

**THE DETERMINANTS OF INTENTION TO USE VEHICLE  
PARKING MOBILE PAYMENT APPLICATION**

**BY**

**LOW YUAN YI  
POH HAN ZHENG**

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- 3) Equal contribution has been made by each group member in completing the research project.
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Name of Student:	Student ID:	Signature:
1. Low Yuan Yi	1507183	_____
2. Poh Han Zheng	1700577	_____

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LIST OF ABBREVIATIONS

DBKL	Dewan Bandaraya Kuala Lumpur
CAGR	Compound Annual Growth Rate
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
TAM	Technology Acceptance Model
SD	Strongly Disagree
D	Disagree
N	Neutral
A	Agree
SA	Strongly Agree
SPSS	Statistical Package for Social Sciences
DV	Dependent Variable
IV	Independent Variable
$\alpha$	Constant
$Y$	Dependent Variable
$\beta_1$ to $\beta_n$	Coefficient associated with the independent variables
$X_1, X_2, X_3$	Independent Variables
ANOVA	Analysis of Variance
PU	Perceived Usefulness
PI	Personal Innovativeness
SI	Social Influences
C	Convenience

## PREFACE

Communities are becoming more relied on smartphones as it makes life easier and is capable to perform multiple tasks efficiently. Vehicle parking mobile payment application is a mobile application that can be widely used on a regular basis as it can remove the consumer's frustration to look for parking coupon agents or parking meters machines to pay for daily parking. Hence, the researchers tend to find out the factors that influence the intention to use vehicle parking mobile payment application in Malaysia.

After exploring into the vast literature on the concept of the mobile payment application, a few theoretical frameworks of past studies were selected to test in the local context. This study focuses in Malaysia as there have not been many studies conducted to test the consumer's intention to use vehicle parking mobile payment application in Malaysia. Thus, this brought to the determination to conduct this study as it would significantly benefit vehicle parking mobile payment application developer, government and consumers.

## ABSTRACT

The introduction of vehicle parking mobile payment application has increased the efficiency and effectiveness of the communities. Although the benefits of adopting mobile marketing are tremendous, the adoption rates among consumer in Malaysia are still at the infancy stage. Therefore, this study aims to develop a conceptual research framework to explore the factors that determine the intention to use vehicle parking mobile payment application in Malaysia. A better understanding of the influential effects in the consumer's intention to use vehicle parking mobile payment application will benefit the application developers as it is useful in determining their marketing strategy. This research also contributes to the government to have more data and online report on city planning purpose. The independent variables include perceived usefulness, personal innovativeness, social influences and convenience. Intention to use is the dependent of this study. The online survey questionnaire is used to collect data of 200 respondents in Malaysia. Reliability Test, Pearson Correlation, and Multiple Linear Regression analysis are being conducted on the variables of this research.

## **CHAPTER 1: RESEARCH OVERVIEW**

### **1.0 Introduction**

Recently, Malaysia launched vehicle parking mobile payment applications in order to catch up in the digital transformation race. New technology and innovative business models are cropping up every day. Therefore, the research objective is intended to explore the determinants of intention to use vehicle parking mobile payment application in Malaysia. This research is to determine the consumers' intention to use vehicle parking mobile payment application can be affected by perceived usefulness, personal innovativeness, social influences and convenience.

### **1.1 Research Background**

In this era of globalization, the pace of technological change is rapid, therefore, there are significant increases in mobile phone usage and the vast majorities of these are smartphones, as it allows users to perform multiple tasks through the internet. Studies by (Ifejika, Nwabeze, & Ayanda, 2009; Salia, Nsowah-Nuamah, & Steel, 2011) focused on the effectiveness of the mobile phone that benefits communities in terms of costs saving, saves time and minimizes energy consumption. Several studies from (Baro & Endouware, 2013; Hayrol Azril Mohammad Shaffril; Mohd Salleh Hassan, 2012; Jensen, 2007; Osman, Omar, Bolong, Dsilva, & Azril Mohamed Shaffril, 2014) have shown the vital role of the mobile phone. Furthermore, various groups of communities have gained scholarly attention to the usage of mobile phones, such as entrepreneurs, youths, consumers, farmers and students (Balakrishnan & Shamim, 2013).

According to (Hsiao, J. Chang, & Tang, 2012), the rise of the mobile application has grown significantly on the worldwide basis with the increasing usage of smartphones. The mobile application can be easily installed by downloading it from the developer's website or application store. The mobile application store is a software distribution platform that is intended to provide mobile apps to mobile devices, which is often run as a part of the device operating system (Becker, Mladenow, Kryvinska, & Strauss, 2012). By using application stores, it allows the users to view details and reviews of the particular applications, purchase services, download and install software.

For the past decades, Malaysians have been using physical parking coupons and parking meter machine to pay for their parking. Recently, Malaysia started to have parking apps like FlexiParking, JomParking, Parkbox and Parkbyphone, these apps are available on both Android and iOS platform. One of the most popular parking application – Flexi Parking, they defined themselves as the first in Malaysia to enable the mobile application parking. However, (CNBC, 2014) stated that the concept of parking app was original from JustPark, the world's first parking app, allowing drivers to book public and off-street parking in advance. Users are able to pay their street parking anywhere with internet connection through the parking apps. The parking apps require to register, it also requires users to reload funds onto the app for parking charges through debit or credit card. To use the app, users will need to register an account and top up a minimum of RM10. When making a payment, users are required to enter the car plate number and the parking time. The parking rates are charged depending on the area. For example, the parking rate of Majlis Perbandaran Kajang, Majlis Perbandaran Selayang and Perbandaran Ampang Jaya area are RM0.50/hour, RM5.50/day and RM70/month. However, the parking rate for Majlis Bandaraya Shah Alam and Majlis Perbandaran Sepang area are RM0.40/hour, RM4.40/day and RM60/month.

Even though the parking application is still new in Malaysia, but there are a lot of researches had shown that some countries are already using it. For example, based on the report by (Pachal, 2011), it stated that there are two parking applications which are Mobilly and RigaParking applications already available for download from the application stores. The platform of proposed parking payment applications

is dependent, which means that application must be downloaded from the appropriate application store. For example, Mobilly is iOS based application, which is available only on AppStore.

Previous studies or researches was conducted in the scope of parking application, yet it only focused on certain countries. Moreover, researchers take into consideration that most foreigners have little or no knowledge on Malaysia parking system and limited researches have been carried out on consumer intention to use vehicle parking mobile payment application in Malaysia.

## **1.2 Research Objectives**

### **1.2.1 General Objective**

In general, the research objective of this research is to study the factors that influence the intention to use vehicle parking mobile payment application in Malaysia. The overall research consists of four independent variables which include perceived usefulness, personal innovativeness, social influences and convenience.

### **1.2.2 Specific Objectives**

To be more specific, there are four objectives identified to examine the relationship of each factor influencing the intention to use vehicle parking mobile payment application in Malaysia.

- i. To identify the relationship between the perceived usefulness and the intention to use vehicle parking mobile payment application in Malaysia.
- ii. To identify the relationship between the personal innovativeness and the intention to use vehicle parking mobile payment application in Malaysia.
- iii. To identify the relationship between the social influences and the intention to use vehicle parking mobile payment application in Malaysia.
- iv. To identify the relationship between the convenience and the intention to use vehicle parking mobile payment application in Malaysia.

### **1.3 Problem Statement**

In Malaysia, finding a parking spot could be a pain. Besides, the problem does not end with finding a parking spot. Yet it occurs when people have to make payment, which is often an issue because of factors such as faulty of parking machines, the lack of coupon agents, and even the bad weather conditions. Various apps can be used in various situations or activities. Through the installation of apps, it can help to solve our daily life problem. For example, parking apps help us to solve these problems and save a lot of time. By adopting the parking applications, council officers can effortlessly verify payments made by car drivers. In addition, the parking application can provide data and online reporting for city planning purposes

and managing parking lots (Yeap, 2015). Most parking application shared the same idea and it came from the frustration of keeping too many used coupons while the used coupons have no further usage and the frustration to look for parking meters machines to pay for daily parking.

In the present age, problems raised by parking summons have often been an issue in Malaysia. (Digest, 2016) showed that there are there are a total of 5.2 million unpaid compound notices in Malaysia since 2007. Beside, Dewan Bandaraya Kuala Lumpur (DBKL) shared that it is difficult for Malaysians to pay their offenses as it involves many factors such as lack of responsibility which goes with a Malaysian driver's attitude. Getting a parking summons will result in small fines and no possibility of jail time. However, several companies like FlexiParking, JomParking, Parkbox and Parkbyphone have been continually saving the hassle of scratching parking coupons by letting the consumers pay via the mobile application, messages will be received when the time is about to expire and also extend the parking session with just a click. These apps are recognized by parking authorities and parking-space operators.

(Magazine, 2016) stated that the world's leading regions for mobile apps is Asia which they use their smartphone for searching, messaging, social networking or gaming. In 2017, the Malaysian mobile apps market is likely to make overall earnings of \$1.9bn, which represents a compound annual growth rate (CAGR) of 3.7% between 2013 and 2017 ("MarketLine Industry Profile, Mobile App in Malaysia," 2017). In comparison to the Indonesian and Chinese markets will grow with CAGRs of 13% and 18.4% respectively, over the same period, to reach respective values of \$2.7bn and \$80.0bn in 2017. These data showed that Malaysia still lacks the mobile app users as its market growth rate is much lower than the other markets.

According to ("MarketLine Industry Profile, Mobile App in Malaysia," 2017), the Malaysian mobile apps market has followed a sharp decelerating growth trend in terms of value since 2014 that ended up to a contraction in 2016. This shrinking trend driven by decreasing monetization is expected to be magnified in 2017. However, the market is set to recover during the forecast period as monetization



rates will tend to be stabilized, whilst the apps penetration will still be strongly increasing. The strongly increasing adoption of smartphones and mobile internet in Malaysia has induced demand for mobile apps in recent years. However, the growth of demand in terms of volumes has been offset by an opposite trend in monetization rates. In detail, the surge of mobile advertising expenditure which was more than doubled in 2015 and 2016, allowed the expansion of freeware apps as developers were able to monetize through these means. As a result, the demand for paid apps has been increasingly smaller in a proportion of volumes.

Besides that, a rapid growth has been noticed in the mobile payment services which the earnings generated increased from US\$11.7 billion in the year 2005 to US\$37.1 billion in the year 2008 (Taga, 2010). Although there is a manifest increase in revenues generated, but the reality playground can be quite different and the situation is harsher when firms are trying to offer mobile payment services. In 2008, 1% of smartphone users had experienced using mobile payment services (Gartner, 2009). Therefore, the market penetration of the mobile payment is not consistent with the previous forecast. This leads to the question of “why consumers are not interested in using mobile payment services?”.

Previous researches had been conducted in order to understand the key factors in consumer willingness to adopt mobile payment services. A study of these key elements has been offering the vision of the potential to contribute significant managerial implications on how mobile payment services can sustain in the market and deliver the services effectively in order to increase the consumers' acceptance on mobile payment services. A significant growth has been noticed in the market of mobile payment services, there is a need for firms to search for continuous development and improvement for the mobile payment services to sustain competitive advantage against the traditional payment services. Given the past researches have high relevance and high validity, that is why this is the reason and purpose of this current research - to explore the relationship between the perceived usefulness, personal innovativeness, social influences and convenience and the customer acceptance and intention to use the mobile payment services. Hence, independent variables which are more appropriate to this study are perceived usefulness, personal innovativeness, social influences and convenience.

## 1.4 Research Questions

The research questions of this study:

- i. Does perceived usefulness affect the consumer intention to use vehicle parking mobile payment application in Malaysia?
- ii. Does personal innovativeness have a significant effect on consumer intention to use vehicle parking mobile payment application in Malaysia?
- iii. Do social influences affect the consumer intention to use vehicle parking mobile payment application in Malaysia?
- iv. Does convenience have a significant impact on consumer intention to use vehicle parking mobile payment application in Malaysia?

## 1.5 Significance of the Study

The reason and purpose of this research are aimed to ascertain and examine the determinants of intention to use vehicle parking mobile payment application in Malaysia. There are few factors that can provide more understanding about the perception of consumers toward the intention to use vehicle parking mobile payment application. The factors included convenience, personal innovativeness, perceived usefulness, and social influences. The findings of this research will help us discover how vehicle parking mobile application can sustain the apps developers' business and identify the marketing strategies used by the vehicle parking mobile application to attract more parking apps users.

Previous studies had been conducted regarding the similar research on the determinants of intention to use vehicle parking mobile payment application in Malaysia. However, most of the research was conducted in other countries' context. For example, the United States, Latvia and Indonesia (Araujo, Girao, Kalebe, & Neto, 2017; Benny & Soori, 2017; Ghannem, Hamdi, Soui, & Ammar, 2016).

This research will provide reliable and valid information on parking application in Malaysia context which could contribute benefit to the future researchers who are interested in conducting relevant studies. This research study is carried out in order to contribute to the society and also fill the research gap on the determinants of the intention to use vehicle parking mobile payment application in Malaysia context.

Furthermore, this study also identifies the four important independent variables convenience, personal innovativeness, perceived usefulness, and social influences which have a greater impact on the intention consumer intention to use vehicle parking mobile payment application in Malaysia.

From a practical perspective, the study identifies four important factors including convenience, personal innovativeness, perceived usefulness, and social influences which these variables have a significant impact on the intention to adopt vehicle parking mobile payment application in Malaysia. Nowadays, Malaysians are becoming more aware of environmental issues and ecological condition of Earth, understand that their irresponsibility causes harm to the natural environment. There

are 2.1 million private cars commuting into the city centre daily and imagine how many parking coupons are used daily. With the use of a parking app, it would help Malaysia to reduce the use of parking coupons as the parking payment is done online.

By having feedback from the respondents, the marketers would be able to have more understanding of the market and be able to position their market accurately and efficiency. The deep understanding of the market will help to ascertain the most attractive factor which makes customers continue to support them in Malaysia and helps in the development of the economy. This study will contribute benefits to parking app developers which allow them to deliver more advanced features, improve the quality of the application, and to be more efficient and effective. Not only that, this research would also provide reliable data for the parking app developers to understand the reason why consumers would like to give it a try and the reason why consumers resist to change from the traditional methods of paying to park. Last but not least, vehicle parking mobile payment application is able to improve their service through the research.

## 1.6 Chapter layout

Table 1.2 has shown the chapter layout of the research

**Table 1.2 Chapter Layout of Research**

Chapter 1: Introduction	Research Background → Research Objectives → Problem Statement → Research Questions → Hypothesis Of The Study → Significance Of The Study → Chapter Layout → Conclusion
Chapter 2: Literature Review	Review Of Literature → Theoretical Framework and Hypothesis Development
Chapter 3: Methodologies	Research Design → Data Collection Methods → Sampling Design → Research Instrument → Constructs Measurement → Data Analysis → Conclusion
Chapter 4: Result and Data Analysis	Descriptive Analysis → Scale Measurement → Inferential Analysis → Conclusion
Chapter 5: Discussion, Conclusion and Implication	Summary of Statistical Analysis → Discussion on Major Findings → Implication of the Study → Limitations of the Study → Recommendations for Future Research → Conclusion

## **1.7 Conclusion**

In a nutshell, Chapter 1 provides a clear mindset, understanding and briefing regarding the research background, research objectives, problem statement and research statement. Chapter 2 will be the next chapter and it will mainly explain the literature review of past researchers.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.0 Introduction**

This chapter is generally discussing the literature review of past researchers by ascertaining issues and reasons why it is important to carry out this study. This chapter also acts as a foundation of our study.

### **2.1 Review of Literature**

#### **2.1.1 Intention to Use**

(M. G. Morris, Davis, Davis, & Venkatesh, 2003) reported behavioural intention has a significant influence on the users' behaviour intention. Behavioural intention is defined as an individual's plan to complete an action (Van Schaik, 2009). Behavioural intention refers to the likelihood that an individual is more likely to take action on a certain behaviour (Ajzen, 1991; Mathieson, 1991). Meanwhile, (Cruz, Boughzala, & Assar, 2013) proposed that an individual's actions can be explained by a person's behavioural intention as it includes personal decision to perform a certain future behaviour. (Karaali, Gumussoy, & Calisir, 2011) stated that behavioural intention includes motivational factors which will lead to the users' use behaviour..

