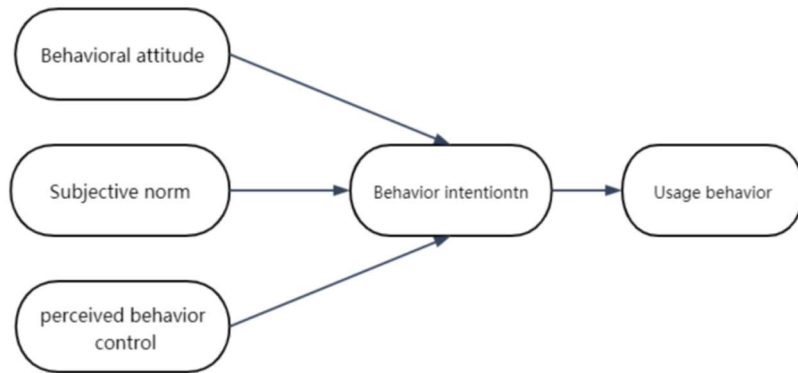
Figure 2-2 The Theoretical Framework of theory of planned behavior (TPB)

(3) Technology Acceptance Model

The Technological Acceptance Model (TAM) was first put forth by Professor Davis in 1989, while researching the elements influencing consumers' usage behaviour of computer information systems. The TRA and TPB are combined and improved in the TAM model.

Based on TRA and TPB theories, the TAM model incorporates three elements into its model of user intention to use: intrinsic variables (EV), perceived usefulness (PU), and perceived ease of use(PE).
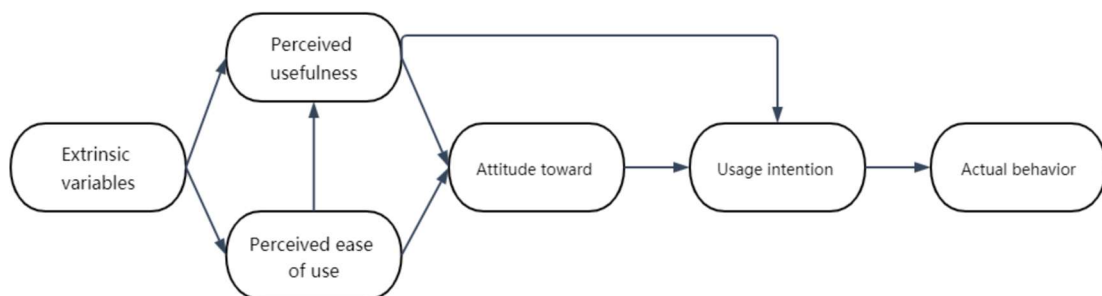
Fugure 2-3 The Theoretical Framework of technology acceptance model (TAM)

1

In TAM, "external factors" refer to the outside environment, and "perceived utility" refers to the user's assessment of how useful IT will be in supporting them achieve their job objectives. The PE is the user's assessment of the degree of complexity involved in utilising information technology and new technologies. It is simple to observe how the model's variables relate to one another thanks to the TAM model diagram. The diagram illustrates how external variables have an impact on both how useful the model is thought to be and how simple it is to use. Users' attitudes towards using the system are influenced by PU and PE, and each of these aspects individually affect users' perceptions.

2.3 Innovation Diffusion Theory

Innovation is the word employed to refer to an idea, a product, or a method that the person or group involved considers innovative, (Rogers, 1983). Following a thorough investigation, Rogers (1983) identified five factors, including relative advantage, compatibility, complexity, observability, and experimentability, that affect the diffusion of innovation.

The perceived superiority of the usage of an innovation is referred to as relative advantage. In the innovation investigations, Relative advantage was a crucial element influencing individual innovation uptake, according to Tornatzky and Klein's research from 1982. Consumers were more inclined to accept innovative items when they believed that the product had a relative advantage over the product they had previously used, according to a study on consumer adoption of novel technology.

When a new product is used by a user, compatibility refers to whether that product is compatible with the society's existing values or way of life (Ferster, 2017), that is, how well the new product integrates with the user's life. If a new product does not integrate well with existing social values, diffusion of innovation theory suggests that it will be much slower or harder to be adopted by the public.

Complexity is the measure of how challenging it is for people to comprehend and use innovation (Vagnani & Volpe, 2017). If a new product has more complex rules of use, then its acceptance may be relatively low, and most users prefer products with simple methods of use. In the theory of innovation diffusion, things or products with low complexity will diffuse relatively quickly, while products with high complexity will diffuse slowly. Complexity is generally recognized as a barrier to adoption (Tornatzky & Klein, 1982). Complexity in the technology adoption paradigm might be considered as the antithesis of perceived usability, according to Lederer et al. (1999).

Observability is the degree to which the effects of implementing innovation may be seen and shared with others (Rogers 2003). According to Rogers (1983), early adopters of innovations are more likely to believe this way than late adopters if the results of an innovation can be quickly recognised and shared, the dissemination of the innovation will be facilitated. The results are clear to see, and innovations can encourage discussion among coworkers and friends, produce the assessment data that adopters need, and promote the adoption and dissemination of innovations.

Trialability measures how easily a new idea can be used and evaluated on a small scale before being put into practise, and Rogers (1983) contends that if a new idea can

be tried out and implemented in a modest setting, it will reduce individuals' feelings of uncertainty about adopting the innovation and thus increase their acceptance of the innovation.

Adoption of innovations is significantly influenced by factors including relative advantage, compatibility, and complexity, among others (Tomatzky & Klein, 1982). As a result, the research of readiness to use mobile payment, which has some significance, can be applied the important theory factors.

2.4 Perceived Risk Theory

The term perceived risk was first coined by Bauer (1960), a scholar from Harvard University, who made the first application of the category of perceived risk in the field of marketing. He pointed out that consumers have an unpleasant or even fearful feeling when buying any product, and this unpleasant feeling comes from consumers' uncertainty about the quality of the goods they buy. This uncertainty is the original definition of this category.

After Bauer first defined the category of perceived risk, foreign scholars also began to study perceived risk. In 1967, Cox extended the concept of perceived risk based on Bauer's concept. He believed that every consumer would set a goal for his or her consumption behavior, such as the style and quality of the product he or she planned to buy. If a consumer perceives that the perceived risk of purchasing an item is too great, he or she will most likely not take the purchase action.In reality, consumers are able to perceive multiple types of risk, i.e., Perceived danger comes in a variety of forms.When Jacoby and Kaplan (1972) classified perceived risk into five categories,

2

they found that financial risk was the most important component, followed by functional risk, physical hazard, psychological risk, and social risk. According to Peter and Tarpey (1975), in addition to financial risks, psychological risks, etc., there is also a sixth dimension of perceived risk in consumer decision-making strategies. When consumers buy and use products, they should also take into account the risk of time waste.

A growing number of academics have begun studying perceived risk in e-commerce-related subjects as a result of the growth of e-commerce, and the characteristics of perceived risk in the e-commerce environment have also altered substantially. An overview of prior research was presented by Yang (2015), which concluded that perceived risks associated with online shopping could be categorized into five categories: perceived money risks, perceived privacy risks, perceived additional risks, reasoning risks, and perceived time risks. During the process of online shopping and payment by users, personal information can be leaked (e.g., phone number, browsing history, etc.), resulting in privacy risks. Gerrard (2003) in his study found that many shopping sites require sensitive personal information, and based on the fear of hackers, many users choose not to make product purchases online but in offline brick-and-mortar stores, so he added users' perceived privacy risk to the perceived risk dimension based on the e-commerce environment and used it to describe consumers' risk of personal information being stolen and then bought and sold.

By summarizing previous scholars' definitions, this paper defines perceived risk as the uncertainty and risk that users perceive when using mobile payments.

2.5 Development of hypotheses

2.5.1 Perceived ease of use (H1)

Consumer attitudes are strongly influenced by perceived ease of use, according to the technology acceptance model. Through empirical research, Davis (1986) was the first to show that perceived ease of use positively affects consumer attitudes. Meanwhile, Davis confirmed that PE and PU are closely related.

Customer perception of the usefulness of mobile payment is increased by making mobile payment easy to use and comprehend (Effendy et al., 2021).Contrarily, if mobile payment becomes more challenging and consumers believe that using mobile payment requires more time and effort, this might deter customers from using mobile payment and reduce their perception of its utility (Denaputri & Usman, 2019). In a theoretical analysis of technology adoption models, Davis (1986) found that PE had a significant positive impact on PU. Shih (2004) discovered empirically that customers' perceptions of usefulness had a favourable impact on their sentiments towards.

H1: Consumers' perceived ease of use of mobile payment relates to the consumers' usage attitude positively.

2.5.2 Perceived usefulness (H2)

Perceived usefulness is a significant component in determining consumers' views towards adopting mobile payment, argues the technology adoption model theory. The beneficial impact that perceived usefulness has on consumers' attitudes and intentions regarding adopting mobile payment was validated by an empirical study by Davis (1986). By the research, Effendy et al. (2021) discovered that attitudes about the

usage of e-wallets and intention to use them both significantly benefit from perceived utility. The more mobile payment can improve the quality of life of consumers and make their daily activities easier, the more likely they are to use it. According to Kahar et al. (2019), consumers' intentions to make purchases are significantly influenced by perceived usefulness. In their 2008 study, Au and Kauffman used a certain amount of empirical data to demonstrate users' readiness to embrace mobile technology. When a mobile payment system is practical for users' transaction needs, they will use it.

H2: Consumers' perceived usefulness of mobile payment relates to consumers' usage attitude positively.

2.5.3 Compatibility (H3)

In the innovation diffusion theory, compatibility is a crucial factor in determining whether or not a novel technology will be adopted (Dearing, 2009). Compatibility is a measure of how well novel technology fits into the existing values and lives of people. A high level of compatibility can show a strong relationship between new technologies and consumers' lifestyles or habits, which can help to lessen the uncertainty of new technologies (Su et al., 2018). According to Chen et al. (2019), compatibility influences customers' willingness to use mobile payments positively. Adoption attitudes are positively impacted by mobile services that are compatible with users' demands and lifestyles as well as by the opportunity to explore new services (Mallat, 2004). By their research, Moti and Walia (2020) discovered that customers' perceptions of mobile payment compatibility had a considerable positive impact on how useful they view mobile payments to be.

H3: The compatibility of mobile payment relates to consumers' usage attitude positively.

2.5.4 Subjective norms (H4)

Subjective norms are the effects of a consumer's surroundings on their decision to use mobile payment. For starters, when it comes to mobile payments, consumers are affected by their friends and family. Consumers will be more inspired to try mobile payment if they see friends or family members utilizing it. In addition, consumers use mobile payment software the same way their friends or relatives do so the costs associated with payment transaction charges can be reduced. Third, when consumers are in an environment where third-party payments are more convenient (e.g., third-party payment is convenient and offers shopping discounts), a positive experience will lead to consumers believing that mobile payments are easier to use and will influence their attitudes toward mobile payments. The study found that customers' usage intentions are influenced by subjective standards. Using college students as the study population, Through empirical research, Nayanajith and Damunupola (2020) demonstrated that subjective norms are significantly influencing mobile banking intentions. Subjective norms affect consumers' intention to use, according to a practical study by Schepers and Wetzel from 2007. According to Al Kurdi et al. (2021), who used survey data as their basis for their analysis, the intention to use social media networks is positively impacted by subjective standards.

H4: Subjective norm relates to consumers' usage attitude positively.

2.5.5 Perceived risk (H5)

In the United States, Baure (1960) presented perceived risk for the first time and has since been applied by many scholars in the study of user intention to use. The study shows that if users understand that there may be certain risks associated with a new technology or system, such as financial risk, event risk, etc., they may not agree with the new information technology. For mobile payment, there may be more risks, such as security risks, privacy risks, financial risks, etc., and there is a high risk of leakage of personal information and payment passwords when users use mobile payment. The results of Kalini et al. (2019) and Lara-Rubio et al. (2021) demonstrate that consumers' intention to use is not directly and negatively impacted by perceived danger.

H5: Perceived risk related to usage attitude negatively.

2.6 The Proposed Conceptual Framework

Because of the proliferation of mobile Internet, the market for mobile payments is destined to experience a period of rapid development. Mobile payments are a hybrid financial system that combine aspects of traditional third-party payments and mobile Internet access. Because of the influence of personal subjective elements, security concerns, and technological advances, consumers face a more complex set of factors when choosing a third-party mobile payment option. The paper combines innovations diffusion theory with technology acceptance models to examine the factors that influence the intention to use mobile payments using the existing research on mobile payments.

Since the technology acceptance model (TAM) focuses only on users' subjective perceptions and does not measure factors such as social influences,In this study, the

research model that is built on includes consumers' subjective norms as influencing factors. This is done to assess the impact of a consumer's social environment on their decision to choose a mobile payment method.

After conducting a thorough study of the available research, Rogers (1983) identified five key factors that affect how quickly innovations are adopted: relative advantage, compatibility, complexity, observability, and experimentability. Taylor & Todd (1995) pointed out through empirical research that "relative advantage" in innovation diffusion theory can be combined with "perceived usefulness" in the theoretical model of technology acceptance. The "perceived usefulness" can be a substitute for "comparative advantage".

Taylor and Todd observed in their study that the compatibility between the theory of the spread of innovation and the two influencing factors in the model of technology adoption may simultaneously affect customers' opinions towards usage. This was one of the key takeaways from their investigation. Moreover, Lederer et al. (1999) showed that perceived ease of use might cover complexity in the theory of the diffusion of innovations. To put it another way, perceived ease of use can cover complexity related measures. The theoretical model of this study includes the influence aspect of compatibility in this project.

Due to the financial transactions involved in third-party mobile payments, transactional and financial security considerations will be present throughout the entire use process. As a result, the variable of perceived risk is included in this study's analysis of the variables influencing consumers' intention to use mobile payments.

Overall, this study provides a comprehensive overview of existing theories about mobile payments from scholars. A technology acceptance model and innovation diffusion theory are integrated into this study to study five factors influencing the intention to use mobile payments: PU, PE, perceived risk, compatibility, and subjective norm. The specific research model is shown in Figure 2-4.
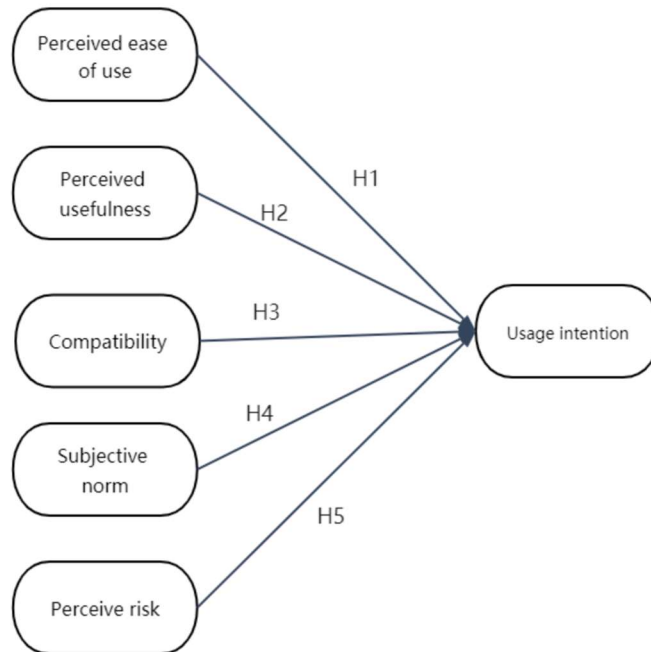
Figure 2-4 Research model

Chapter 3: Methodology

3.1 Research Design

The results of the research have been tested in the literature because numerous researchers have conducted a great deal of research on the readiness to use mobile payment based on TAM in the past. Therefore, it is not essential to utilise qualitative techniques to check the accuracy of the TAM variables' measurement items. Table 3.1 shows that past studies using TAM in different contexts mostly used quantitative methods to collect data.