Past research has been proved that beliefs and attitudes are predictors of behavioural intention(Sun, Toncar, Lei, & Wang, 2009). (Wang, Sun, Lei, & Toncar, 2009).The intention is used to comprehend how attitude can have

an effect on actual behaviour (Huang, Lee, & Ho, 2004), and how negative attitude would lead to unfavourable intention and behaviour (Stevenson, Bruner, & Kumar, 2000). Past studies have also provided empirical evidence about favourable intention of mobile users towards mobile technology when they hold positive beliefs about it (Au & Kauffman, 2008). It is asserted that the understanding of antecedents provides better forecasts than a simple extrapolation from past sales trends (Armstrong, Morwitz, & Kumar, 2000). A recent study on the Malaysian market indicates that 4 out of 10 online shoppers are willing to make a purchase through their mobile phones (Goh, 2011). Hence, it is imperative to know what causes local mobile users to be willing to use the m-payment system.

### **2.1.2 Mobile Application**

(Kalakota, 2003) that with the pace of technological change and continuous innovation in technology, smartphone apps have been adopting by everyone, transforming into a new e-commerce era. A growth has been noticed in the smart devices market, the worldwide store revenue for mobile application is estimated to reach US\$188.9 billion in the coming 2020 (Hellberg-Zarders & Menard, 2018). In a recent market survey by (Whitepaper, 2016) was reported that the mobile usage now represents 65% of all time spent on digital media, with mobile applications dominating that usage, whereas desktop computer usage has been decreasing since 2013.

Games, weather, social networking, navigation and music are the top five popular categories of mobile applications that U.S. smart device owners use (Whitepaper, 2016). Regardless of the rapid growth of mobile application use with tablet computers, previous theses on tablet computers were mainly focused on the adoption of the smartphone device (Chan-Olmsted & Shay, 2016) or tablets in education contexts (C.-Y. Hung, Sun, & Yu, 2010). In



contrast, few researchers have empirically examined tablet computer users' intention to purchase mobile applications for their device.

### **2.1.3 Mobile Commerce**

Mobile commerce first came to prominence in 1997 in Helsinki, Finland (Asif, 2011). Coca-Cola vending machines were installed that accepted monetary payments from mobile phones through the use of Short Message Service (SMS) technology (Ahmed & More, 2011). The first mobile phone-based banking service was launched in 1997 by Merita Bank of Finland, also using SMS (Asif, 2011). In 1998, the first sales of digital content as downloads to mobile phones were made possible when the first commercial downloadable ringtones were launched in Finland by Radiolinja" (now part of the Finnish telecommunications company Elisa Oyj"). Afterward, two major national commercial platforms for m-commerce were launched in 1999: Smart Money in the Philippines, and NTT DoCoMo's i-Mode mobile internet service in Japan (Ahmed & More, 2011).

Compared with other traditional services such as retail and banking, the mobile telecommunication sector possesses a unique and under-investigated set of factors that shape and drive consumer behaviours (Aksoy, Buoye, Aksoy, Larivière, & Keiningham, 2013). Although m-commerce has been adopted well in developed countries, it is still at a growing stage in many developing countries (Aksoy et al., 2013; Morgeson, Sharma, & Hult, 2015). For example, there is significant potential for m-commerce in China, India, Malaysia, and Pakistan because mobile phone users by far exceed Internet users. However, mobile Internet users do not monetize as well as users in developed countries (Chong, Chan, & Ooi, 2012). Indeed, m-commerce is still not well accepted by customers in China, Malaysia (Chong et al., 2012), India (Thakur & Srivastava, 2014), and Pakistan (Sultan, Rohm, & Gao, 2009).

## 2.2 Perceived Usefulness

### 2.2.1 Definition of Perceived Usefulness

The concept of perceived usefulness includes the theory of self-efficacy, the theory of behavioural decision, the theory of expectations, and the theory of “the diffusion of innovations”, the theory of reasoned action and the theory of planned behaviour (Baile, 2005). The theory of self-efficacy (Bandura, 1982) proves that the behaviour and the action of an individual can be affected by the actions and beliefs of the anticipated outcome of behaviour.

According to the (Davis, 1989a), he defines perceived usefulness is “the extent to which an individual has faith in utilizing either a certain system, innovations or an object that would improve individual’s job performance.” By concentrating on the relationship between the characteristics of innovation and its application, the theory of “diffusion of innovations” by (Tornatzky & Klein, 1982) believes the utilization of an application relying on the relative advantage acquired is also involved the concept of the perceived usefulness of a technology.

The empirical studies have verified that the perceived usefulness has significantly influenced behavioural intention-to-use a particular system directly. Once this belief increases, the consumers’ intention-to-use mobile money service will increase as well. According to the analysis of consumer behaviour, perceived usefulness has been well tested as a variable for individuals’ intention to use a technology. Furthermore, according to (Cceptance, Ehavior, & Morris, 2000), supposing mobility and easier accessibility characteristics of mobile money services keep a consumer’s belief that the mobile money system is better than old-fashioned money transfer service that will eventually affect its perceived usefulness.

(Yang & Yoo, 2004) also discovered that the perceived usefulness has something to do with the users’ belief in the system’s capability in order to improve work performance. (Davis, 1993), he also defines the perceived usefulness that each person who utilizes the technology will improve their performance. By using social

networking to manage marketing, the complete information can be obtained by the users easily. In the other way, (Mathwick, Malhotra, & Rigdon, 2001) denote that perceived usefulness is the extent to which an individual believes that a particular system will speed up his/ her job or business performance. According to the (Munoz, 2008) research, he stated one of the reasons individuals use innovation is because they feel that innovation will help them achieve their objectives. The innovation refers to the use of vehicle parking mobile payment application in our context. By utilizing the vehicle parking mobile payment application, consumers are allowed to extend the parking session and pay parking compounds remotely via the app without the hassle of running back to your vehicle. The usefulness of the innovation is related to the perception of the particular person who uses it to perform his/her task. Therefore, (Davis, 1985) defined it as “the improvement of the expected performance from using the system” and there are actually six indicators which represent the expected benefits of using the innovative technology, namely:

1. Time needed to complete a task
2. Improvement in work performance
3. Increasing productivity
4. Being effective and efficient at work

There is widespread evidence which providing significant impact to the perceived usefulness on adaptation intention (Chen & Barnes, 2007; Eriksson, Kerem, & Nilsson, 2005; Hu, Chau, Liu Sheng, & Tam, 1999; Jaruwachirathanakul & Fink, 2005; Oly Ndubisi & Guriting, 2006; Venkatesh & Davis, 1996, 2000). Perceived usefulness is also an important element in determining adaptation of innovations which is suggested by (Tan & Teo, 2000).

Perceived usefulness is “the extent to which an individual has faith in utilizing either a certain system, innovations or an object that would improve an individual’s job performance.” People in an organization often generally think that they can get a pay raise, promotion, bonuses or other intrinsic rewards by enhancing their job performance (Pfeffer, 1982; Schein, 1980; Vroom, 1964). A system has a high perceived usefulness which will lead a user to accept the presence of a positive use performance relationship.

In a nutshell, this research verified that there are a positive relation and association between “perceived usefulness of an information system on the intention to use the system” (Cceptance et al., 2000).

### **2.2.2 Relationship between Perceived Usefulness and Intention to Use**

Constructs that have a possible effect on heightening user's attitude towards usage would be perceived usefulness and perceived ease of use. (Kent Eriksson, Katri Kerem, Daniel Nilsson, 2005) assumed that the perceived usefulness is affected by the level of an individual's trust. (Pikkarainen, T., 2004) had discovered that the perceived usefulness of an information system can be the utmost vital element in determining its usage. The perceived usefulness was found that it had considerable strong relation with usage (Davis, 1989; Eriksson, Kerem, & Nilsson, 2005; Oly Ndubisi & Guriting, 2006).

Few past studies had emphasized the significance connection of perceived usefulness and perceived ease of use relating to an individual's behaviour preceding crafted by (James A. Davis, 1985). (Hildebrandt, 1977) had revealed that the perceived usefulness provided a trusty prediction for self-predicted use of a decision model. The evidence of perceived usefulness and perceived ease of use are considered as important behavioural determinants which had been contributed by the research of Swanson, 1982.

(Venkatesh & Davis, 1996) had suggested that the attitude of an individual would not play a much important role but perceived usefulness could have determined the intention to use a technology. The research of (Chan & Lu, 2004; Davis, 1989; Jackson, Chow, & Leitch, 1997; Lee et al., 2003) had shown that perceived usefulness is an important element in influencing individuals' intention to use.

There is experimental proof has gathered over a decade has suggested the perceived ease of use is significantly connected to the expectation to utilize, both directly and indirectly via its impact on perceived usefulness (Davis, 1989; Venkatesh & Davis, 2000). Technology Acceptance Model (TAM) concludes that the employees' real use can be explained by their intention to use, which is impacted by two determinants which are perceived usefulness and perceived ease of use (Davis, 1989).

According to (Dss et al., 2013) research, their study was conducted in one of the manufacturing companies in Pulau Pinang, Malaysia. They had distributed 60 sets of questionnaires to all the employees within the organization. After filtering out those with irrelevant data, which mirror that the response rate is up to 83.3%. Every question measured on a 5-point Likert Scale basis and the coefficient value ranged from 0.764 to 0.918 for every one of the instruments utilized as a part of the research.

The study of (Rono, 2014) had found there was a positive relationship between perceived usefulness and perceived ease of use of mobile money services having a correlation coefficient of 0.489. With the statement above, it shows that the ease of use is influenced perceived usefulness positively. It discovered that the more individuals will perceive the mobile money system as easy to use, the more their expectation and readiness to utilize the system will increment. It discovered that perceived usefulness is highly influencing the behavioural intention to use mobile money services that is if people perceive a technology as using their behavioural intention to use increases.

The final reason the public take advantage of vehicle parking mobile payment application is that they sense the application will be useful to them.

## **2.3 Personal Innovativeness**

### **2.3.1 Definition of Personal Innovativeness**

Personal innovativeness is the extent to which an individual is willing to adopt any new technologies (Rogers, 1983). The user innovativeness plays a significant part in their selection among different types of new technologies which reported by (Leung & Wei, 1998). This variable was merged into this study because marketers must group users in view of their level of innovativeness and grasp the willingness of individuals to adopt vehicle parking mobile payment application. Personal innovativeness plays a significant part in identifying the outcomes of user acceptance of technology (Yi, Jackson, Park, & Probst, 2006). Individuals who are innovative are normally categorized as dynamic technology seekers. From the perspective point of view from Roger's hypothesis of the diffusion of innovations (Rogers, 1983), (Agarwal & Parasad, 1988) proposed that the personal innovativeness is indicating the risk-taking inclination that exists in specific people. The risk taker is more likely to adopt and accept any new innovative technologies.

Diffusion of innovation theory classifies individuals into five categories, namely innovators, early adopters, early majority, late majority and laggards – determined by the amount of time for individuals to adopt and accept a particular form of new technology (Rogers, 1983). Personal innovativeness has the ability to affect perceived usefulness and perceived usability which both impacts the individuals' abilities to fit into the mobile applications for vehicle parking mobile payment purposes.

Every individual has a different perspective on the tendency to use new and advanced technology (Nov & Ye, 2008). Past few researchers had been trying to identify the relationship between the differences in individuals' personality and the acceptance of technology behaviour. Besides, they measured this relationship at multi-levels such as inferential analysis and descriptive analysis. Personal innovativeness is no longer only in innovation diffusion research (Rogers, 1983), it also can apply in information system areas (Agarwal & Parasad, 1988).

### **2.3.2 Relationship between Personal Innovativeness and Intention to Use**

According to the theory of diffusion of innovations by (Rogers, 1983), innovators are people who are willing to try new technologies without afraid of failure. (Ruiz - Mafé, Sanz - Blas, Aldás - Manzano, & Lassala - Navarré, 2009) studied the effect of personal innovativeness on perceived risk in the field of online banking mainly because transactions are involved in using the technology. Mobile commerce is similar to online banking in the context of transaction processing. It was found that highly innovative people had a lower perception of risk associated with online banking (Ruiz - Mafé et al., 2009).

(Bruner & Kumar, 2007) stated that people can more knowledgeable by using new gadgets, enhancing their coping skills to handle new technology and the uncertainties or challenges that may arise while using them. The ability to cope with uncertainty allows gadget lovers to generate a high intrinsic motivation that drives them to use a variety of leading-edge technological goods, as well as the services that complement them. Gadget lovers are willing to take on the challenge because new technology provides new benefits, features, and functions, and the usage of these high-tech goods excites them while enhancing their knowledge. (Leonard-Barton & Deschamps, 1988) conceptualize individuals who are willing to take challenges are more likely to adopt and/or use new products or services.

(Bruner & Kumar, 2007) stated that the use of leading-edge technological goods also keeps gadget lovers thinking of exciting improvements for the newest technologies, and it also enhances their readiness to be the first to adopt or early adopters of new technology-based goods. This is also supported by (Shoham & Pesämaa, 2013), which gadget lovers are stimulated by the new novelties of high-tech gadgets, they are eager to take a chance with using these novel products and to become early adopters of the leading-edge technological goods and services that complement them.

(M.-C. Hung, Hwang, & Hsieh, 2007) studied the direct and indirect effect of personal innovativeness on satisfaction in using mobile commerce using an



extended expectation-confirmation model, it found that the explanatory power of the model mainly depends on the personal innovativeness factor. (Dai & Palvia, 2009; M.-C. Hung et al., 2007; Lu, 2014; Zhang, Zhu, & Liu, 2012) also tested the direct relationship between personal innovativeness and the intention to use smartphones for shopping applications. (C. Park & Jun, 2003; Ruiz - Mafé et al., 2009) stated that in the case of mobile commerce, the variance explained by personal innovativeness is higher compared to other technologies like internet banking and e-commerce

## **2.4 Social Influences**

### **2.4.1 Definition of Social Influences**

Social influences happen when an individual's behaviours, emotions or their action is affected by another either intentionally or unintentionally (Dahl et al., 2013). (Allport, 1924) defined social psychology as the study of how an individual can be influenced by the presence of real or imagined others. This also shows that a rather individualistic notion of social psychology and social influence and neglects more indirect and group-level phenomena (Forgas & Williams, 2001). In addition, (Forgas & Williams, 2001) highlighted that all interpersonal behaviour involves some form of mutual influence process and that kind of groups or societies can only exist because of the influences from the social.

According to (Forgas & Williams, 2001), the social influences can be differentiated and distinguished them into three types. First, the direct person to person influence which is the most listed research in social psychology textbooks. The person to person influence means that a clear individualistic bias for a person being influenced by other influencer and typically focuses on informational influence rather than normative influence (Forgas & Williams, 2001). The second type of

influence is the indirect manipulation of social norms, customs and social or cultural attitudes. A person can be influenced by others by manipulating agendas, mobilize relevant social values and norms to remove or isolate certain individuals from the discussion (Forgas & Williams, 2001). The third one is hard to recognize as it is most subtle, indirect and hard to recognize. (Forgas & Williams, 2001), stated that attitudes, beliefs and behaviours are influenced by others without the individuals themselves being aware of it.

Hence, the framework would be able to provide the categorization of the type of influences and their outcome onto certain process or behavioural intention.

#### **2.4.2 Relationship between Social Influences and Intention to Use**

Based on (White & Argo, 2011), consumers are seen to adopt disassociation behaviours from the social other. In terms of consumer behaviour, they also stated that the reactions or decision making on product choice of major consumers are being copied by other consumers or in their social group. It also shows that a consumer will change his consumption behaviour when they are influenced by other social groups (direct influence). (Shalev & Morwitz, 2012) also stated that dissociative others can be an important source of social influence in their own right. In his research, he stated that how a “low-status user effect” can exist within the consumers when they observe a dissociative other using a particular desired product. Hence, the observing consumers are shown to question themselves with respect to the desired product, resulting in the increase in purchasing or using intention of the consumers.