Research methods should be chosen according to the research purpose and context (Hammersley, 2014). Similar to the data collection methods of past studies, this project used structured questionnaires to collect quantitative data. Due to the fact that quantitative data enables academics to employ statistical analysis to check the authenticity and trustworthiness of data gathered from various views on the same subject by various scholars (Miller et al., 2005).

Table 3.1: The research methods used in past studies

Authors' name (year)	The source of data
Mun et al. (2017)	Quantitative (questionnaire)
Ariffin & Lim (2020)	Quantitative (questionnaire)
Altounjy et al. (2020)	Quantitative (questionnaire)
Pengurusan (2019)	Quantitative (questionnaire)

3.2 Sampling Design

3.2.1 Target Population

Since mobile payment is a relatively new technology, participants in this study must have used, heard of, or at least had knowledge of mobile payment services in order to assess the factors that influence consumers' readiness to use mobile payment. The age range of 25 to 34 is identified by Alam et al. (2021) as the most popular mobile payment group in Malaysia. Mobile payments are more popular among young people and students, now that information technology has advanced and cellphones are more common (Uzairi et al., 2021). So, people who have lived in Malaysia for a long time and are between the ages of 20 and 35 make up the study's target demographic.

3.2.2   Sample Size

It is recommended that the sample size be at least 10-25 times the number of variables in order to get a better and more accurate analysis of the data (Roscoe, 1975), which means that there should be at least 100 samples taken overall. A minimum of 210 questionnaires should be sent out for this survey because there are 21 variables or questions in this study.

3.2.3 Sampling method

This study uses the snowball method for questionnaire distribution, because through this snowball sampling, current researchers can obtain more accurate and more representative population data. This method is simple and easy to collect the required data more simply and conveniently. . The specific method is as follows: firstly, the researchers randomly send questionnaire links to qualified users from among the classmates and friends around them through the social network platform, and then ask

hem to share the electronic survey with the people in their immediate family, circle of friends, or workplace. This continuous process continues until enough data is collected for statistical analysis.

3.3 Data Collection Method

This study aims to investigate the factors that influence customers' intention to use mobile payments, so respondents must have specific experience using mobile Internet. Therefore, the questionnaire surveys are conducted online. In order to ensure the scientific nature of the experiment, we distributed questionnaires through the online survey platform Questionnaire in Google Form, and conducted electronic surveys through Facebook, Twitter, WhatsApp and other social tools. The questionnaire in Google Sheets was used to simplify data collection as it is more user-friendly. As long as they have access to the internet, respondents can complete the survey whenever and whenever they like, which allows for the convenient distribution of the questionnaire to respondents. In addition, due to the pandemic, the use of electronic questionnaires is relatively safe, and data collection through online platforms can reduce the risk of face-to-face transmission.

3.3.1 Pilot Study

After the draft questionnaire was reviewed by the project mentor, the researcher invited the respondent representatives to conduct a pilot test. The revised questionnaire was distributed to the six respondent representatives so that their perceptions of the questionnaire items and feedback on the content could be collected. The researcher created a social media group for a 30-minute discussion with the respondent representatives, allowing the respondents to discuss the clarity of the

stated content of the item questions from their understanding. All respondent representatives were able to understand the questions well. After the discussion of the item questions was conducted, in order to determine the Cronbach Alpha score for each variable, the researcher asked the respondent representatives to complete the questionnaire. This allowed the researcher to assess the reliability of each variable. The reliability results are presented in Table 3.2, with reliability coefficient scores above 0.6 for each variable.

Table 3.2 Cronbach's Coefficient Scores for Pilot Test Variables

Variables	Number of Items	Cronbach's Alpha
Intention to Use mobile payment	4	0.814
Perceived ease of use	3	0.652
perceived usefulness	4	0.774
Compatibility	3	0.739
Subjective norms	3	0.693
Perceived risk	4	0.684

3.4 Questionnaire Design

This section, which is based on the theoretical research paradigm, focuses on employing questionnaires to assess the study hypotheses. This study predominantly uses the measurement scales of Roger (1983), Moore & Benbasat (1991), Taylor & Todd (1995), and others when designing its questionnaires. However, it makes appropriate adjustments to the necessary questions in light of the actual mobile

payment scenario. The questionnaire was subsequently modified in light of the results of in-depth interviews with customers to describe the factors that affect consumers when making a decision about mobile payment.

There are two sections to the questionnaire. In the first section of the questionnaire, respondents are asked for basic information such as their gender, age, education, average monthly spending, frequency of using the original mobile payment, and current mobile payment platform. In the second part of the study, a questionnaire is used to examine the factors that influence the use of mobile payments. There are six sections, all evaluating compatibility, subjective norms, perceived ease of use, perceived value, perceived risk, and intention to use.

3.5 Measures of Current Research Structure

This study uses a questionnaire approach to collect the data required for the empirical analysis. Data on demographics and user characteristics are presented in the first section of the design questionnaire, while data on iterative learning are presented in the second section.

Among the basic details collected in the first section of the questionnaire are the respondents' gender, age, occupation, and other details. Respondents must respond based on their current condition, as well as the subjective standards, compatibility, and attitudes of users. The survey used a 5-point Likert scale, which asks consumers to assess each topic based on their knowledge and understanding of mobile payment. "Strongly agree" is a score of 5, "somewhat agree" is a score of 4, "not so sure" is a

score of 3, "somewhat disagree" is a score of 2, and "strongly disagree" is a score of 1.

The relevant measurement scales appropriate for mobile payment are extracted in this study after reading a significant amount of technological acceptance models and related research literature on the topic. This is done by summarising the variable measurement scales of previous researchers. Also, the essential measurement components are correctly modified to make them more suitable when taken into account with the actual conditions of mobile payment. The five variables and the structure of the measurement questions are defined operationally as follows.

Table 3.3: Current Studied Variables Measurement Scale

Variable	Measurement question	References
Compatibility	I think using mobile payments is compatible with my lifestyle	Roger(1983),Moore& Benbasat(1991),
	I think using mobile payments can meet my daily needs	Taylor&Todd(1995)
	I think mobile payment can make my life more convenient	
Subjective norm	I am surrounded by friends and colleagues who use mobile payment	Cordano (2000), Bhattacherjee (2000)
	My friends and colleagues around me are more in agreement with my use of mobile payment	
	The store or online store i often go accepts mobile payments	
Perceived	It is not difficult for me to become proficient in using	Davis (1989),

ease of use	mobile payments.	Taylor&Todd(1995),
	It does not take much time for me to learn how to use mobile payment	Bhattacherjee (2000)
	The mobile payment page is easy to use	
perceived usefulness	Using mobile payments can improve transaction efficiency	Davis（1989）,Taylor & Todd
	Using mobile payment saves me the inconvenience of paying with cash	（1995）,Bhattacherjee
	Mobile payment can bring some fee discount	(2000)
	It is easier to manage money with mobile payment	
Perceived risk	I am worried that my personal information will be leaked if I use mobile payment	Bauer（1960）,Eastin
	I am worried that my account password will be stolen if I use mobile payment	（2002),Chahal et al.
	I am worried that my transaction information will be leaked if I use mobile payment	(2014)
	I am worried that my money will be lost if I use mobile payment	
Usage intention	I have a positive attitude towards mobile payments	Davis（1989）,Nysveen
	I am willing to give priority to mobile payments	et al.(2005),Karjaluoto
	I am willing to recommend mobile payment to my friends around me	H et al.(2014)
	If I have already used mobile payment services, I will continue to use	

3.6 Data Analysis Tool

Descriptive and inferential analysis will be used in this investigation.

3.6.1 Descriptive Analysis

The descriptive result might provide an overview of demographic data distribution. Descriptive analysis requires summarising and organising data in an understandable manner (Narkhede, 2018). Such as standard deviation and variance, are all included in descriptive statistics. Descriptive statistics are utilised where appropriate.

3.6.2 Reliability Analysis

The consistency and stability of the findings of repeated measurements of the same indicator using the same equipment and measurement method are referred to as reliability analysis. In social science studies, the reliability of specific attitude scales, such as intention to use, is examined using content consistency reliability. There are many factors that affect the reliability of questionnaires, and they can be broadly divided into those who create the questionnaires and those who are surveyed (Taber, 2017).

From the perspective of the questionnaire maker, if the questionnaire maker specifies the scale with ambiguous semantic expressions or subjective factors, or does not refer to the research of authoritative scholars, the reliability of the questionnaire will be affected; from the perspective of the respondents, if the respondents do not think through the questions or do not think clearly, the reliability of the questionnaire will also be affected.

Cronbach's alpha reliability was applied in this research. Typically, Cronbach's alpha ranges from 0 to 1. The more closely the reliability value approaches one, the more reliable and consistent the questionnaire is; conversely, the closer the reliability value approaches zero, the less reliable and trustworthy the questionnaire is. In general, when the internal consistency coefficient value is less than 0.7, the reliability of this questionnaire is poor and cannot reflect the actual problem, so the relevant questions of the questionnaire must be modified; This questionnaire's reliability is acceptable when the internal consistency coefficient value is between 0.7 and 0.8. This questionnaire's reliability is acceptable when the internal consistency coefficient value is between 0.7 and 0.8. When the internal consistency coefficient is more than 0.9, the questionnaire's internal consistency is excellent and it is more dependable (Ursachi et al., 2015).

3.6.3 Validity Analysis

Validity refers to the degree of accuracy of a scale or instrument used to measure an indication, i.e., the discrepancy between survey results and actual expectations. Validity analysis is carried out in this study to determine whether all of the questions are relevant to the topic of mobile payments. Construct validity, content validity, face validity, and criteria validity are the four categories of validity measures that are both separate and related (Middleton, 2019). Construct validity and content validity are used in this study.

The questionnaire's congruence with the measuring issue is referred to as content validity, i.e. mobile payment. The scales developed in this work are based on scales developed by relevant authority scholars, and the majority of these mature scales have

been widely utilised in numerous fields of research, indicating that this questionnaire has strong content validity.

Structural validity refers to the coherence of the retrieved scale data with the starting assumption. For instance, six variables were listed in this study: compatibility, subjective norms, user attitudes, PE, PU and perceived risk. The structural validity of the questionnaire was utilised to determine whether the measures under each variable would point to the variable they were measuring following validity analysis. In social science research, factor analysis is widely used to evaluate the structure of questionnaires.

3.6.4 Correlation analysis

The correlation coefficient, a technique for evaluating the strength of the link between two variables, is a common way to describe the correlation coefficient. A technique for determining whether there is a particular connection between two variables is correlation analysis (Franzese & Iuliano, 2019). When two variables exhibit a positive correlation, they change simultaneously while when they exhibit a negative correlation, they move in opposite directions (Gogtay, 2017).

The questionnaire questions in this study will be evaluated using a Likert scale, making each variable a continuous variable. To show the relationship between two variables in social science research, Pearson's correlation coefficient is frequently used. The first step is to evaluate the reliability of theoretical models using correlation coefficients. In order to make each variable in this study a continuous variable, the questionnaire items will be graded on a Likert scale. The Pearson's correlation

coefficient is widely used in social science research to illustrate the relationship between two variables. Correlation coefficients are used as a first step in evaluating the validity of theoretical models. The validity of theoretical models is initially assessed using correlation coefficients.

3.6.5 Regression analysis

In order to identify whether there is a relationship between two or more variables, correlation analysis is utilised, but it does not reveal the precise nature of that relationship. Regression analysis is therefore utilised in this part to determine how much the independent factors affect the dependent variable. This section makes use of multiple linear regression analysis to examine how each variable affects consumers' perceptions of and intentions for using mobile payment.

CHAPTER 4: RESULT AND DISCUSSION

4.0 Introduction

The purpose of this chapter is to provide evidence to support the theoretical hypotheses and research models put forward in the project through the analysis of sample data. These results will be presented and discussed in the following topics.

4.1 Descriptive Result

4.1.1 Survey Responses

A total of 221 answered questionnaires were collected in this survey. Excluding 4 of the questionnaires with incomplete answers, the total number of complete and valid questionnaires that were statistically tested was 217.

4.1.2   Respondent Demographic Profile

As shown in Table 4.1, more female respondents than male respondents completed the survey (50.2%). Female respondents made up 49.8% of the total. Respondents between the ages of 21 and 25 constitute the largest percentage (51.2%), and respondents above the age of 31 make up the smallest proportion (13.4%). Respondents with a bachelor's degree, which is the highest percentage, are 46.5%, while those with only a high school diploma are the lowest.

As for ethnicity, 59.9% of the respondents are Malaysians, 35.5% are from China and 5.5% are Indians. Referring to the average monthly expenditure, 32.3% of people spend 1501-2500 yuan on average, accounting for the largest part, and 17.1% of people spend 800 yuan or less on average, accounting for the last part. Regarding the

frequency of using mobile payment, 57.1% of the respondents said that they use it every day, and 10.6% said that they use it only once a month.

Table 4.1: Distribution of Demographic Profile

Question	Item	Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Your gender	Female	109	50.2	50.2	50.2
	Male	108	49.8	49.8	100.0
Your age	20 and below	35	16.1	16.1	16.1
	21–25	111	51.2	51.2	67.3
	26–30	42	19.4	19.4	86.7
	31 and above	29	13.4	13.4	100.0
Your education level	SPM and Lower	25	11.5	11.5	11.5
	Diploma	22	10.1	10.1	21.6
	Bachelor Degree	101	46.5	46.5	68.1
	Master and Higher	69	31.8	31.8	100.0
Your ethnicity	Chinese	77	35.5	35.5	35.5
	Indian	12	5.5	5.5	41.0
	Malay	128	59.0	59.0	100.0
Your average monthly expenditure	800 and below	37	17.1	17.1	17.1
	801–1500	63	29.0	29.0	46.1
	1501–2500	70	32.3	32.3	78.4
	2501 and above	47	21.7	21.7	100.0
How often you	Once a month	23	10.6	10.6	10.6

use	mobile	Once a week	36	16.6	16.6	27.2
payments		2-3 days once	34	15.7	15.7	42.9
		Every day	124	57.1	57.1	100.0

4.2 Inferential Result

4.2.1   Reliability Result

The overall dependability of the questionnaire is displayed in Table 4.2. Usually speaking, a high level of reliability is indicated by the questionnaire's Cronbach's Alpha, which is higher than 0.8. In general, Cronbach's Alpha has a strong reliability value between 0.7 and 0.8. A Cronbach's Alpha value between 0.6 and 0.7 indicates satisfactory reliability. Cronbach's Alpha below 0.6 indicates poor dependability. The reliability values of subjective norm, PE, PU, perceived risk, and usage intention are 0.878, 0.885, 0.879, 0.891, and 0.883, respectively. Compatibility has a reliability value of 0.872. The fact that all of these dependability scores are higher than 0.8 and very nearly 0.9 demonstrates the strong reliability of the data.

Table 4.2 Reliability Statistics

Variable	Cronbach's Alpha	N of Items
Compatibility	.872	3
Subjective norm	.878	3
Perceived ease of use	.885	3
Perceived usefulness	.879	4
Perceived risk	.891	4
Usage intention	.883	4
Cronbach's Alpha	N of Items	

.884	21

4.2.2   Normality of Data Distribution

The Q-Q plot for each variable data is shown at Figure 4.1. As can be seen from the figure, most of the points on the Q-Q plot are distributed on the straight line of the theoretical distribution, indicating that they are approximately the normal distribution.