(Liker & Sindi, 1997) stated that social influences represent “perceived external pressures to use or not to use a certain system”. Besides that, (Wilcox & Stephen, 2013) investigate about the social influences online social networks context and found out that social network use enhances the self-esteem of consumers who focus on close friends in their purchasing behaviours which he further documents this type of social influence as a less self-control in subsequent behaviour. (Alwahaishi

& Snásel, 2013) unified the theory of recognition and use of technology which including social influence will also affect the behavioural intention and changing the users' use behaviour of the consumers. He stated that social influence is one of the main factors determining user adoption of the certain product.

(Ajzen & M. A. Fishbein, 2015) developed the theory of reasoned action (TRA). The theory uses two elements which are the attitudes and norms to predict behavioural intention. This suggests that whenever our attitudes lead us to do one thing but the relevant norms suggest we do something else. For example, the influence of peers or friends in making a decision on what book to read instead of going for own attitudes and interest.

## **2.5 Convenience**

### **2.5.1 Definition of Convenience**

Convenience is defined as a multidimensional structure (Anna Botonaki, 2007). Hence, convenience orientation can influence a person's convenience behaviour to use an application. Observers have long pointed out that consumers are interested in saving time and effort (Eriksson et al., 2005). In addition, convenient research has always concentrated on individuals' spending time and effort used to complete a particular task. Furthermore, convenience takes the least amount of time to bring a positive customer experience and settles customers' issues (Botonaki, Natos, & Mattas, 2009). For example, some mall parking lots provide customers with car details while they are shopping (Graham, 1982). Thus, consumers who perceived time as an important element will particularly emphasize the time taken to complete a particular task (Graham, 1982). Darian and Cohen proposed the dimensions of convenience, which one of the aspects is the type of convenience that can save time, physical energy and mental energy (Darian & Cohen, 1995).

Some suggested the other side of the conventional structure are final goods. These include the size of the product, preservability, the packaging and the design of the product which could shorten the time taken and effort used in purchasing and using (Berry, Seiders, & Grewal, 2002). In addition, the benefits customers gain from the online purchase, such as time and efforts saving are categorized into convenience. It can be reflected in a shorter time and less energy consumption. (Rohm & Swaminathan, 2004).

Moreover, convenience has five dimensions. The first dimension is access convenience. Access convenience is described as the development of the internet which allows customers to shop at any time and place. It can help them avoid crowds, reduce waiting time, and also reduce the workload of visiting physical stores (Saeidinia, Manafi, Behdarvandi Almasi, Shakoori, & Aghaii, 2011). Besides, the second dimension which is search convenience defines the ease of searching for

relevant product information and comparing the price provided by individual retailers. The internet allows online shoppers to collect information easily (Perea y Monsuwé, de Ruyter, & Dellaert, 2004). Furthermore, the third dimension is evaluation convenience. The customer review system has been acquired by most online websites. It authorizes the customers to review feedbacks from others before placing an order (Jiang, Yang, & Jun, 2013).

On top of that, the fourth dimension is transaction convenience. It defines as the process of payment is designed in a non-complicated system plus it is easy to be understood. On condition that the payment process is difficult to comply with, the satisfaction of online shoppers will also decrease. Last but not least, the fifth dimension is possession convenience. It is also meant by the customer's post-purchase evaluation and post-use evaluation. It concerns about the time and efforts needed to get their desired products. It is also to experience their benefits (Jiang et al., 2013). As explained above, different researchers defined convenience from various viewpoints in the previous studies. As consumers obtain benefits from time and energy saving orientation, it will positively influence their intention to use or intention to purchase (Childers, Carr, Peck, & Carson, 2001).

### **2.5.2 Relationship between Convenience and Intention to Use**

A person's general preference for convenient goods and services attempts to 'accomplish a task in the least amount of time with the least energy spent (Morganosky, 1986). Furthermore, different sets of customers have a tendency to produce different customer convenience profiles. For example, employment social position and family life stage will affect the decisions which about convenience (Brown & McEnally, 1992). Boztepe sees convenience as a sociocultural form where the organization of the social system, religion, traditions and other social and cultural practice affect what is recognized as being convenient (Eriksson et al., 2005). There is a lot of recent studies suggested convenience as a lifestyle choice

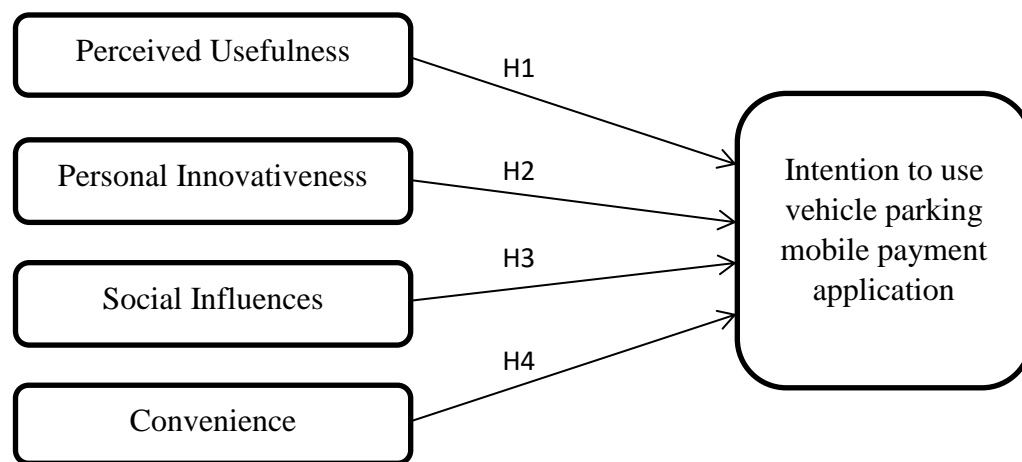
that increases or eases a fragmented and demanding mothering role (Carrigan & Szmigin, 2006). In addition, convenience can be seen as part of a broader set of consumer choices set derived from new perspectives on marketing and that an organization can only provide propositions to (Vargo & Lusch, 2008).

According to the study, perceived convenience, perceived ease of accessibility, and perceived support had positive direct relationships with the intention to use mobile payment services (Mbogo, 2010). The regression studies and consumer surveys show that convenience is considered as a significant factor that would help consumers decide in choosing to use an application from various payment methods. As a result, the convenience advantages of mobile payments could be a major factor in inducing consumers to use them (Fumiko Hayashi, 2012). The accessibility of the new technology or project will actually reduce the time to complete a particular project and increase the speed of completing a particular project which has helped the consumers make use of the service more easily Jiang proposed that convenience is one of the important elements to success in the online business platform (Jiang et al., 2013).

The results of To, Liao, Lin's research study showed that convenience brings significant impact on consumers' shopping intention (To, Liao, & Lin, 2007). Besides, based on Gupta and Kim's research, convenience had a positive relationship towards online shopping intention as well (Gupta & Heewoong, 2006). Moreover, the main four variables used to investigate a ubiquitous wireless LAN environment in Cheolho and Sanghoon's study are perceived usefulness, perceived ease of use, behavioural intention, and perceived convenience. Few researchers from the past had shown that convenience has a positive relationship on individuals' behavioural intention in their study (Yoon & Kim, 2007).

## 2.6 Proposed Theoretical/ Conceptual Framework

Figure 2.2: Proposed Theoretical/ Conceptual Framework of Intention to Use Vehicle Parking Mobile Payment Application



The conceptual framework is the indispensable foundation for this research which proposes the framework toward the intention to use vehicle parking mobile payment application. The vehicle parking mobile payment application claims that this application will bring benefit to society. However, the adoption and acceptance issues still exist in Malaysia. There are many theories have been proposed to justify the users' intention to use an information technology.

One of the theories have been proposed which is the Technology Acceptance Model (Davis, 1989a) and this actually explain how users accept and use a particular technology (Dauda & Lee, 2015). The past researches have a thing in common which their aim was to predict users' intentions towards the adoption and acceptance of mobile services by using the TAM model. This is because mobile parking services were believed to be functional services, the TAM was chosen as an adequate model with an excellent record of explaining the adoption of functional ICT applications and system.

Another theory would be the theory of planned behaviour. This theory demonstrates how behavioural control, subjective norm and attitude integrate to affect the consumers' intention to engage in any activities (Ajzen & M. A. Fishbein, 2015).

This study will identify the impact of perceived risk and perceived enjoyment as attitudinal beliefs, subjective norms as a normative belief and self-efficacy as a control belief upon consumers' intention to use vehicle parking mobile payment application.

Innovative individuals have the willingness to try out new technologies and to take advantage of those technologies while using them to carry out their task. The technology acceptance rate will automatically increase. Thus, an individual with high innovativeness are more likely to be an early adopter, have the ability to adapt and cope to the new technological changes and they also are an information seeker who is actively searching for new ideas for further development and improvement. According to the Technology Acceptance Model, it is therefore hypothesized that people are more willing to use the parking application.

Social influences happen when an individual's behaviours, emotions or their action is affected by another either intentionally or unintentionally (Jahoda, 1959). Conformity is one of the sub-social influences because it can change people's behaviours, attitudes, or beliefs (Aronson et al. 2010). According to the dual-process perspective (Burnkrant & Cousineau, 1975; Deutsch & Gerard, 1955), there are two types of social influences: informational and normative. Informational influence, also called accuracy-based conformity, refers to the extent to which people follow the opinions or actions of social groups to make correct judgments under conditions of uncertainty because others' advice provides accurate information (Bearden, Netemeyer, & Teel, 1989; C. W. Park & Lessig, 1977; Winterich & Nenkov, 2015). Normative influence refers to the extent to which people fulfill others' expectation in exchange for acceptance (Bearden et al., 1989; C. W. Park & Lessig, 1977; Winterich & Nenkov, 2015).

Convenience can be categorized as an individual using a particular mobile technology hassle-free and without difficulty. The accessibility of the new technology or project will actually reduce the time to complete a particular project and increase the speed of completing a particular project which has helped the consumers make use of the service more easily and therefore improves its performance of payments (Clarke, 2001). This study has been commented that the



convenience is positively affected the time taken required to complete a transaction and also the usefulness of mobile payment.

An adoption of the Technology Acceptance Model (TAM) which was introduced by (Davis, 1989a), particularly tailored for the consumers' acceptance and intention to use mobile application. The Theory of Planned Behaviour (TPB) was introduced by (Ajzen, 1991) and Theory of Reasoned Action (TRA) was introduced by (Ajzen & M. A. Fishbein, 2015) are mostly applied for the products that have already existed in the market industry and included the view of society.

Figure 2.2 represents the factors that influence the users' intention to use vehicle parking mobile payment. Therefore, this conceptual framework will be adopted in this research where the factors are perceived usefulness, personal innovativeness, social influence and convenience that will influence the intention to use vehicle parking mobile payment application.

## 2.7 Hypothesis Development

Hypotheses	Explanation
<p><b>H1:</b> <i>To test whether the perceived usefulness has a positive significant relationship with the intention to use the vehicle parking mobile payment application.</i></p>	<p>The usefulness of the application will significantly affect the individuals' intention to use the vehicle parking mobile payment application.</p>
<p><b>H2:</b> <i>To test whether the personal innovativeness has a positive significant relationship with the intention to use the vehicle parking mobile payment application.</i></p>	<p>The willingness of an individual to accept the innovative technologies will affect the intention to use the vehicle parking mobile payment application. Individual with high level of personal innovativeness is a risk taker to try out something new and innovative.</p>
<p><b>H3:</b> <i>To test whether the social influences has a positive significant relationship with the intention to use the vehicle parking mobile payment application.</i></p>	<p>If the individual stay in a group which have used the vehicle parking mobile payment application will more likely to affect the individuals' intention to use vehicle parking mobile payment application.</p>
<p><b>H4:</b> <i>To test whether the convenience has a positive significant relationship with the intention to use the vehicle parking mobile payment application.</i></p>	<p>Convenience would be a factor that will affect the individuals' intention to use the vehicle parking mobile payment application. The vehicle parking mobile payment application will allow individuals to pay their summons or coupon in the shortest time.</p>

## **2.8 Conclusion**

This section fundamentally reviewed the literature of the internet, social network, journals and past studies that will be applicable to our study. It clarified the significance of the internet and social network and application today for adolescents and what past researchers have found and recorded to test the significance. From the conceptual framework, there are 4 independent variables which are perceived usefulness, personal innovativeness, social influences and convenience while the dependent variable is the intention to use vehicle parking mobile payment application. On the side note, 4 hypotheses were derived which tested the relationships of each variable that will eventually answer the dependent variable, the research questions and objectives. In order to do so, the study would decide how and what are the kinds of data that will be gathered so as to make derivations of the hypotheses. Consequently, leading to the chapter 3 research methodology for further data collection and analysis of data.

## **CHAPTER 3: METHODOLOGY**

### **3.0 Introduction**

Chapter 3 is primarily discussed various approaches that need to be used to collect data from 200 respondents. This chapter also involves the techniques and theories used to collect, analyse and interpret the secondary data collected from the 200 respondents.

### **3.1 Research Design**

A research design is an overall strategy that the researchers choose to integrate into the research in a logical way, therefore a framework is formed to gather, measure and analyze data ensuring that will address the research problem effectively (Uma & Sekaran, 2013).

In this study, basic research is adopted because it is purely driven by curiosity and a desire to expand our understanding of the determinants of intention to use vehicle parking mobile payment application. By adopting basic research, a researcher is allowed to determine the factors that affect an individual's intention to use vehicle parking mobile payment application by conducting the study.

There are two types of business research which are qualitative research and quantitative research. According to (University, 2008), qualitative research is an empirical research where the data are collected in the form of words, image or objects while quantitative research collects data in a numerical form. This research is conducted by distributing survey questionnaires to our target audiences for quantitative data collection and hypotheses test.

In order to identify the cause-and-effect relationships which imply the factors cause the problems, causal research is applied. The objective of making use of causal research in our current thesis is to investigate the relationship between the dependent variable and independent variables.

## **3.2 Data Collection Methods**

Primary data and secondary data were applied to this research in order to support the previous studies. The data collected from respondents is to identify the relationships between the independent variables and the dependent variable.

### **3.2.1 Primary Data**

A primary data collection is a first-hand data that is collected by the researchers for a specific research purpose (Currie & Development, 2005). The main reason for choosing primary data collection is because of an absence of past research in the intention to use parking application in Malaysia context. Most of the past studies focused on other countries contexts such as Indonesia, Latvia and the United States as stated in the problem statement.

In this research, online surveys methods are carried out because it is less expensive and easily carry out to receive the information. A number of advantages in using online surveys method are it allows respondents to take their own time and at their own rate to fill up the online surveys. Online surveys suffer less social desirability than any other primary method.

### **3.2.2 Secondary Data**

Secondary data is a second-hand data which means it has been collected by previous other researchers and it is readily available on the internet. Such data are inexpensive and easier to obtain compared to the primary data source. According to (Caruso & Weidenborner, 1997), secondary data can be textbooks, journals, report, and also newspapers.

In this research, the secondary data is mostly acquired from UTAR e-Database, Books, Journals, and Articles.

## **3.3 Sampling Design**

### **3.3.1 Target Population**

The target population is the total group of individuals where they share common characteristics and possess the information which researchers interested in generalizing (Zikmund, Babin, Carr, & Griffin, 2013). The targeted respondents for this study are Malaysians who have the intention to use the vehicle parking mobile payment application regardless of having a car. The targeted population is anyone who owns a smartphone and there is no age restriction. This is because the application users can pay on behalf of their friends, parents or peers even though they do not have cars or driving license.

### **3.3.2 Sampling Frame and Sampling Location**

A sampling frame is a small group of people that can represent as a sample of the population. (Zikmund et al., 2013) defined sampling frame as the working population, a list of elements where it can be chosen as a sample. Since researchers are using non-probability as a sampling technique, therefore the sampling frame is not required for the research study. For the sampling location, researchers are targeting Malaysian citizen as our respondents.