Figure 4.1: Normality Data Distribution for Each Variable

V1：Perceived ease of use	V2: Perceived usefulness
V3: Compatibility	V4: Subjective norm

Normal Q-Q Plot of Compatibility	**Normal Q-Q Plot of Subjectivenorm**
V5: Perceived risk	DV: Usage intention
Normal Q-Q Plot of Perceivedrisk	**Normal Q-Q Plot of Usageintention**
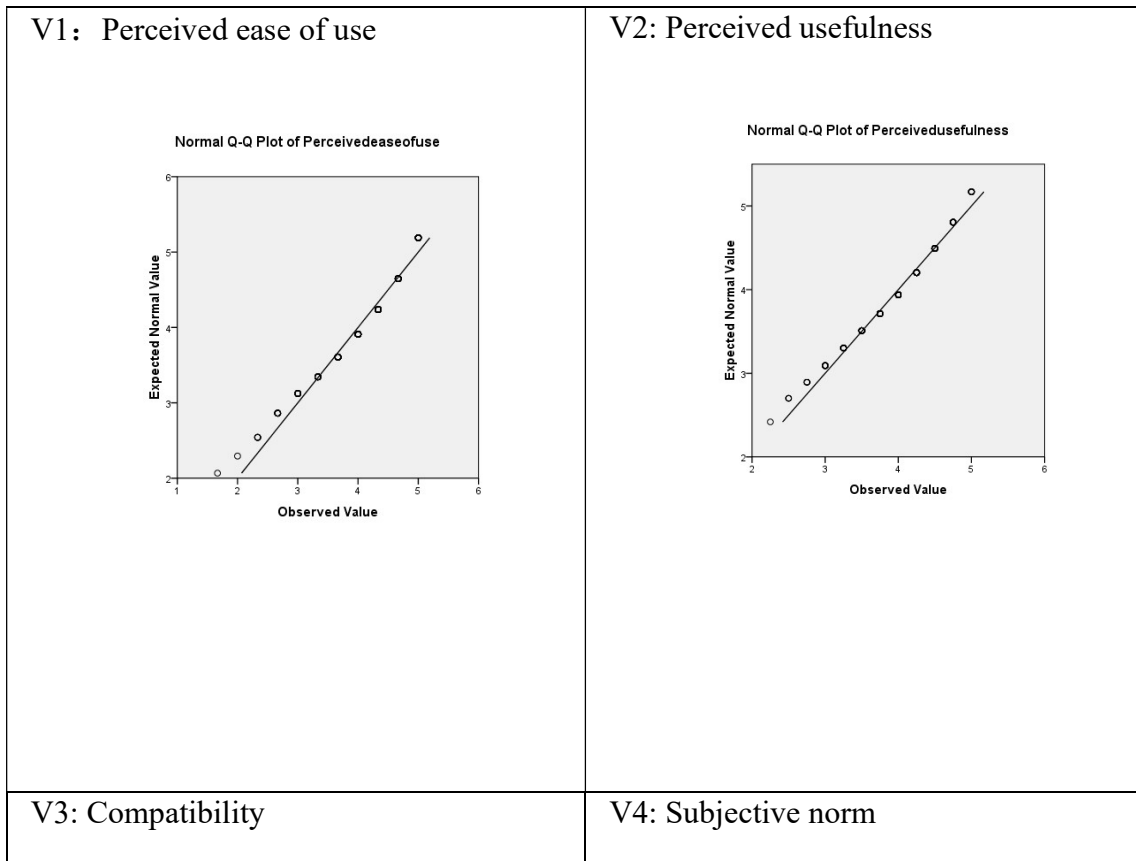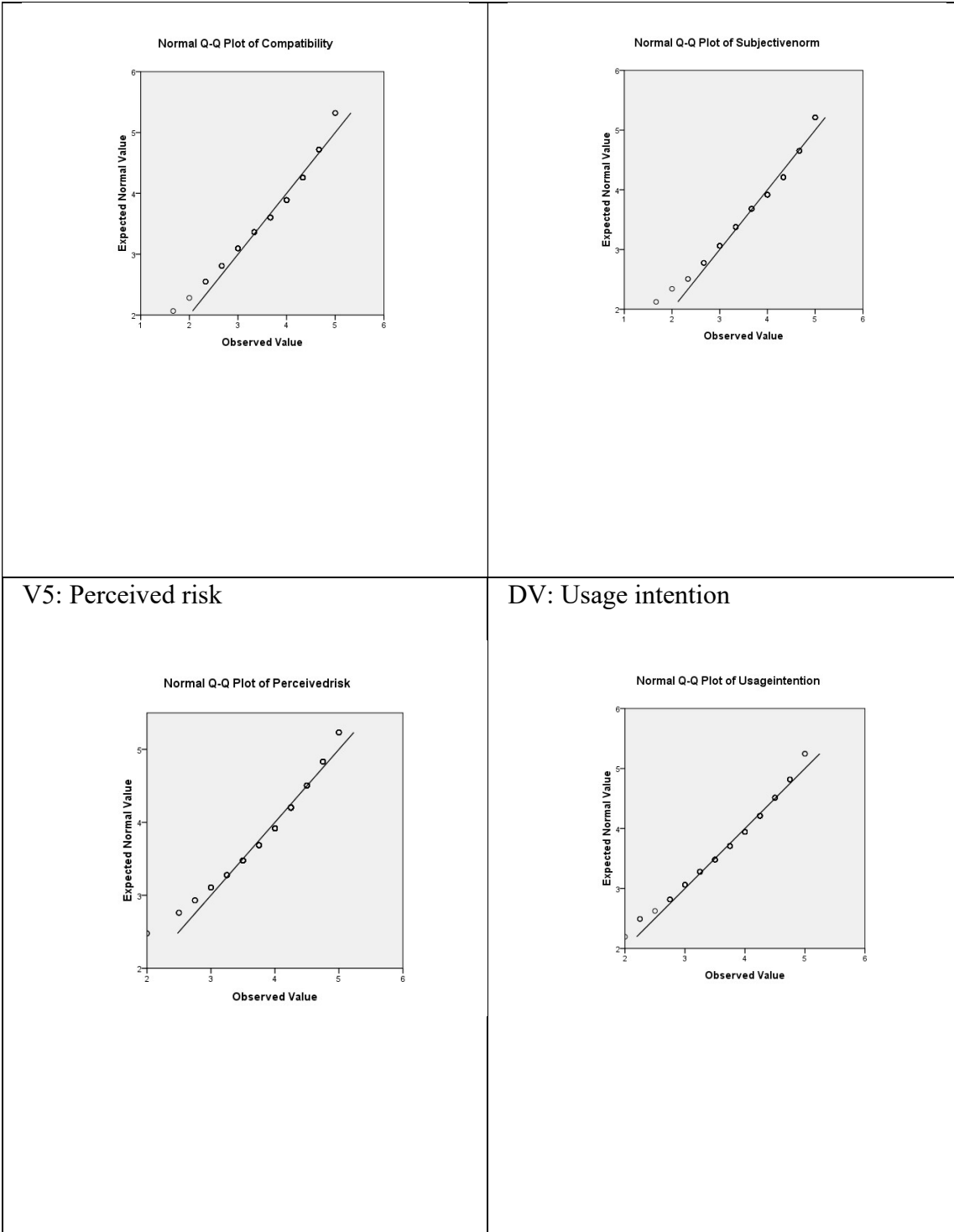
4.2.3   Correlation Result

Correlation analysis is carried out on all numerical variables. Correlation coefficient ranges from -1 to 1. Positive correlation is defined as a correlation coefficient over 0 and negative correlation as one below 0. The correlation is stronger and weaker

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depending on how near the correlation coefficient's absolute value is to 1 and 0 respectively.