### **3.3.3 Sampling Element**

This research is to study the determinant of intention to use vehicle parking mobile payment application, therefore researchers are targeting the respondents that own at least a smartphone and have the intention to use vehicle parking mobile payment application. The questionnaires are distributed through the internet and in Google Form, it is distributed to those respondents who are able to understand the contents and have knowledge of the mobile application.

### **3.3.4 Sampling Technique**

Non-probability sampling method were selected as the technique for this study. There are 4 types of non-probability sampling methods which are the convenience, judgement, referral and quota, however only convenience sampling and judgement sampling is applied in this research.

Judgement sampling, the researcher uses personal judgement to select subjects that are considered to be representative of the population. Judgement sampling can be very useful in certain situations when the researcher wants a quick sample. The reason for choosing judgement is because of low cost, convenience, and fast. Besides, researchers will choose whoever has the characteristics based on knowledge to produce a more reliable and accurate research and to screen out unqualified respondents.

Convenience sampling is involving the selection of sample elements that are most readily available to participate in the study and who can provide the required information. It is targeting whoever available at the time. The reason for choosing convenience is because of time and cost constraint for the researchers. Since not all of the respondents have the ideal characteristics of the research, researchers are allowed to not follow the characteristics of the population and determine the class of respondents with interest in the research.

### **3.3.5 Sample Size**

A large population should be using a large sample size in order to help researchers to have more reliable, significant and accurate result. According to (Roscoe, 1975), the rules to determine sample size where a sample size larger than 30 and less than 500 are appropriate for most research. Besides that, (Hill & Alexander, 2000) suggest that respondents between 200 to 500 are sufficient to a research. Therefore, 200 set of sample size will be considered as to measure in this research.



### **3.4 Research Instrument**

Questionnaires are distributed through the Internet in the form of the online survey. According to (Fricker, Jr, & Schonlau, 2002), internet-based surveys are now in vogue as it is cheaper, faster and yield a higher response rate than conventional survey modes.

#### **3.4.1 Questionnaire Design**

In preparation of questionnaire, few aspects like using simple vocabulary, short questions, avoid double-barrelled items, avoid leading and loaded questions, avoid ambiguity and avoid burdensome questions are much more concerned as it determines the response rate and the accuracy of the information for the research (Ross, 2005).

The questions are designed in the close-ended method, which also known as fixed alternative questions, it requires the respondents to pick the answer provided which is closest to their opinions. This type of question design is proved beneficial in terms of manageable responses, easy and quick to answer, easier to code and time saving for respondents (Ross, 2005).

In this research, the questionnaire is separated into 2 parts. Section A collects personal demographic information from respondents and Section B collects the viewpoints of respondents toward the variables related questions for this research.

Section B of the questionnaire contains 5 parts which including the 4 independent variables and a dependent variable. Every 5 parts of the section contain at least 3 sub-questions which required respondents to answer the questions which are measured with the Likert scale. This section intent to study the factors influencing the customer intends to use towards vehicle

parking mobile payment application in Malaysia. The Likert scale ranges from 1 to 5 where 1 = Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5= Strongly Agree. This section aims to collect data from respondents towards the factors influence the intention to use the mobile parking applications.

### **3.4.2 Pilot Test**

Pilot Test acts as a “rehearsal” in order to identify the feasibility, time, cost and those deviations which researchers have overlooked as well as improve the design of questionnaire before performing the performance of the research project. 30 sets of questionnaires were distributed to the target audience to identify the relevance, validity and feasibility. There are three main purposes for running pilot testing for this study. First of all, it is used to test the degree of comprehension of the questionnaire and respondents. Next, the time taken in completing the questionnaire is also taken into consideration. Lastly, feedbacks from the respondents are also essential to improve the questionnaire design, the relevancy of the items and the degree of complexity.

Table 3.1: Summary of Pilot Test

<b>NO.</b>	<b>Variable</b>	<b>No. of Items</b>	<b>Cronbach's Alpha</b>	<b>Strength of Association</b>
1	Perceived Usefulness	4	0.808	Very Good
2	Personal Innovativeness	6	0.877	Very Good
3	Social Influences	4	0.856	Very Good
4	Convenience	4	0.652	Moderate
5	Intention to Use	3	0.876	Very Good

Source: Developed for the research

Table 3.1 is the summary of 30 set of the pilot test result, it has shown that personal innovativeness has highest Cronbach's Alpha of 0.877 among 5 variables and it gives a meaning of having a very good strength of association. Next, convenience has the lowest Cronbach's Alpha of 0.652 which it only has a moderate strength of association. Perceived usefulness, social influences and intention to use also possesses a very good strength of association among the set which obtains Cronbach's Alpha of 0.808, 0.856 and 0.876 respectively. Thus, future data collection can be carried out as the items in the construct possesses a Cronbach's Alpha of more than 0.7 that is considered as acceptable and satisfactory internal consistency reliability (Zikmund et al., 2013). (Zikmund et al., 2013) proposed that there is no exact value of the Cronbach's Alpha value to be accepted by a study, however, (Zikmund et al., 2013) did mention that the acceptable Cronbach's Alpha value is supposed to be 0.7 and above.

## **3.5 Constructs Measurement**

### **3.5.1 Independent Variables and Measurement**

Each of the independent variables which are perceived usefulness, personal innovativeness, social influences and convenience is measured by at least three items (refer to the survey questionnaire, Section B). Respondents are requested to rate all items under the five-point Likert Scale in Section B. The scale is ranged from strongly disagree (1) to strongly agree (5).

### **3.5.2 Origin of Construct**

For this study, nominal and ordinal data were collected. Nominal data are data that can be grouped into categories were explained by (C. Morris, 2008). For example, gender, occupation, etc. Ordinal data are the data collected by ranking scales allowing things to be arranged based on how much of some concept they possible which five-point Likert Scale was adopted in this study.

The Determinants Of Intention To Use Vehicle Parking Mobile Payment  
Application

Independent Variables	Questionnaire Items	Source
Perceived Usefulness	<ul style="list-style-type: none"> <li>a. Vehicle parking mobile payment application will be useful in my life.</li> <li>b. Using vehicle parking mobile payment application will enable me to accomplish transactions more quickly.</li> <li>c. Using vehicle parking mobile payment application will increase my productivity.</li> <li>d. Using vehicle parking mobile payment application will increase my productivity.</li> <li>e. Using vehicle parking mobile payment application will enhance my effectiveness.</li> </ul>	(Davis, 1989)
Personal Innovativeness	<ul style="list-style-type: none"> <li>a. I think I know more about vehicle parking mobile payment application than my circle of friends.</li> <li>b. If I heard about a vehicle parking mobile payment application, I would look for ways to experiment with it.</li> <li>c. Among my peers, I am usually the first to try out vehicle parking mobile payment application.</li> <li>d. In general, I am hesitant to try out vehicle parking mobile payment application. (Reverse)*</li> <li>e. I like to experiment with vehicle parking mobile payment application.</li> <li>f. I think I would use vehicle parking mobile payment application even if I did not know anyone who had done it before.</li> </ul>	(Agarwal & Parasad, 1988; Goldsmith & Hofacker, 1991)
Social Influences	<ul style="list-style-type: none"> <li>a. People who are important to me think that I should use vehicle parking mobile payment application.</li> </ul>	

	<p>b. People who influence my behaviour think that I should use vehicle parking mobile payment application.</p> <p>c. Peers are helpful in the use of vehicle parking mobile payment application.</p> <p>d. The business trend encourages the use of vehicle parking mobile payment application.</p>	(M. G. Morris et al., 2003)
Convenience	<p>a. Vehicle parking mobile payment application is convenient because I always carry a mobile phone.</p> <p>b. Vehicle parking mobile payment application is convenient because I can use it anytime.</p> <p>c. Vehicle parking mobile payment application is convenient because I can use it in any condition.</p> <p>d. Vehicle parking mobile payment application is convenient because mobile payment service is not complicated.</p>	(C. Kim, Mirusmonov, & Lee, 2010)

Table 3.2 Origin of Construct

### 3.5.3 Dependent Variable

#### 3.5.3.1 Intention-to-use

These are three items to measure intention-to-use. These items are adopted from (Venkatesh & Davis, 2000).

Dependent Variables	Questionnaire Items	Source
Intention-to-use	<ul style="list-style-type: none"><li>a. I am likely to use vehicle parking mobile payment application in the near future.</li><li>b. I am willing to use vehicle parking mobile payment application in the near future.</li><li>c. I intend to use vehicle parking mobile payment application when the opportunity arises.</li></ul>	(Venkatesh & Davis, 2000)

Table 3.2 Origin of Construct

## **3.6 Data Processing**

### **3.6.1 Questionnaire Checking**

Questionnaire checking is the first step in data processing. It is a continuous process in which it starts once the first questionnaire is returned from the respondents until the last respondent has returned the last questionnaire to the researchers. The purpose of implementing this process is to increase the relevancy, accuracy and precision of the questionnaire by verifying the completeness and the quality of returned questionnaires. Furthermore, corrective actions need to be taken in advance if there are any problems encountered in the questionnaire before all the questionnaire distributed were collected back from the respondents. Thus, errors can be corrected before the rest of the questionnaires have been distributed to the respondents. The researchers are able to collect feedback from the respondents to enhance the questionnaire design and relevancy of questions by running the pilot testing.

### **3.6.2 Data Editing**

The following step is the data editing. It is the process of converting the data into usable and desired form. In a general term, it is an operation which performs on a given set of data to extract the required information from the questionnaire in an appropriate form. Thus, it will eventually improve the accuracy and relevancy of the questionnaires. Those incomplete or unsatisfactory questionnaire responses are more likely corrected by the process of questionnaire checking.



### **3.6.3 Data Coding**

Data Coding refers to the process of categorizing and assigning a code to the data collected. It transforms the answer from the returned questionnaire into certain numerical scores or other character symbols suitable for computer-aided analysis.

### **3.6.4 Data Transcribing**

The final step of data processing would be data transcribing. It involves decoding the data from questionnaire into Statistical Package for Social Sciences (SPSS) software for further analyzation and interpretation.

## **3.7 Data Analysis**

### **3.7.1 Descriptive Analysis**

Descriptive statistics is simply described what a researcher has in their returned questionnaire. It also describes used to present quantitative description in a presentable form. In this thesis, it has 200 respondents and thus descriptive statistics help researchers to simplify a large amount of data in an intelligent way (Uma & Sekaran, 2013).

In this research study, descriptive analysis is carried out to analyze the data in Section A which is demographic information. In addition, Section B is

tested two variables which are four independent variables and one dependent variable. To analyze the data in Section A (demographic information), most of the question in this section can be categorized as frequency, percentage, mode and mean and it has to be presented with a bar chart, line graph, pie chart and tabular form if it is necessary. As the Section B, it has to decode the respondents' response into a numerical symbol to come out with answers either it is in percentage, mean, standard deviation and it has to be presented in tabular form as well.

### **3.7.2 Scale Measurement**

The measurement means collecting the data in the form of numbers. Data can be classified as one of the four scales: ordinal, nominal, ratio or interval. However, each level of measurement has their own characteristic and it would be important to determine the appropriateness for research. The functions of scale measurement are provided continuous assisting in determining the reliability of a set of data of a study (Uma & Sekaran, 2013).

#### **3.7.2.1 Reliability Test**

Reliability test is an indication of the stability and consistency (Uma & Sekaran, 2013). There are many uncontrollable testing conditions and variables that will eventually affect the data's reliability, stability and consistency (Uma & Sekaran, 2013). Cronbach's alpha is the measurement of the internal consistency, reliability and the strength of a set of data as a group. In this test, the commonly used scale, coefficient alpha, is to identify the reliability of data sets and the strength of the variables. The Cronbach's

Alpha Coefficient Size ranges from 0 to 1. The 0 indicates that there is no consistency between the set of data and 1 indicates that there is a complete consistency between the set of data.

Table 3.3: Rule of Thumb of Cronbach's Alpha Coefficient Size

Alpha Coefficient Range	Strength of Association
<0.6	Poor
0.6 to <0.7	Moderate
0.7 to <0.8	Good
0.8 to <0.9	Very Good
>0.9	Excellent

**Source:** (Hair, Samouel, Money, & Page, 2007)

### **3.7.3 Inferential Analysis**

The inferential analysis is adopted in most of the research papers as it can determine if there is a relationship between an intervention and an outcome. It also determines the strength of the relationship (Trochim, 2002). There are types of inferential analysis which are Pearson's Correlation Coefficient Analysis, Multiple Regression Analysis, Chi-Square Statistics Test and Confidence Interval.

In this study, researchers are going to adopt the Pearson Correlation Coefficient Analysis and Multiple Linear Regression Analysis for this research.

### 3.7.3.1 Pearson Correlation Coefficient Analysis

According to (Uma & Sekaran, 2013) statement, they commented that Pearson's Coefficient Correlation Analysis is a technique which used to probe the relationship and measure the strength of the association between all variables. The value of  $r$  is always between the ranges from -1.0 to +1.0. If the R-value is exactly -1.0, it indicates a perfect negative linear relationship between the two variables. In contrast, if R-value is exactly +1.0, it shows a perfect linear positive relationship between the two variables. There is no linear relationship between the two variables if the value of  $r$  is equal to 0. Thus, the correlation between each independent variable (perceived usefulness, personal innovativeness, social influences and convenience) and the dependent variable (Intention to Use) are tested by applying Pearson's correlation coefficient method. For the significance value, the hypothesis will be accepted if the p-value is less than or equal to 0.01.

If  $p \leq 0.01$ , reject  $H_0$  and accept  $H_1$

If  $p \geq 0.01$ , accept  $H_0$  and reject  $H_1$

### 3.7.3.2 Multiple Linear Regression Analysis

Multiple Linear Regression Analysis is used to determine a relationship between all the independent variables and examine how the independent variables are related to one dependent variable (Zikmund et al., 2013). This analysis provides a way to assess the degree of relevance between one independent variable with one dependent variable. In the other way round, the greater part of the dependent variable is expressed by the coefficient value of each independent which allows the investigators and researchers to understand definitely and find out the factors that affect the dependent

variable. Since all the variables are using the same measurement scale, therefore, the multiple regression is advisable to analyse the sample size as a whole for an improved understanding and perspective on which independent variable denotes the highest impact on the dependent variable in this research. The equation of multiple regression analysis is shown below:

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \dots + \beta_nX_n$$

Where,

$Y$  = Dependent Variable

$\alpha$  = Constant

$\beta_1$  to  $\beta_n$  = Coefficient associated with the independent variables

$X_1, X_2, X_3$  = Independent Variables

According to the study, multiple regression analysis is conducted to examine the relevancy between independent variables. The equation of this multiple regression analysis is stated below:

$$Y = \alpha + \beta_1PU + \beta_2PI + \beta_3SI + \beta_3C$$

Where,

PU = Perceived Usefulness

PI= Personal Innovativeness

SI= Social Influences

C = Convenience

### **3.8 Conclusion**

This chapter has explained the techniques used, theories and procedures for the data collection. The following chapter will discuss the results of the data collected from the respondents.

## **CHAPTER 4: DATA ANALYSIS**

### **4.0 Introduction**

Chapter 4 involves analyse and interpret the data collected from 200 respondents through online distributed survey questionnaires. Besides, we use SPSS version 21.0 to interpret the collected data. This chapter also explains how the hypotheses are accepted and proved the significance of the study.

### **4.1 Descriptive Analysis**

#### **4.1.1 Response Rate of Study**

Table 4.1: Response Rate of Study

	<b>Online Survey</b>
<b>Distributed</b>	250
<b>Returned</b>	238 (95.2%)
<b>Unusable Responses</b>	24 (10.08%)
<b>Usable Responses</b>	214
<b>Response Rate (Percentage)</b>	95.2%

Sources: Developed for the research

From Table 4.1, there are 250 sets of questionnaire were distributed online via Google Form. 238 sets of questionnaire collected back from the respondents out of 250 sets of questionnaires we have distributed. There are

24 sets of questionnaires are unusable out of 238 sets of questionnaires we have collected back from respondents.

## 4.1.2 Respondent Demographic Profile

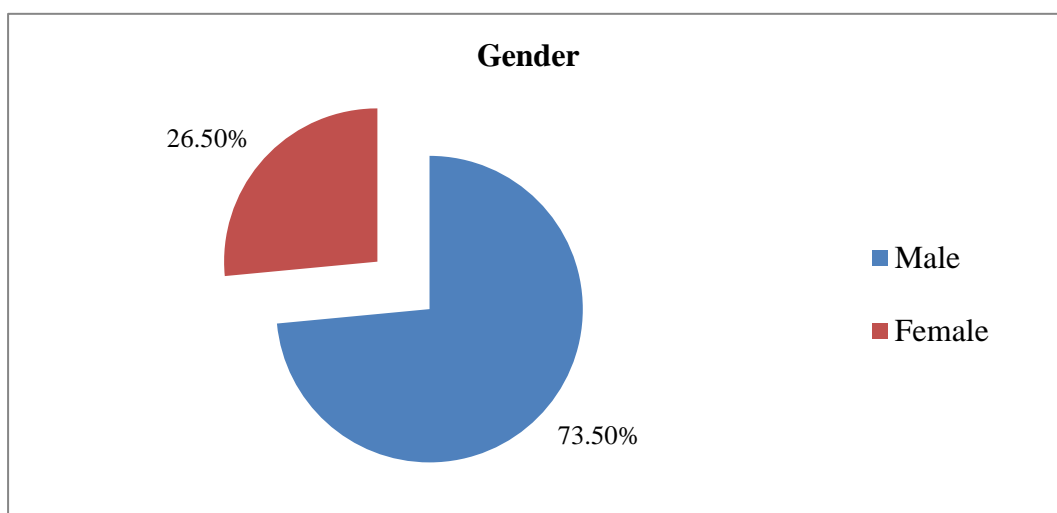
### 4.1.2.1 Gender

Table 4.2: Gender

		Gender			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	147	73.5	73.5	73.5
	Female	53	26.5	26.5	100.0
	Total	200	100.0	100.0	

Source: Developed for the research

Chart 4.1: Gender



Source: Developed for this research

Table 4.2 and Chart 4.1 show the gender of respondents who participate in the questionnaire. The number of male respondents is 147 persons while the



number of female respondents is 54% which female respondents are 94 persons lesser than male respondents. The percentage of male respondents over the total respondents is 74.50% and the percentage of female respondents is 26.50%. The differences between the percentage of male and female are 47%.

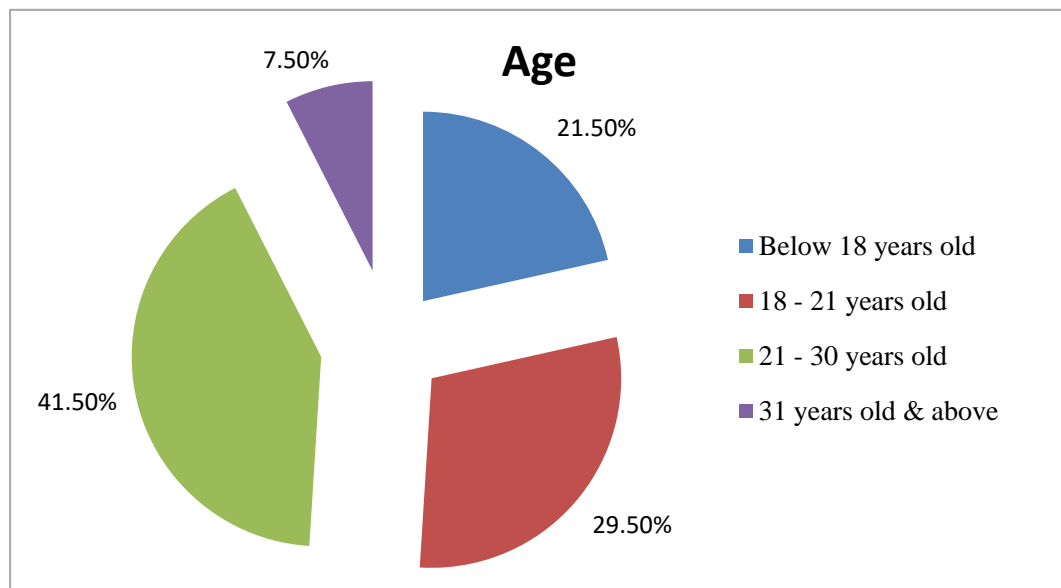
4.1.2.2 Age

Table 4.3 Age

		Age			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 18 years old	43	21.5	21.5	21.5
	18 - 21 years old	59	29.5	29.5	51.0
	21 - 30 years old	83	41.5	41.5	92.5
	31 years old & above	15	7.5	7.5	100.0
	Total	200	100.0	100.0	

Source: Developed for the research

Chart 4.2 Age



Source: Developed for the research

According to Table 4.3 and Chart 4.2, the largest group of respondents is between 21 to 30 years old among all 200 respondents, which are 41.50% or 83 respondents. There are 21.5% or 43 respondents' age below 18 years old and 29.50% or 59 respondents' age between 18 to 21 years old. Lastly, there are only 7.50% or 15 respondents' age range 31 years old and above.

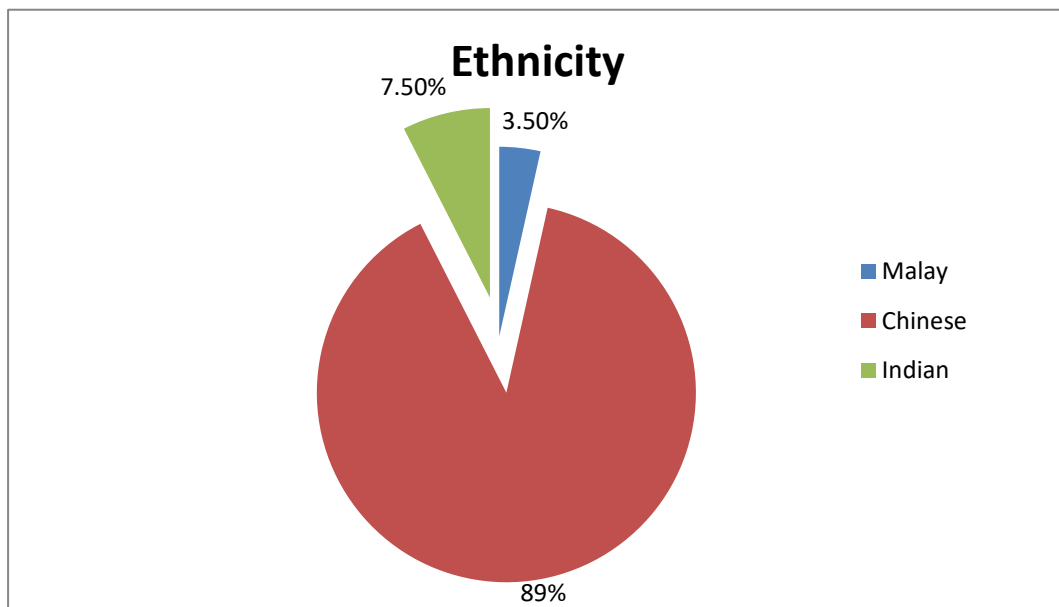
4.1.2.3 Ethnicity

Table 4.4: Ethnicity

		Ethnicity			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Malay	7	3.5	3.5	3.5
	Chinese	178	89.0	89.0	92.5
	Indian	15	7.5	7.5	100.0
	Total	200	100.0	100.0	

Sources: Developed for this research

Chart 4.3 Ethnicity



Source: Developed for the research

Table 4.4 and Chart 4.3 represent the respondents' ethnicity. Based on the table and figure above, 89% or 178 respondents are Chinese, 7.50% or 15 respondents are Indian and 3.50% or 7 respondents are Malay.

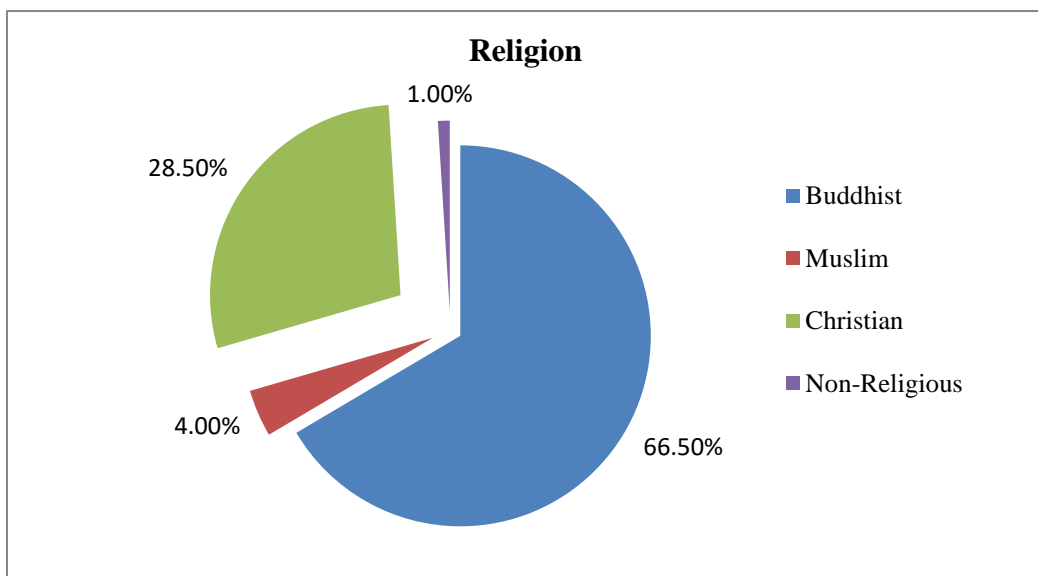
4.1.2.4 Religion

Table 4.5: Religion

Religion				
	Frequency	Percent	Valid Percent	Cumulative Percent
Buddhist	133	66.5	66.5	66.5
Muslim	8	4.0	4.0	70.5
Valid Christian	57	28.5	28.5	99.0
Non-Religious	2	1.0	1.0	100.0
Total	200	100.0	100.0	

Source: Developed for the research

Chart 4.4: Religion



Source: Developed for the research

There are 4 types of religion shown in Table 4.5 and Chart 4.4 which include Buddhist, Muslim, Christian and Non-Religious. Among these four religions, the majority of respondents are Buddhist with a result of 66.5% or 133 persons. Next, the second highest is Christian respondents, which occupy 28.50% or 57 persons. Muslim respondents are third highest among these four religions with the result of 4% or 8 persons and lastly, 1% or 2 respondents are Non-Religious.

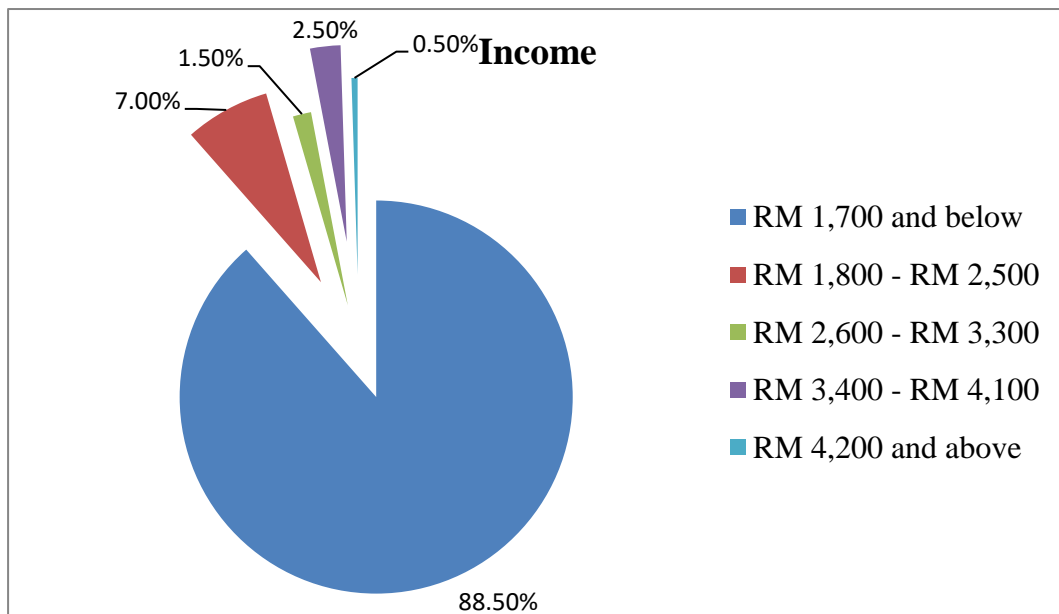
4.1.2.5 Income

Table 4.6 Income

Income				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
RM 1,700 and below	177	88.5	88.5	88.5
RM 1,800 - RM 2,500	14	7.0	7.0	95.5
RM 2,600 - RM 3,300	3	1.5	1.5	97.0
RM 3,400 - RM 4,100	5	2.5	2.5	99.5
RM 4,200 and above	1	.5	.5	100.0
Total	200	100.0	100.0	

Source: Developed for the research

Chart 4.5 Income



Source: Developed for the research

Table 4.6 and Chart 4.5 show five different income groups of respondents. According to the table and figure above, the group of respondents who earned less than RM1,700 per month is 88.50% or 177 respondents which are the highest proportion. However, there are only 0.5% or 1 respondent that earn RM4,200 and above per month. Next, there are 7% or 14

respondents earning between RM1,800 to RM2,500 and 1.5% or 3  
respondents who earned between RM2,600 to RM3,500.

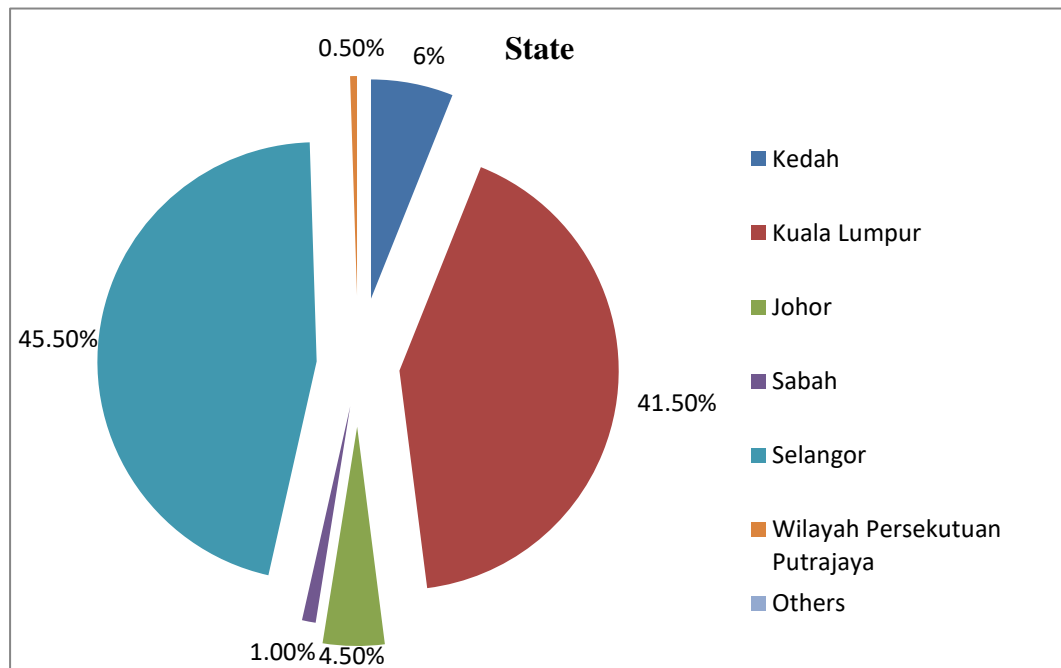
4.1.2.6 State

Table 4.7: State

		State			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Kedah	12	6.0	6.0	6.0
	Kuala Lumpur	83	41.5	41.5	47.5
	Johor	9	4.5	4.5	52.0
	Sabah	2	1.0	1.0	53.0
	Selangor	91	45.5	45.5	98.5
	Wilayah Persekutuan Putrajaya	1	.5	.5	99.0
	Others	2	1.0	1.0	100.0
	Total	200	100.0	100.0	

Source: Developed for the research

Chart 4.6 State



Source: Developed for the research

There are 7 different states shown in Table 4.7 and Chart 4.6 which include Kedah, Kuala Lumpur, Johor, Sabah, Selangor, Wilayah Persekutuan

Putrajaya and others. Out of the total 200 respondents, 45.5% or 91 respondents have currently stayed in Selangor, 41.5% or 83 respondents stay in Kuala Lumpur, 6% or 12 respondents from Kedah, 4.5% or 9 respondents from Johor, 1.0% or 2 respondents from Sabah, 0.5% or 1 respondent from Wilayah Persekutuan Putrajaya and 1.0% or 2 respondents currently staying in other state.