Table 4.3: The Pearson's Correlation Coefficient Scores

	Compatibility	Subjective norm	Perceived ease of use	Perceived usefulness	Perceived risk	Usage intention
Compatibility	1	.323**	.352**	.295**	-.274**	.245**
Subjective norm	.323**	1	.310**	.272**	-.209**	.319**
Perceived ease of use	.352**	.310**	1	.438**	-.351**	.077
Perceived usefulness	.295**	.272**	.438**	1	-.357**	.463**
Perceived risk	-.274**	-.209**	-.351**	-.357**	1	-.323**
Usage intention	.245**	.319**	.077	.463**	-.323**	1

**.Correlation is significant at the 0.01 level (2-tailed).

4.2.4   Multicollinearity and Multiple Linear Regression Results

The dependent variable is use intention, while the independent variables are compatibility, subjective norms, perceived ease of use, perceived utility, and perceived risk. Regression analysis was performed on these variables.

Table 4.4: Regression's Model Summary Result

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.727	.529	.518	.59038	1.980

multiple linear regression model's R square reflects its fitting degree. The R square is 0.529 in Table 4.4, which is higher than 0.5 and indicates that the model fits the data well. The adjusted R-square is more accurate than R-square. Because no matter whether the new variables are significant or not, the addition of new variables can increase R, but adjusted R square can punish the added non-significant variables (Field, 2013).The model's fit result is good, and the dependent variable can explain the change in 51.8% of the independent variables, as indicated by the adjusted R square of 0.518, which is larger than 0.5. Durbin-Watson values are distributed between 0-4. As the Durbin-Watson value approaches 2, the data becomes more independent. The Durbin-Watson value in the table is 1.980, which shows that the observed values are independent.

The significant outcomes of the model are reflected in the ANOVA test result in Table 4.5. The fitted equation is considered to be statistically significant because the fitted equation's f-value is 30.926 and its p-value is 0.000, which rejects the initial hypothesis.

Table 4.5: ANOVA of Regression Result

Sum of Squares	df	Mean Square	F	Sig.

Regression	31.543	5	6.309	30.926	.000
Residual	42.988	211	.204		
Total	74.531	216			

This table displays the significance and multicollinearity of the coefficients of the multivariate regression analysis. Based on table 4.6, perceptions of ease of use, usefulness, and risk are statistically significant when their significance values are less than 0.05. Accordingly, these four characteristics are most likely to affect mobile payment usage among customers. The multiple regression equations would like to be expressed as

$$Usage\ intention = 1.628 + 0.227 * Subjective\ norm + 0.267 * Perceived\ ease\ of\ use$$
$$+ 0.183 * Perceived\ usefulness - 0.177 * Perceived\ risk$$

Data from the table's final two columns serve as collinearity statistics indicators. It is thought that there is a major multicollinearity issue amongst variables when the VIF value is more than 10. (Toothaker & Larry, 1994). The values of VIF in the table are all less than 10, which is considered to be consistent with the hypothesis of multivariate linear analysis and there is no multicollinearity problem.

Table 4.6 Coefficients of multiple linear regression

Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
B	Std. Error	Beta			Tolerance	VIF

	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	1.628	.591		6.137	.000		
Compatibility	.144	.062	.049	2.201	.052	.979	1.021
Subjective norm	.227	.061	.528	3.422	.001	.989	1.011
Perceived ease of use	.267	.059	.549	3.653	.000	.985	1.016
Perceived usefulness	.183	.073	.326	2.756	.033	.982	1.018
Perceived risk	-.177	.070	.450	-2.385	.024	.990	1.010

Finally, the linear link between the significant IV and DV is then confirmed by plotting a typical P-P plot, as seen in Figure 4.2. The most of the points are scattered about the diagonal, so it can be considered that the residual obeys normal distribution and meets the conditions of multiple linear regression. It shows that the significant IV is linearly correlated with the DV and reconfirms the linear relationship between the variables.

Figure 4.2: The Normal P-P Plot of Regression Standardised Residual for Intention to use mobile payment in Malaysians

Normal P-P Plot
Dependent Variable: Usage intention
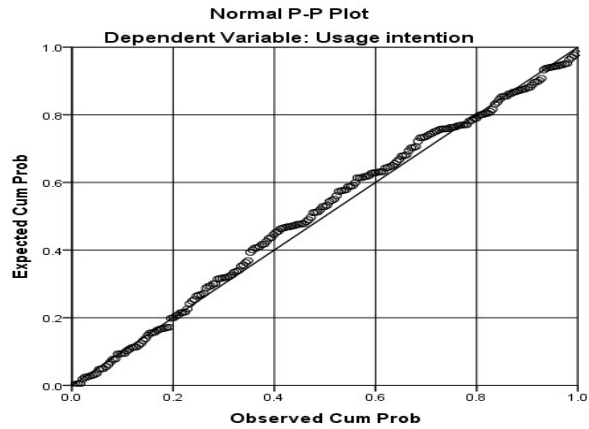
4.3 Current Developed Research Model

Based on the above outcomes, Figure 4.3 shows the conceptual model for this study.

Figure 4.3 Current Developed Research Model
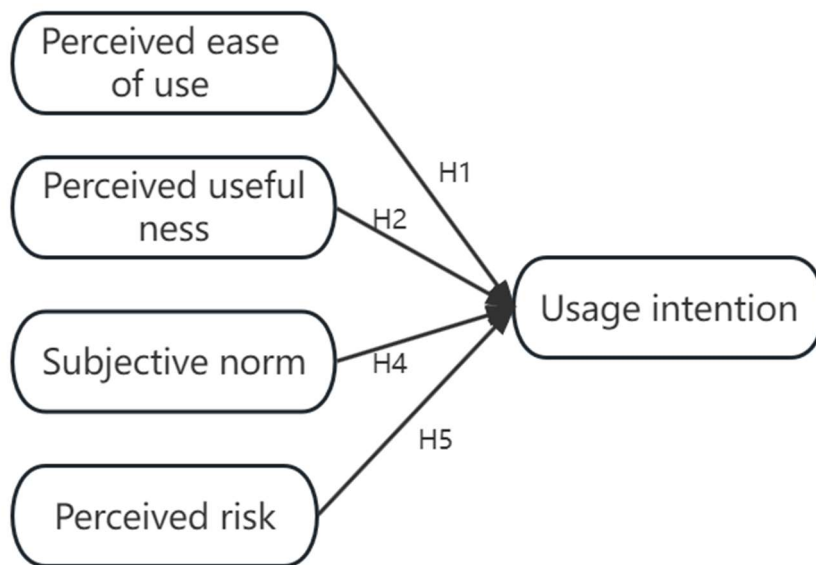
4.4 Conclusion of the Statistical Result

Among the regression results, the most influential variable is perceived ease of use, because its corresponding regression coefficient is the largest. Perceived risk is the least significant variable, and its corresponding regression coefficient is the smallest. Confirmation of the current hypothesis is shown in Table 4.7.

Table 4.7: The Summary of the Confirmation of Current Hypotheses

	Details of the Hypothesis	Remark
H1	Consumers' perceived ease of use of mobile payment relates to the consumers' usage attitude positively.	Supported
H2	Consumers' perceived usefulness of mobile payment relates to consumers' usage attitude positively.	Supported
H3	The compatibility of mobile payment relates to consumers' usage attitude positively.	Not Supported
H4	Subjective norm relates to consumers' usage attitude positively.	Supported
H5	Perceived risk related to usage attitude negatively.	supported

CHAPTER 5: CONCLUSION AND IMPLICATION

5.1 Accomplishment of Research Objectives

In order to determine whether there is a correlation between the variables in this study, the research data were collected and organised using the questionnaire survey method. The precise degree to which each variable affected consumers' intentions to adopt mobile payments was then determined using multiple linear regression analysis. The empirical analysis's findings demonstrate that the theoretical conceptual model put out in this study was also rational and scientific, and that the research hypotheses have been effectively verified. The results of this study's 217 samples tested utilising the aforementioned analysis approach revealed that the research hypothesis H3 did not pass the empirical test. That is, "Hypothesis H3: The compatibility of mobile payment relates to consumers' usage attitude positively" is not valid, and the effect of compatibility on consumers' willingness to use is not significant. Except for hypothesis H3, all other hypotheses are supported by empirical data. In combination with this study's purpose, which is to examine the factors impacting Malaysian users' intention to make mobile payments, the following conclusions are drawn.