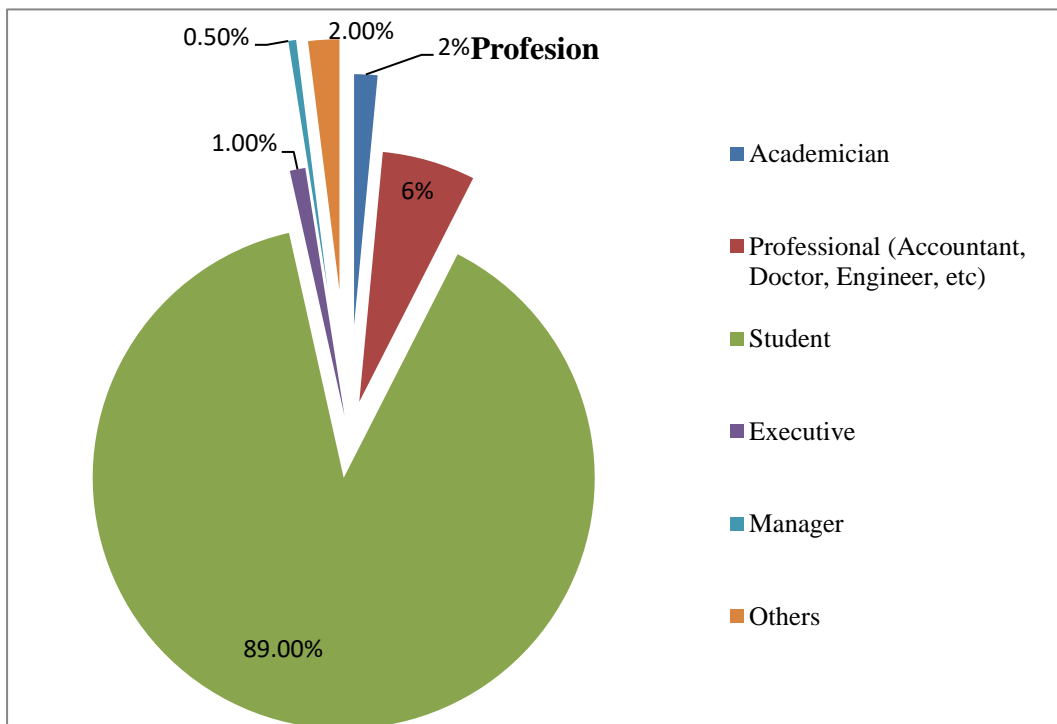
4.1.2.7 Profession

Table 4.8: Profession

Profession				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Student	178	89.0	89.0	89.0
Professional (Accountant, Doctor, Engineer, etc)	12	6.0	6.0	95.0
Academician	3	1.5	1.5	96.5
Executive	2	1.0	1.0	97.5
Manager	1	.5	.5	98.0
Others	4	2.0	2.0	100.0
Total	200	100.0	100.0	

Source: Developed for the research

Chart 4.7: Profession



Source: Developed for the research

Table 4.8 and Chart 4.7 represents the professions of the respondents. Out of the total of 200 respondents, a majority of respondents are students which it occupies 89.0% or 178 respondents. Next, 6.0% or 12 respondents are professional, 1.5% or 3 respondents are academician, 1.0% or 2 respondents are executive and 0.5% or 1 respondent is manager. The remaining 2.0% or 4 respondents are other professions.

### 4.1.3 Central Tendencies Measurement of Constructs

#### 4.1.3.1 Perceived Usefulness

Table 4.9: Central Tendencies Measurement of Constructs – Perceived Usefulness

Statement	SD	D	N	A	SA	Mean	Standard Deviation
1. Vehicle parking mobile payment application will be useful in my life.	5.0	7.5	27.0	47.0	13.5	3.5650	0.98520
2. Using vehicle parking mobile payment application will enable me to accomplish transactions more quickly.	2.5	5.5	32.0	43.5	16.5	3.6600	0.90471
3. Using vehicle parking mobile payment application will increase my productivity.	3.5	6.0	34.0	39.5	17.0	3.6050	0.95579
4. Using vehicle parking mobile payment application will enhance my effectiveness.	4.0	4.5	33.5	41.5	16.5	3.6200	0.94874

Source: Developed for the research.

**SD** : Strongly Disagree

- D** : Disagree  
**N** : Neutral  
**A** : Agree  
**SA** : Strongly Agree

Table 4.9 shows the descriptive statistics developed for this research such as percentage value, the mean and standard deviation for perceived usefulness. The mean score ranges from 3.5650 to 3.6600. The statement of ‘Using vehicle parking mobile payment application will enable me to accomplish transactions more quickly’ has the highest mean value as it is scored at 3.6600 while the statement ‘Vehicle parking mobile payment application will be useful in my life’ possesses the lowest mean value of 3.5650. ‘Using vehicle parking mobile payment application will enhance my effectiveness’ has the mean value of 3.6200 and the statement of ‘Using vehicle parking mobile payment application will increase my productivity’ has the mean value of 3.6050.

4.1.3.2 Personal Innovativeness

Table 4.10 Central Tendencies Measurement of Constructs – Personal Innovativeness

<b>Statement</b>	<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>	<b>Mean</b>	<b>Standard Deviation</b>
1. I think I know more about vehicle parking mobile payment application than my circle of friends.	4.0	9.5	34.0	39.0	13.5	3.4850	0.97701
2. If I heard about a new vehicle parking mobile payment application, I would look for ways to experiment with it.	2.0	4.0	32.5	43.0	18.5	3.7200	0.88061
3. Among my peers, I am usually the first to try out new vehicle parking mobile payment application.	3.0	3.0	37.0	39.5	17.5	3.6550	0.90558
4. In general, I am hesitant to try out vehicle parking mobile payment application. (Reverse)	22.5	45.0	20.0	10.5	2.0	2.2450	0.98480

5. I like to experiment with vehicle parking mobile payment application.	2.5	3.5	35.0	43.0	16.0	3.6650	0.87556
6. I think I would stop using vehicle parking mobile payment application even if I did not know anyone who had done it before.	2.0	5.0	34.5	44.0	14.5	3.6400	0.86262

Source: Developed for the research

**SD** : Strongly Disagree

**D** : Disagree

**N** : Neutral

**A** : Agree

**SA** : Strongly Agree

Table 4.10 exhibits the descriptive statistics developed for this research such as percentage value, the mean and standard deviation for personal innovativeness. The mean score ranges from 2.2450 to 3.7200. The statement of ‘If I heard about a new vehicle parking mobile payment application, I would look for ways to experiment with it’ has the highest mean score of 3.7200 while the statement of ‘I am hesitant to try out vehicle parking mobile payment application’ has the lowest mean score of 2.2450. The statement of ‘Among my peers, I am usually the first to try out new vehicle parking mobile payment application’ and ‘I like to experiment with vehicle parking mobile payment application’ have the same mean value which is 3.6650. The mean score for the statement of ‘I think I would stop using vehicle parking mobile payment application even if I did not know

anyone who had done it before' and 'I think I know more about vehicle parking mobile payment application than my circle of friends' has a mean value of 3.6400 and 3.4850 respectively.

**4.1.3.3 Social Influences**

Table 4.11: Central Tendencies Measurement of Constructs – Social Influences

<b>Statement</b>	<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>	<b>Mean</b>	<b>Standard Deviation</b>
1. People who are important to me think that I should use vehicle parking mobile payment application.	4.5	15.0	28.5	38.5	13.5	3.4150	1.04318
2. People who influence my behavior think that I should use vehicle parking mobile payment application.	7.5	16.5	26.5	34.0	15.5	3.3350	1.14864
3. Peers are helpful in the use of vehicle parking mobile payment application.	6.0	18.0	27.0	37.5	11.5	3.3050	1.08065
4. The business trend encourages the use of vehicle parking mobile payment application.	9.5	20.5	26.5	32.5	11.0	3.1500	1.15506

Source: Developed for the research

**SD** : Strongly Disagree

**D** : Disagree

**N** : Neutral

**A** : Agree

**SA** : Strongly Agree



Table 4.11 manifests the descriptive statistics developed for this research such as percentage value, the mean and standard deviation for social influences. The mean value ranges from 3.1500 to 3.4100. The statement of 'People who are important to me think that I should use vehicle parking mobile payment application' has the highest mean score of 3.4100 while the statement of 'The business trend encourages the use of vehicle parking mobile payment application' has the lowest mean score of 3.1500. The mean score for the remaining two statement including 'People who influence my behavior think that I should use vehicle parking mobile payment application' and 'Peers are helpful in the use of vehicle parking mobile payment application' are 3.3350 and 3.050 respectively.

**4.1.3.4 Convenience**

Table 4.12: Central Tendencies Measurement of Constructs – Convenience

<b>Statement</b>	<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>	<b>Mean</b>	<b>Standard Deviation</b>
1. Vehicle parking mobile payment application is convenient because I always carry a mobile phone.	3	5.5	30.5	44.0	17.0	3.6650	0.92578
2. Vehicle parking mobile payment application is convenient because I can use it anytime.	2.0	3.5	32.0	46.0	16.5	3.7150	0.85288
3. Vehicle parking mobile payment application is convenient because I can use it in any condition.	2.5	6.5	29.0	43.5	18.5	3.6900	0.93179
4. Vehicle parking mobile payment application is convenient because mobile payment service is not complicated.	1.5	3.0	36.0	45.5	14.0	3.6750	0.80786

Source: Developed for the research

**SD** : Strongly Disagree

- D** : Disagree  
**N** : Neutral  
**A** : Agree  
**SA** : Strongly Agree

Table 4.12 shows the descriptive statistics developed for this research such as percentage value, the mean and standard deviation for convenience. The mean value ranges from 3.6650 to 3.7150. The statement of ‘Vehicle parking mobile payment application is convenient because I can use it anytime’ has the highest mean score of 3.7150 while the statement of ‘Vehicle parking mobile payment application is convenient because I always carry a mobile phone’ has the lowest mean score of 3.6650. The mean score of statement ‘Vehicle parking mobile payment application is convenient because I can use it in any condition’ is 3.6900 which is ranked at 2<sup>nd</sup> while the statement of ‘Vehicle parking mobile payment application is convenient because mobile payment service is not complicated’ has a mean value of 3.6700 which is ranked at 3<sup>rd</sup>.

**4.1.3.5 Intention to Use**

Table 4.13: Central Tendencies Measurement of Constructs – Intention to Use

<b>Statement</b>	<b>SD</b>	<b>D</b>	<b>N</b>	<b>A</b>	<b>SA</b>	<b>Mean</b>	<b>Standard Deviation</b>
1. I am likely to use vehicle parking mobile payment application in the near future.	2.0	4.0	34.0	39.0	21.0	3.7300	0.90620
2. I am willing to use vehicle parking mobile payment application in the near future.	3.5	5.0	32.5	36.5	22.5	3.6950	0.98836
3. I intend to use vehicle parking mobile payment application when the opportunity arises.	2.5	3.5	33.5	37.0	23.0	3.7500	0.93373

Source: Developed for the research.

**SD** : Strongly Disagree

**D** : Disagree

**N** : Neutral

**A** : Agree

**SA** : Strongly Agree

Table 4.13 exhibits the descriptive statistics developed for this research such as percentage value, mean and standard deviation for intention to use. The mean score ranges from 3.6950 to 3.7500. The statement of ‘I intend to use vehicle parking mobile payment application when the opportunity arises’

obtains the highest mean score of 3.7500 while the statement of ‘I am willing to use vehicle parking mobile payment application in the near future’ acquires the lowest mean score of 3.6950. The statement of ‘I am likely to use vehicle parking mobile payment application in the near future’ possesses a mean score of 3.7300.

## 4.2 Scale Measurement

### 4.2.1 Internal Reliability Test

Table 4.14: Summary of Reliability Test

<b>NO.</b>	<b>Variable</b>	<b>No. of Items</b>	<b>Cronbach's Alpha</b>	<b>Strength of Association</b>
1	Perceived Usefulness	4	0.889	Very Good
2	Personal Innovativeness	6	0.841	Very Good
3	Social Influences	4	0.786	Good
4	Convenience	4	0.837	Very Good
5	Intention to Use	3	0.903	Excellent

Source: Developed for the research.

From this research, a total of 21 items developed from the questionnaire is involved in the reliability test. Referring to Table 4.14, 5 variables in total (4 independent variables and a dependent variable) have obtained above 0.6 alpha coefficient denoting all variable have satisfactory internal consistency reliability (Zikmund et al., 2013).

From table 14.4, it has shown that intention to use has the highest alpha coefficient of 0.903 among all 5 variables which acquire an excellent

strength of association. Whereas perceived usefulness, personal innovativeness and convenience have a good strength of association with the alpha coefficient of 0.889, 0.841 and 0.837. Social influence with the alpha coefficient of 0.786 has revealed that it only has an acceptable strength of association among the set. Nevertheless, this study is decided to retain the items in the construct since (Nunnally, 1979) recommended that a rule of thumb of 0.7 or better for basic research.

A summary of the internal reliability test is shown in the above Table 4.14. In conclusion, intention to use has the highest reliability among other variables and then followed by perceived usefulness, personal innovativeness and convenience, while the lowest reliability is the social influence among other variables in this thesis.

### 4.3 Inferential Analysis

#### 4.3.1 Pearson’s Correlation Analysis

Pearson’s correlation coefficient analysis is to measure the degree of association between the independent variables and the dependent variable.

Table 4.15: Pearson Correlation Analysis

		Perceived Usefulness	Personal Innovativeness	Social Influences	Convenience	Intention To Use
Perceived Usefulness	Pearson Correlation	1	.835**	.835**	.825**	.797**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	200	200	200	200	200
Personal Innovativeness	Pearson Correlation	.835**	1	.807**	.800**	.824**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	200	200	200	200	200
Social Influences	Pearson Correlation	.835**	.807**	1	.734**	.768**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	200	200	200	200	200
Convenience	Pearson Correlation	.825**	.800**	.734**	1	.832**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	200	200	200	200	200
Intention To Use	Pearson Correlation	.797**	.824**	.768**	.832**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	200	200	200	200	200

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

Source: Developed for the research

Table 4.16 Summary of Result for Pearson Correlation Coefficient

Variable	p-value (significance level of 0.01, 2 tailed)	Correlation coefficient , r	Rank	Direction of association	Strength of association
Perceived Usefulness	0.000	0.797	3	Positive	Strong
Personal Innovativeness	0.000	0.824	2	Positive	Strong
Social Influences	0.000	0.768	4	Positive	Strong
Convenience	0.000	0.832	1	Positive	Strong

Source: Developed for the research

Table 4.15 and 4.16 showed the result for Pearson Correlation Coefficient, all the independent variable (perceived usefulness, personal innovativeness, social influences and convenience) has the same p-value of 0.000 towards the dependent variable (intention to use). This revealed that the correlations of all variables are significant at the level of 0.01, 2 tailed.

According to (Rumsey, 2016), the researchers suggest that proposed that correlation coefficient (r) that is above 0.7 is considered to have a strong uphill positive relationship. Thus, it indicates that all independent variable has a positive and strong relationship towards the dependent variable. Throughout the analysis, convenience has the highest correlation (0.832), followed by personal innovativeness (0.824), perceived usefulness (0.797) and social influence has the lowest correlation (0.768).



### 4.3.2 Multiple Linear Regression

Table 4.17: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.880 <sup>a</sup>	.774	.769	1.24350

a. Predictors: (Constant), Convenience, Social\_Influence, Personal\_Innovativeness, Perceived\_Usefulness

b. Dependent Variable: Intention\_to\_Use

Source: Developed for the research

According to Table 4.15, it has shown the r-value of 0.608, showing that the relationship between each independent variable (perceived usefulness, personal innovativeness, social influences and convenience) and the dependent variable (intention to use vehicle parking mobile payment application) is positively influenced. The Adjusted R square of 0.769 implies that 76.9% of the total variability in the intention to use vehicle parking mobile payment application is influenced by perceived usefulness, personal innovativeness, social influences and convenience.

Table 4.18: Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1033.348	4	258.337	167.068	.000 <sup>b</sup>
	Residual	301.527	195	1.546		
	Total	1334.875	199			

a. Dependent Variable: Intention\_to\_Use

b. Predictors: (Constant), Convenience, Social\_Influences, Personal\_Innovativeness, Perceived\_Usefulness

Source: Developed for the research

According to Table 4.17, the F-value of 167.068 is significant at  $p=0.000$ , where  $p$  is less than 0.01. In conclusion, all independent variable (perceived usefulness, personal innovativeness, social influences and convenience) in

this study positively influence the intention to use vehicle parking mobile payment application in Malaysia.

Table 4.19 Coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.608	.483		-1.260	.209
PU	.045	.062	.057	.733	.465
PI	.196	.044	.311	4.426	.000
SI	.123	.050	.164	2.470	.014
C	.373	.058	.416	6.455	.000

a. Dependent Variable: Intention\_to\_Use  
 Source: Developed for the research

Based on the data shown in Table 4.17, the linear equation for this study can be formed as below:

$$Y = -0.608 + 0.045PU + 0.196PI + 0.123SI + 0.373C$$

Where,

**PU** = Perceived Usefulness

**PI** = Personal Innovativeness

**SI** = Social Influences

**C** = Convenience

According to Table 4.19, it has shown that personal innovativeness and convenience have a direct positive relationship towards the intention to use vehicle parking mobile payment application which obtains a p-value of less than 0.01. However, perceived usefulness and social influence have insignificant positive relationship influences on intentions to use vehicle parking mobile payment application where both variables have the p-value which is greater than 0.01.

Based on the equation of  $Y = -0.608 + 0.045PU + 0.196PI + 0.123SI + 0.373C$ , it showed if there is one unit increasing in a predictor. For example, it can be explained by 1 unit increase in perceived usefulness will contribute additional 0.045 unit in intention to use vehicle parking mobile payment application with the term and condition of the other predictors remain the same. 1 unit increase in personal innovativeness will contribute additional 0.196 unit in intention to use vehicle parking mobile payment application with the term and condition of the other predictors remain the same. 1 unit increase in social influence will contribute additional 0.123 unit in intention to use vehicle parking mobile payment application with the term and condition of the other predictors remain the same. 1 unit increase in convenience will contribute additional 0.373 unit in intention to use vehicle parking mobile payment application with the term and condition of the other predictors remain the same.

Besides, the standardized coefficients beta showed the level of influential among the predictors. In short, convenience has the highest standardized coefficient beta value of 0.416 which indicates that it has the greatest influence on the intention to use vehicle parking mobile payment application. Followed by personal innovativeness has the coefficient beta value of (0.311), social influences (0.164) and perceived usefulness (0.057).

### **4.3.3 Hypothesis Testing**

The result from Multiple Linear Regression analysis is to determine whether the proposed hypotheses are being supported. The researchers use 0.01 as the level of significance and the corresponding confidence level. Therefore, the rejection rule is if  $p\text{-value} \leq \text{level of significant}$ , then reject the null hypothesis  $H_0$  and if  $p\text{-value} > \text{level of significant}$ , then do not reject the null hypothesis  $H_0$ . The table below shows the summary of hypothesized

relationship, there are 2 out of 4 hypotheses being supported while the remaining 2 hypotheses show insignificance results to the study.

Table 4.20: Summary of Hypothesized Relationship

<b>Hypothesis</b>	<b>Outcome</b>	<b>Determination</b>
<b>H1:</b> Perceived usefulness has a positive significant relationship with consumer intention to use vehicle parking mobile payment application in Malaysia.	Multiple Linear Regression Analysis Result: Significant value: 0.456, $p > 0.01$	Not Supported
<b>H2:</b> Personal innovativeness has a positive significant relationship with consumer intention to use vehicle parking mobile payment application in Malaysia.	Multiple Linear Regression Analysis Result: Significant value: 0.000, $p \leq 0.01$	Supported
<b>H3:</b> Social influences has a positive significant relationship with consumer intention to use vehicle parking mobile payment application in Malaysia.	Multiple Linear Regression Analysis Result: Significant value: 0.014, $p > 0.01$	Not Supported
<b>H4:</b> Convenience has a positive significant relationship with consumer intention to use vehicle parking mobile payment application in Malaysia.	Multiple Linear Regression Analysis Result: Significant value: 0.000, $p \leq 0.01$	Supported

Source: Developed for the research

## **4.4 Conclusion**

This chapter summarized the data collected from 200 respondents' set of data and also used descriptive analysis and inferential analysis to compute results. The summarized data will be used to determine if the hypotheses and objectives are met and accepted.

## **CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATIONS**

### **5.0 Introduction**

In this stage, the results on descriptive and inferential analysis are synopsised. Afterward, the implications of this study, conclusion and discussion will be addressed, discussed, applied and delivered in order to improve the future researches.

### **5.1 Summary of Statistical Analysis**

From the respondent demographic profile, the number of male respondents is 147 persons while the number of female respondents is 54% which are 94 persons lesser than male respondents. The largest group of respondents is between 21 to 30 years old among all the respondents followed by age between 18 to 21 years old. A majority of respondents are Chinese followed by Indian and Malay. Besides that, a majority of respondents are Buddhist and the least amount of respondents are Non-Religious. As this study has a majority of students participated, therefore, they are the largest group who earned less than RM1,700 and only a handful of respondents earned between RM2,600 to RM3,300. Moreover, a majority of respondents stay in Selangor followed by Kuala Lumpur.

In the central tendencies measurement of concepts, it lists the mean value for each independent variable and also each item. Under perceived usefulness, the item of “Using vehicle parking mobile payment application will enable me to accomplish transactions more quickly” has the highest mean value. Under personal

innovativeness, the item of “If I heard about a new vehicle parking mobile payment application, I would look for ways to experiment with it” has the highest mean score. For social influences, the item of “People who are important to me think that I should use vehicle parking mobile payment application” has the highest mean score. Moreover, the mean score of the item in convenience which “Vehicle parking mobile payment application is convenient because I can use it anytime” is the highest. Apart from that, the item of “I intend to use vehicle parking mobile payment application when the opportunity arises” in intention to use is the highest.

From the section of the internal reliability test, the internal consistency of a total of 21 items in 5 variables (perceived usefulness, personal innovativeness, social influences and convenience) have been distinguished by the Cronbach’s alpha coefficient. It has shown that intention to use has the highest alpha coefficient which acquires an excellent strength of association followed by perceived usefulness, personal innovativeness, convenience and lastly social influences.

In the section of Pearson’s Correlation Analysis, it indicates that all independent variable has a positive and strong relationship towards the dependent variable. Convenience has the highest correlation (0.832), followed by personal innovativeness (0.824), perceived usefulness (0.797) and social influence has the lowest correlation (0.768).

Besides, in the section of multiple linear regression, it has shown that personal innovativeness and convenience have a direct positive relationship towards the intention to use vehicle parking mobile payment application. However, perceived usefulness and social influences have insignificant positive relationship influences on intentions to use vehicle parking mobile payment application. In a nutshell, there are 2 out of 4 hypotheses being supported while the remaining which the variables are personal innovativeness and convenience.

## 5.2 Discussion on Major Findings

### 5.2.1 Perceived Usefulness

**Hypothesis, H1:** Perceived usefulness has a positive significant relationship with the intention to use the vehicle parking mobile payment application.

The research objective for this thesis is to identify the relationship between the perceived usefulness and the intention to use vehicle parking mobile payment application in Malaysia. The result from analysis in Table 4.19 has showed perceived usefulness has a positive but insignificant relationship with the intention to use the vehicle parking mobile payment application. In other words, the result shows that this study does not match the previous study conducted by (Lee et al., 2003) as it stated that the perceived usefulness is one of the important indications on the consumers' behavioural intention to use a particular technology system. The inconsistency of result may be caused as consumers will only adopt vehicle parking mobile payment application if they found the application is useful to their daily life.

### 5.2.2 Personal Innovativeness

**Hypothesis, H2:** Personal Innovativeness has a positive significant relationship with the intention to use the vehicle parking mobile payment application.

The research objective of this thesis is to identify the relationship between the personal innovativeness and the intention to use vehicle parking mobile payment application in Malaysia. Besides, the hypothesis is stated as



“personal innovativeness has a positive significant relationship with the intention to use the vehicle parking mobile payment application”. (Leonard-Barton & Deschamps, 1988) stated that individuals who are willing to take challenges (risk taker) are more likely to adopt and/or use new products or services. Thus, personal innovativeness plays an important factor in this research as this research is discussed about the intention to use vehicle parking mobile payment application as the vehicle parking mobile payment application is considered innovate in Malaysia.

In conclusion, the result of personal innovativeness is consistent and matches with the previous study. Therefore, it indicates that personal innovativeness has positive significant relationship with the intention to use the vehicle parking mobile payment application.

### 5.2.3 Social Influences

**Hypothesis, H3:** Social Influences has a positive significant relationship with the intention to use the vehicle parking mobile payment application.

The research objective of this thesis is to identify the relationship between the social influences and the intention to use vehicle parking mobile payment application in Malaysia. Besides, the hypothesis is stated as “social influences has a positive but insignificant relationship with the intention to use the vehicle parking mobile payment application”. The social influences have an impact on behavioural intention and customer adaptation. Proven by (White & Argo, 2011), major consumers are being imitated by other consumers such as friends, subordinates and relatives about the reactions or decision making on the product choice which is inconsistent with the result. This indicates that even consumer’s intention to use mobile application can

be influenced by social, but their motivations are positively influenced by perceived usefulness and easiness of adoption.

#### 5.2.4 Convenience

**Hypothesis, H4:** Convenience has a positive significant relationship with the intention to use the vehicle parking mobile payment application.

The aim of this research is to identify the relationship between the convenience and the intention to use vehicle parking mobile payment application in Malaysia. The result of this thesis showed that there is a positive significant relationship with the intention to use the vehicle parking mobile payment application. Therefore, the result of convenience is consistent and matches with the previous study. Thus, the hypothesis is stated as “convenience has a positive significant relationship with the intention to use the vehicle parking mobile payment application”. According to (Delafrooz, Paim, & Khatibi, 2011; J.-I. Kim, Lee, & Kim, 2004), convenience has the ability to affect and influence consumers’ adopting decision. Therefore, convenience is one of the significant factors can be considered when consumers’ trying to make a purchase or give a try on a particular information system.

## **5.3 Implications of the Study**

### **5.3.1 Managerial Implications**

Knowing that the perceived usefulness, personal innovativeness, social influences and convenience are considerable to consumers in the adoption of vehicle parking mobile payment application. Thus, this will benefit the parking app developer, government and consumers. Parking app developer will be able to improve the quality of the application, to be more efficient and effective, and develop more advanced features. This is because consumers nowadays are being sophisticated with changing technology.

Besides, the government can get data and online reporting on user statistics for city planning purpose. City planning as in government will decide whether to increase the number of the bay by relying on the data which the data will tell which areas have insufficient parking.

This research does give contributions to the general public as finding parking space in the city could be a pain. The vehicle parking mobile payment application saves drivers the hassle of buying parking coupon booklets. With the app, the drivers need not scratch lots of coupon from a fresh coupon if they have to park for a long time which results in time-saving. Furthermore, the drivers need not rush back to their vehicle to scratch coupon from a fresh coupon if their parking sessions are about to expire. With the app, the drivers can extend their parking session remotely without the need to rush back to their vehicle and scratch coupon from a fresh coupon. It also eases the drivers to pay for their summons, without the need to go to the nearest station to pay for their summons and also without the need to queue up.

## 5.4 Limitations of the Study

One of the main limitations of this study would be the target respondents are mostly students from universities or colleges, thus sample size may not appropriately represent the whole population of the Malaysian. Not every person of the target population has been given chance to take and answer the survey, therefore, it would be a certain risk in polluting researchers' data with selection bias. Convenience samples are just literal mean: choosing respondents that we can conveniently reach without regard to their demographic data. These include respondents who are easier to select and also who are more likely to participate. Collecting data from social media such as Facebook, Google Forms and so on are a form of convenience sampling method.

Sample size in this research is 200 whereby the number of respondents of this study cannot be represented the whole Malaysia population precisely and accurately. Although the desired sample size is larger than 30 and less than 500 for a research. As the perception of adopting and using mobile applications are highly differentiated across states.

Because of the short time frame, researchers basically did not enough time to learn more about the selection process and to review relevant data and past literature to support this study. Researchers have been collecting samples, conducting research and analyzation on the collected data to obtain as much information as possible in order to derive the recommendations of this study.

Although there are four independent variables in this study. It is common to include more than four independent variables in a research to increase the reliability and accuracy of the study in order to represent the whole Malaysia population precisely. By including multiple independent variables (environmental awareness, perceived risk, perceived ease of use and perceived enjoyment) will allow researchers to answer questions about

whether the effect of one independent variable depends on the level of another.

## **5.5 Recommendations for Future Research**

Future researchers can include a few more independent variables into this study such as perceived ease of use, environmental awareness, perceived enjoyment and perceived risk in a way of expanding the theoretical framework in this thesis. As such, it will increase the credibility and reliable of the research on the intention to use vehicle parking mobile payment application in Malaysia. It can provide reliable information to the parking app developers and the government to get to know their target consumers for their products. The future researcher is also encouraged to expand the scope of this research by expanding the field to investigate. For example, the current research is more emphasis on cars users. Therefore, future research can expand it to motorcyclists, lorry drivers, van drivers and so on.

In addition, it is advised that future researchers conduct a research on the factors that affect consumers not to adopt the vehicle parking mobile payment application in Malaysia. This could help the parking app developers and the government to understand the cons of adopting the application and inadequate. Besides, it also helps the parking app developers and the government to understand why the penetration rate of vehicle parking mobile payment application in Malaysia is low.

A selection of a larger sample size is encouraged that is because it can represent the Malaysia population more accurately. Thus, it will generate more accurate study, more precise, more persuadable and more convince towards the individuals' intention to use vehicle parking mobile payment application in Malaysia. In order to make the research more accurate, the future researcher should cover the larger geographical area and different age groups. The larger the geographic areas covered, the more reliable and precise data will be generated. Thus, by distributing the research questionnaire equally, the results are more likely to be more precise as it

is answered by respondents from different age groups from different geographical areas.

## **5.6 Conclusion**

In a nutshell, this research has been successfully achieved the research objectives, problem statement and hypotheses development. Besides, there are few limitations had been listed in the research, future researchers are encouraged to take note on it and provide solutions to those limitations. Last but not least, it is highly recommended to include perceived ease of use, environmental awareness and perceived risk to this research.

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## **Appendix A: Questionnaire**



**UNIVERSITI TUNKU ABDUL RAHMAN  
FACULTY OF ACCOUNTACY AND MANAGEMENT**

**BACHELOR OF INTERNATIONAL BUSINESS  
(HONS)**

**Title of Topic:**

**The Determinants of Intention to Use  
Vehicle Parking Mobile Payment Application**

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**Survey Questionnaire**

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Dear respected respondents,

We are undergraduate students from Universiti Tunku Abdul Rahman (UTAR) and currently pursuing a Bachelor's Degree in International Business (HONS). We are conducting a research study for our Final Year Project "**The Determinants of Intention to Use Vehicle Parking Mobile Payment Application**". This purpose of this research is to grasp consumers' intention to use vehicle parking mobile payment application can be affected by perceived usefulness, personal innovativeness, social influences and convenience.