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In line with the findings of other investigations, H1 and H2 are supported. Based on Davis's 1989 Technology Acceptance Model (TAM), this paper proposes a technology acceptance model. Based on Davis' (1989) TAM model, perceived usefulness and perceived ease of use are thought to positively affect users' intention toward using new technologies and systems.According to this study, perceived usefulness and perceived ease of use significantly influence users' willingness to use mobile payment. In general, the results presented above are in line with those from Selvan & Kumar (2022), Arora (2022), and Isaac et al. (2016), which found that perceived usefulness and perceived ease of use both encourage users' behavior. The function of bank card binding has been added by numerous financial institutions and independent mobile payment service providers as a result of the ongoing development of information technology. Users can access this feature through the apple pay, Touch 'n Go, and Grab pay apps, and those who have bound their bank cards can make offline payments without carrying them. The emergence of such features will increase the perceived usefulness of mobile payments (Durgabhavani & Krishnan, 2019), which will make life more convenient and encourage people to begin utilising or keep using mobile payment features. As a result, perceived usefulness significantly increases customers' willingness to use.

The lack of support for H3 indicates that most consumers believe that mobile payment methods are far from their original payment habits and that using mobile payment functions does not meet their existing consumption needs. Malaysia has been a cash-dominated country until the COVID-19 pandemic (GlobalData, 2021), so despite the national efforts to transform the digital economy and the increasing

number of users changing their payment habits (Statistics, 2023), there are still some people who are still accustomed to using cash for more of their daily purchases. The preference for cash payments is 27.3% higher in rural areas than in urban areas (Cheong, 2022). Whether mobile payments are ideologically accepted by consumers should be based on compatibility (Oliveira et al., 2016). In other words, using mobile payment won't alter the user's values and will be able to fit into their current lifestyle without any negative impact on the consumer's existing life, and only then the consumer will be willing to accept mobile payment. This differential behavior of consumption habits may lead to the unsupportability of the hypothesis.

Based on H4, it appears that the subjective norm factor significantly influences customers' perception of mobile payments. The results of this research are similar to those of empirical research by Sun et al. (2019) and Fan et al. (2018). When consumers choose mobile payment, they are influenced by their friends and family members, and they are more motivated to try mobile payment when their friends or family members are using it (Lei Mu & Young-Chan, 2017). Second, consumers who have friends or family members who already use a certain mobile payment software are more likely to use it as well, thereby reducing possible transaction costs (Fan et al., 2020).

Respondents' intention to use is significantly impacted by perceived risk, which supports hypothesis H5. There are several earlier studies which support this finding, including Choi et al. (2013), Kamalul Ariffin (2018), and gel and gel (2021). This result shows that despite the increasing use of mobile payments by consumers, people

are still concerned about the possible financial risks, personal privacy disclosure, and other risks during the payment process.

5.2   Implications

5.2.1   Implication for Policy Makers

According to the research results, mobile payment is an industry with great potential and room for development, but for most consumers, mobile payment is still only at the level of understanding the concept, It is now necessary to find a solution for the issue of how to deepen consumer understanding of mobile payments and increase their acceptance.Based on this, this research creates a model of the elements influencing the propensity to use mobile payment from the perspective of Malaysian consumers and investigates many factors impacting users' mobile payment usage behaviour.

The findings of this study's empirical research demonstrate that customers' opinions regarding mobile payment are influenced by subjective norms. In order to provide consumers with a seamless payment experience and encourage more people to adopt mobile payment with social features, mobile social capabilities should be incorporated into payment software (Qu et al., 2015). Meanwhile, the development of richer social functions, such as "AA payment," can motivate current users to influence their friends to use mobile payment tools more frequently (Okereke, 2017), building a positive user reputation and expanding the adoption of mobile payment.

The results of this study suggest that consumers' intention to use mobile payment is positively influenced by PE. Consumers may have a better user experience thanks to

the mobile payment interface's cleaner design and the payment process's improved efficiency (Raina, 2019). This may increase users' willingness to use mobile payments since they perceive them as simpler to use and incurring fewer learning expenses. As well, mobile payments provide a competitive edge due to their ease of use (Damen, 2022). In addition to the ease of use of the scene, convenience is also reflected in the ease of use of the process itself, i.e., consumers can enjoy a simpler payment process when learning mobile payments. As a result of these findings, this study proposes that mobile payment will enhance consumers' perceptions of ease of use in three ways. Initially, the layout of the entire payment page should be reasonable; next, the payment procedure should be streamlined; and finally, the user experience should be enhanced.

The results above show that consumers' perceptions of risk have a detrimental impact on their propensity to utilise. Also, as more people use third-party mobile payment services, account fund security and data leakage are becoming increasingly important concerns for customers. Hence, third-party payment platforms should aggressively improve the security performance of their systems and establish a more complete account security mechanism to realise the security of third-party mobile payments.

In this study, we found that consumers' acceptance and acceptance of the new payment method vary, with some users actively trying new things and being more innovative, while others prefer to passively accept these new things and are less innovative and passive (Mangelsdorf, 2011). In order to increase consumers' awareness of trying mobile payment, the government and related institutions should strengthen innovation education for consumers and cultivate their innovation

awareness and ability; for mobile payment providers, it is recommended to increase the trial activities of new products and new functions in the early stage of the launch, and give certain prizes to consumers who dare to try new things, which will not only enhance innovation and consumers' This will not only enhance innovation and consumer motivation but also increase the publicity of the product or function (Council, 2017).

5.2.2 Implications for Academia

The TAM model has been used extensively to examine consumers' adoption and usage of information technology (Taherdoost, 2018), but as information technology and Internet technology have developed, the variables in the original TAM model no longer meet the requirements of a realistic theoretical analysis (Li et al., 2008). As a result, researchers have been working to make the TAM model more applicable. Researchers have added more variables to the TAM model or combined it with other models to create new theoretical models and carry out empirical research in order to increase the model's applicability (Q. Ma & Liu, 2005). To make the TAM model more theoretical and to broaden the potential areas of research for the investigation of users' willingness to continue using mobile payments, compatibility, subjective norm, and perceived risk variables are added to the model in this project.

After its rapid growth in recent years, the mobile payment sector has attracted a sizable user base, and in the current phase of research, scholars are concentrating on the study of users' willingness to use (Tsai et al., 2022). The research on users of the mobile payment sector is somewhat enriched by our investigation of the elements influencing users' willingness to continue using mobile payment in this article. We

also combine the research data to produce an empirical study. Researchers have focused most of their research on users' willingness to accept mobile payments for the first time and their influencing factors in recent years. This includes Liébana-Cabanillas et al.'s study of the willingness of emerging markets to accept mobile payments (Liébana-Cabanillas et al., 2020), or the factors influencing acceptance of mobile payment systems by users (Bachfischer et al., 2007). There is not a lot of work that focuses on the elements impacting users' continuous willingness to use. Due to the project's data and analyses, some inroads have been made into the research on the variables impacting users' decisions to use mobile payment systems.

5.3 Limitations of Study

Although this study has reached certain conclusions and has undertaken a preliminary investigation into the elements influencing the readiness to use mobile payment from the perspectives of theoretical analysis and empirical research, there are still some restrictions and flaws.

The research perspective needs additional innovation. In this study, which blends technological acceptance and innovation diffusion theory, five variables are examined as factors influencing the intention to use mobile payment: PU, PE, perceived risk, compatibility, and subjective norm. In actuality, a variety of factors affect consumers' propensity to adopt mobile payments, In order to conduct a more thorough empirical analysis in the future, should keep broadening the research perspective and adding more variables to the research model.

There is a limited sample size, and the scope of the study is not broad enough. In this study, 217 valid questionnaires were obtained, which is a small sample size. Because this article's questionnaires are mostly distributed online, low representativeness of the sample is likely, and certain aspects of sampling error are possible. Therefore, the sample studied cannot fully represent the mobile payment users in Malaysia.

The sample data collection process is far too simple. The research in this paper mainly used the electronic questionnaire survey method, the research method only through the questionnaire survey may make the results of the survey incomplete, and may not truly reflect the real thoughts of consumers' heart, because the survey content of the questionnaire is fixed, and there are no open-ended questions to brainstorm. Therefore, in future empirical studies, more diverse research methods can be used, such as field interviews, experimental surveys, or case studies.

5.4 Recommendations for Future Research

In consideration of this paper's research weaknesses, we believe that the entry points for future research can be as follows.

In addition to drawing on classic research variables, new research variables may be introduced to examine the elements that influence users' intention to use mobile payment services. Scholars can also conduct comparative studies between different scenarios (online and offline) and different mobile payment brands to further enrich and improve the research results.

It is possible to increase the size and quantity of the questionnaires in order to increase the size of the sample and the quality of the data collected, so as to obtain more realistic and effective data on mobile payment users and further improve the comprehensiveness and representativeness of the empirical data, so as to better verify the factors affecting mobile payment users.

To further improve the data survey method, we select a stratified sampling method according to the actual situation of the survey, carry out a comparison of the variables impacting users' behavioural intentions for various mobile payment application goods, and try to take a follow-up survey of the sample research subjects to compare the behavioral intention data of users at different time points to more realistically and effectively study the factors influencing mobile payment users' continuous use.

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Appendix 1: Master Copy of the Finalized Questionnaire

UNIVERSITI TUNKU ABDUL RAHMAN (UTAR)

FACULTY OF BUSINESS AND FINANCE

Master in Business Administration (Corporate Management)

Research Topic: Investigating Factors Influencing Malaysians' Intention on Use Mobile Payments Service

Survey Questionnaire

Dear Respondents,

I am a student of Universiti Tunku Abdul Rahman (UTAR) doing a study related to the subject mentioned above. In this questionnaire, we would like to know some of your opinions on mobile payment. All the survey data is for academic research only, and we hope you will fill in the questionnaire according to your understanding of mobile payment.

Please take a few moments to answer the questionnaire. There will be no risk for you in participating in this survey. Your personal information and answers will be kept confidential and private. Your voluntary participation in this survey is greatly appreciated. The completion of this survey questionnaire implies consent for me to consolidate your data with others and to publish the results without identifying any respondents.

Thank you for your consideration and willing participation in this research project.

NAME	STUDENT ID:
LIU JING YI	22ABM01251

PERSONAL DATA PROTECTION STATEMENT

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

Notice:

1. The purposes for which your personal data may be used are inclusive but not limited to:-

   - *For assessment of any application to UTAR*

   - *For processing any benefits and services*

   - *For communication purposes*

   - *For advertorial and news*

   - *For general administration and record purposes*

   - *For enhancing the value of education*

   - *For educational and related purposes consequential to UTAR*

   - *For the purpose of our corporate governance*

   - *For consideration as a guarantor for UTAR staff/ student   applying for his/her scholarship/ study loan*

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

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

4. UTAR is committed 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 authorise and consent to us processing (including disclosing) your personal data and any updates of your information, for the purposes and/or for any other purposes related to the purpose.

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

3. You may access and update your personal data by writing to us at _____

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:

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Demographic Profile

*Please read and put only **ONE** tick (V) on each question to indicate your selection:*

Please indicate your gender:

☐ ☐Male

☐ ☐Female

Please select your category that indicates your age:

☐ ☐20 and below

☐ ☐21 – 25

☐ ☐26 – 30

☐ ☐31 and above

Please select the category that indicates your education level:

☐ ☐SPM and Lower

☐ ☐Diploma

☐ ☐Bachelor Degree

☐ ☐Master and Higher

Please select your ethnicity:

☐ ☐Chinese

☐ ☐Indian

☐ ☐Malay

☐ ☐Other: _____

Please select your average monthly expenditure

☐ ☐800 and below

☐ ☐801 – 1500

☐ ☐1501 – 2500

☐ ☐2501 and above

Please select how often you use mobile payments

☐ ☐Every day

☐ ☐2-3 days once

☐ ☐Once a week

☐ ☐Once a month

TITLE: Investigating Factors Influencing Malaysians' Intention of Use Mobile Payments

For each of the statements, please tick (√) the number using the

agreement-disagreement scale which you feel the best to describe yours perception.

(1 Strongly disagree ,2 Disagree, 3 Neutral, 4 Agree, 5 Strongly agree) Just tick (√) in

the appropriate box

No.	Statements	1	2	3	4	5
	Compatibility					
1.	I think using mobile payments is compatible with my lifestyle					
2.	I think using mobile payments can meet my daily needs					
3.	I think mobile payment can make my life more convenient					
	Subjective norms					
4.	I am surrounded by friends and colleagues who use mobile payment					
5.	My friends and colleagues around me are more in agreement with my use of mobile payment					
6.	The store or online store i often go accepts mobile payments					
	Perceived ease of use					
7.	It is not difficult for me to become proficient in using mobile payments.					
8.	It does not take much time for me to learn how to use mobile payment					
9.	The mobile payment page is easy to use					
	Perceived usefulness					
10.	The efficiency of transactions can be improved					

	by using mobile payment					
11.	Using mobile payment saves me the inconvenience of paying with cash					
12.	Mobile payment can bring some fee discount					
13.	It is easier to manage money with mobile payment					
	Perceived risk					
14.	I am worried that my personal information will be leaked if I use mobile payment					
15.	I am worried that my account password will be stolen if I use mobile payment					
16.	I am worried that my transaction information will be leaked if I use mobile payment					
17.	I am worried that my money will be lost if I use mobile payment					
	Usage intention					
18.	I have a positive attitude towards mobile payments					
19.	I am willing to give priority to mobile payments					
20.	I am willing to recommend mobile payment to my friends around me					
21.	If I have already used mobile payment services, I will continue to use					

Thank you for your participation!

To : The Head of Programme, Postgraduate Degree Programmes, **Faculty of Business and Finance**

SUBMISSION OF PROJECT REPORT FOR EXAMINATION

Name of Candidate	Liu Jing Yi	Faculty	FBF
Registration no.	22ABM01251	Programme	MBA (CM)
Intake		Structure	C (Coursework)
Address	Lot 1012, JALAN SEKSYEN 1/1, BANDAR BARAT,31900 KAMPAR, PERAK DARUL RIDZUAN.	Email address	liujingyi095@163.com
		Telephone/ mobile no.	601111129151
Supervisor's name &	Choy Johnn Yee	2nd Examiner's name	Lee Weng Onn

Declaration by Candidate

I hereby submit three (3) soft bound copies and one (1) softcopy (in CD) of my final project report titled:

16/03/2023

_____   _____
(Signature of Candidate)   (Date)

Endorsement by Supervisor, 2nd Examiner and Moderator (if any)

16/03/2023

_____   _____
(Signature of Supervisor)   (Date)

27/3/2023

_____   _____
(Signature of 2nd Examiner)   (Date)

_____   _____
(Signature of Moderator)   (Date)

Confirmation of Receipt by Faculty of Business and Finance

Date Received: _____   ☐ 3 soft bound copies of project report
                                                                 ☐ 1 softcopy (in CD)

1

Received by: _____ (Name) _____ (Signature)