This questionnaire consists of two sections which are Section A and Section B. Sorry for such a long introductory questionnaire as it. Your responses are highly appreciated and extremely important to us and therefore it will be kept confidential.

Please take note that you are allowed to work at your own pace and you may stop filling up this survey at any time if you feel uncomfortable. All the information/data provided will be kept **CONFIDENTIAL STRICTLY** under the Personal Data Protection Act (PDPA) 2010. All intelligence will be used for research purpose only. Your cooperation in this regard will be highly appreciated.

Thank you for taking the time to participate and your prompt response.

---

Group Members:

<b>Name</b>	<b>ID</b>
Low Yuan Yi	1507183
Poh Han Zheng	1700577





9. Profession:

Student     Professional (Accountant, Doctor, Engineer, etc)

Executive     Academician

Manager     Housewife

Business Owner     Others

**Section B:** *Evaluate the factors influencing users' intention to use vehicle parking mobile payment application.*

Within this section, we genuinely seek for your opinion detail the factors use vehicle parking mobile payment application. Please indicate the extent to which you agreed or disagreed with each statement using 5 points Likert Scale.

(1) = Strongly Disagree      (2) = Disagree (3) = Neutral  
(4) = Agree                      (5) = Strongly Agree

Please **CIRCLE** one number per line to show the extent to which you agreed or disagreed with the following statements.

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1. **Perceived Usefulness**

	SD	D	N	A	SA
a. Vehicle parking mobile payment application will be useful in my life.	1	2	3	4	5
b. Using vehicle parking mobile payment application will enable me to accomplish transactions more quickly.	1	2	3	4	5
c. Using vehicle parking mobile payment application will increase my productivity.	1	2	3	4	5
d. Using vehicle parking mobile payment application will enhance my effectiveness.	1	2	3	4	5

**2. Personal Innovativeness**

Statement	SD	D	N	A	SA
1. I think I know more about vehicle parking mobile payment application than my circle of friends.	1	2	3	4	5
2. If I heard about a new vehicle parking mobile payment application, I would look for ways to experiment with it.	1	2	3	4	5
3. Among my peers, I am usually the first to try out new vehicle parking mobile payment application.	1	2	3	4	5
4. In general, I am hesitant to try out vehicle parking mobile payment application. (Reverse)*	1	2	3	4	5
5. I like to experiment with vehicle parking mobile payment application.	1	2	3	4	5
6. I think I would stop using vehicle parking mobile payment application even if I did not know anyone who had done it before.	1	2	3	4	5

3. **Social Influences**

Statement	SD	D	N	A	SA
1. People who are important to me think that I should use vehicle parking mobile payment application.	1	2	3	4	5
2. People who influence my behaviour think that I should use vehicle parking mobile payment application.	1	2	3	4	5
3. Peers are helpful in the use of vehicle parking mobile payment application.	1	2	3	4	5
4. The business trend encourages the use of vehicle parking mobile payment application.	1	2	3	4	5

4. **Convenience**

Statement	SD	D	N	A	SA
1. Vehicle parking mobile payment application is convenient because I always carry a mobile phone.	1	2	3	4	5
2. Vehicle parking mobile payment application is convenient because I can use it anytime.	1	2	3	4	5
3. Vehicle parking mobile payment application is convenient because I can use it in any condition.	1	2	3	4	5
4. Vehicle parking mobile payment application is convenient because mobile payment service is not complicated.	1	2	3	4	5

**5. Intention-to-Use**

Statement	SD	D	N	A	SA
1. I am likely to use vehicle parking mobile payment application in the near future.	1	2	3	4	5
2. I am willing to use vehicle parking mobile payment application in the near future.	1	2	3	4	5
3. I intend to use vehicle parking mobile payment application when the opportunity arises.	1	2	3	4	5

Thank you for your valuable time, opinion and comments.

**Appendix E: SPSS Outputs**

**1. SPSS Output: Respondent Demographic Profile**

**Gender**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	147	73.5	73.5	73.5
Valid Female	53	26.5	26.5	100.0
Total	200	100.0	100.0	

**Age**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Below 18 years old	43	21.5	21.5	21.5
Valid 18 - 21 years old	59	29.5	29.5	51.0
Valid 21 - 30 years old	83	41.5	41.5	92.5
Valid 31 years old & above	15	7.5	7.5	100.0
Total	200	100.0	100.0	

**Ethnicity**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Malay	7	3.5	3.5	3.5
Valid Chinese	178	89.0	89.0	92.5
Valid Indian	15	7.5	7.5	100.0
Total	200	100.0	100.0	



The Determinants Of Intention To Use Vehicle Parking Mobile Payment Application

**Religion**

	Frequency	Percent	Valid Percent	Cumulative Percent
Buddhist	133	66.5	66.5	66.5
Muslim	8	4.0	4.0	70.5
Valid Christian	57	28.5	28.5	99.0
Non-Religious	2	1.0	1.0	100.0
Total	200	100.0	100.0	

**State**

	Frequency	Percent	Valid Percent	Cumulative Percent
Kedah	12	6.0	6.0	6.0
Kuala Lumpur	83	41.5	41.5	47.5
Johor	9	4.5	4.5	52.0
Sabah	2	1.0	1.0	53.0
Valid Selangor	91	45.5	45.5	98.5
Wilayah Persekutuan Putrajaya	1	.5	.5	99.0
Others	2	1.0	1.0	100.0
Total	200	100.0	100.0	

**Profession**

	Frequency	Percent	Valid Percent	Cumulative Percent
Student	178	89.0	89.0	89.0
Professional (Accountant, Doctor, Engineer, etc)	12	6.0	6.0	95.0
Valid Academician	3	1.5	1.5	96.5
Executive	2	1.0	1.0	97.5
Manager	1	.5	.5	98.0
Others	4	2.0	2.0	100.0
Total	200	100.0	100.0	

**2. SPSS Output: Central Tendencies Measurement of Constructs**

**Scale: Perceived Usefulness**

**PU1**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	10	5.0	5.0	5.0
Slightly Disagree	15	7.5	7.5	12.5
Neutral	54	27.0	27.0	39.5
Slightly Agree	94	47.0	47.0	86.5
Strongly Agree	27	13.5	13.5	100.0
Total	200	100.0	100.0	

**PU2**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	5	2.5	2.5	2.5
Slightly Disagree	11	5.5	5.5	8.0
Neutral	64	32.0	32.0	40.0
Slightly Agree	87	43.5	43.5	83.5
Strongly Agree	33	16.5	16.5	100.0
Total	200	100.0	100.0	

**PU3**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	7	3.5	3.5	3.5
Slightly Disagree	12	6.0	6.0	9.5
Neutral	68	34.0	34.0	43.5
Slightly Agree	79	39.5	39.5	83.0
Strongly Agree	34	17.0	17.0	100.0
Total	200	100.0	100.0	

The Determinants Of Intention To Use Vehicle Parking Mobile Payment Application

**PU4**

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	8	4.0	4.0	4.0
Slightly Disagree	9	4.5	4.5	8.5
Neutral	67	33.5	33.5	42.0
Slightly Agree	83	41.5	41.5	83.5
Strongly Agree	33	16.5	16.5	100.0
Total	200	100.0	100.0	

**Scale: Personal Innovativeness**

**PI1**

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	8	4.0	4.0	4.0
Slightly Disagree	19	9.5	9.5	13.5
Neutral	68	34.0	34.0	47.5
Slightly Agree	78	39.0	39.0	86.5
Strongly Agree	27	13.5	13.5	100.0
Total	200	100.0	100.0	

**PI2**

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	4	2.0	2.0	2.0
Slightly Disagree	8	4.0	4.0	6.0
Neutral	65	32.5	32.5	38.5
Slightly Agree	86	43.0	43.0	81.5
Strongly Agree	37	18.5	18.5	100.0
Total	200	100.0	100.0	

The Determinants Of Intention To Use Vehicle Parking Mobile Payment Application

**PI3**

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	6	3.0	3.0	3.0
Slightly Disagree	6	3.0	3.0	6.0
Neutral	74	37.0	37.0	43.0
Slightly Agree	79	39.5	39.5	82.5
Strongly Agree	35	17.5	17.5	100.0
Total	200	100.0	100.0	

**PI4**

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	45	22.5	22.5	22.5
Slightly Disagree	90	45.0	45.0	67.5
Neutral	40	20.0	20.0	87.5
Slightly Agree	21	10.5	10.5	98.0
Strongly Agree	4	2.0	2.0	100.0
Total	200	100.0	100.0	

**PI5**

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	5	2.5	2.5	2.5
Slightly Disagree	7	3.5	3.5	6.0
Neutral	70	35.0	35.0	41.0
Slightly Agree	86	43.0	43.0	84.0
Strongly Agree	32	16.0	16.0	100.0
Total	200	100.0	100.0	

The Determinants Of Intention To Use Vehicle Parking Mobile Payment  
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**PI6**

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	4	2.0	2.0	2.0
Slightly Disagree	10	5.0	5.0	7.0
Neutral	69	34.5	34.5	41.5
Slightly Agree	88	44.0	44.0	85.5
Strongly Agree	29	14.5	14.5	100.0
Total	200	100.0	100.0	

**Scale: Social Influences**

**S11**

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	9	4.5	4.5	4.5
Slightly Disagree	30	15.0	15.0	19.5
Neutral	57	28.5	28.5	48.0
Slightly Agree	77	38.5	38.5	86.5
Strongly Agree	27	13.5	13.5	100.0
Total	200	100.0	100.0	

**S12**

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	15	7.5	7.5	7.5
Slightly Disagree	33	16.5	16.5	24.0
Neutral	53	26.5	26.5	50.5
Slightly Agree	68	34.0	34.0	84.5
Strongly Agree	31	15.5	15.5	100.0
Total	200	100.0	100.0	

**SI3**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	12	6.0	6.0	6.0
Slightly Disagree	36	18.0	18.0	24.0
Neutral	54	27.0	27.0	51.0
Slightly Agree	75	37.5	37.5	88.5
Strongly Agree	23	11.5	11.5	100.0
Total	200	100.0	100.0	

**SI4**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	19	9.5	9.5	9.5
Slightly Disagree	41	20.5	20.5	30.0
Neutral	53	26.5	26.5	56.5
Slightly Agree	65	32.5	32.5	89.0
Strongly Agree	22	11.0	11.0	100.0
Total	200	100.0	100.0	

**Scale: Convenience**

**C1**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	6	3.0	3.0	3.0
Slightly Disagree	11	5.5	5.5	8.5
Neutral	61	30.5	30.5	39.0
Slightly Agree	88	44.0	44.0	83.0
Strongly Agree	34	17.0	17.0	100.0
Total	200	100.0	100.0	

The Determinants Of Intention To Use Vehicle Parking Mobile Payment Application

**C2**

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	4	2.0	2.0	2.0
Slightly Disagree	7	3.5	3.5	5.5
Neutral	64	32.0	32.0	37.5
Slightly Agree	92	46.0	46.0	83.5
Strongly Agree	33	16.5	16.5	100.0
Total	200	100.0	100.0	

**C3**

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	5	2.5	2.5	2.5
Slightly Disagree	13	6.5	6.5	9.0
Neutral	58	29.0	29.0	38.0
Slightly Agree	87	43.5	43.5	81.5
Strongly Agree	37	18.5	18.5	100.0
Total	200	100.0	100.0	

**C4**

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	3	1.5	1.5	1.5
Slightly Disagree	6	3.0	3.0	4.5
Neutral	72	36.0	36.0	40.5
Slightly Agree	91	45.5	45.5	86.0
Strongly Agree	28	14.0	14.0	100.0
Total	200	100.0	100.0	

**Scale: Intention to Use**

**IU1**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	4	2.0	2.0	2.0
Slightly Disagree	8	4.0	4.0	6.0
Neutral	68	34.0	34.0	40.0
Slightly Agree	78	39.0	39.0	79.0
Strongly Agree	42	21.0	21.0	100.0
Total	200	100.0	100.0	

**IU2**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	7	3.5	3.5	3.5
Slightly Disagree	10	5.0	5.0	8.5
Neutral	65	32.5	32.5	41.0
Slightly Agree	73	36.5	36.5	77.5
Strongly Agree	45	22.5	22.5	100.0
Total	200	100.0	100.0	

**IU3**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	5	2.5	2.5	2.5
Slightly Disagree	7	3.5	3.5	6.0
Neutral	67	33.5	33.5	39.5
Slightly Agree	75	37.5	37.5	77.0
Strongly Agree	46	23.0	23.0	100.0
Total	200	100.0	100.0	



### 3. SPSS Output: Pilot Study Reliability Test

#### Perceived Usefulness

Scale: ALL VARIABLES

##### Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded <sup>a</sup>	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

##### Reliability Statistics

Cronbach's Alpha	N of Items
.808	4

#### Personal Innovativeness

Scale: ALL VARIABLES

##### Case Processing Summary

		N	%
Cases	Valid	30	100.0
	Excluded <sup>a</sup>	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

##### Reliability Statistics

Cronbach's Alpha	N of Items
.877	6

**Social Influences**

Scale: ALL VARIABLES

**Case Processing Summary**

		N	%
Cases	Valid	30	100.0
	Excluded <sup>a</sup>	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.856	4

**Convenience**

Scale: ALL VARIABLES

**Case Processing Summary**

		N	%
Cases	Valid	30	100.0
	Excluded <sup>a</sup>	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.652	4

**Intention to use**

**Scale: ALL VARIABLES**

**Case Processing Summary**

		N	%
Cases	Valid	30	100.0
	Excluded <sup>a</sup>	0	.0
	Total	30	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.873	3

**4. SPSS Output: Reliability Test**

**Perceived Usefulness**

**Scale: ALL VARIABLES**

**Case Processing Summary**

		N	%
Cases	Valid	200	100.0
	Excluded <sup>a</sup>	0	.0
	Total	200	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.889	4

**Personal Innovativeness**  
**Scale: ALL VARIABLES**

**Case Processing Summary**

		N	%
Cases	Valid	200	100.0
	Excluded <sup>a</sup>	0	.0
	Total	200	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.841	6

**Social Influences**  
**Scale: ALL VARIABLES**

**Case Processing Summary**

		N	%
Cases	Valid	200	100.0
	Excluded <sup>a</sup>	0	.0
	Total	200	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.786	4

**Convenience**

**Scale: ALL VARIABLES**

**Case Processing Summary**

		N	%
Cases	Valid	200	100.0
	Excluded <sup>a</sup>	0	.0
	Total	200	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.837	4

**Intention-to-Use**

**Scale: ALL VARIABLES**

**Case Processing Summary**

		N	%
Cases	Valid	200	100.0
	Excluded <sup>a</sup>	0	.0
	Total	200	100.0

a. Listwise deletion based on all variables in the procedure.

**Reliability Statistics**

Cronbach's Alpha	N of Items
.903	3

**5. SPSS Output: Pearson's Correlation Analysis**

		Perceived Usefulness	Personal Innovativeness	Social Influences	Convenience	Intention to Use
PU	Pearson Correlation	1	.835**	.835**	.825**	.797**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	200	200	200	200	200
PI	Pearson Correlation	.835**	1	.807**	.800**	.824**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	200	200	200	200	200
SI	Pearson Correlation	.835**	.807**	1	.734**	.768**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	200	200	200	200	200
C	Pearson Correlation	.825**	.800**	.734**	1	.832**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	200	200	200	200	200
Intention To Use	Pearson Correlation	.797**	.824**	.768**	.832**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	200	200	200	200	200

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

**6. SPSS Output: Multiple Linear Regression Analysis**

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.880 <sup>a</sup>	.774	.769	1.24350

a. Predictors: (Constant), Convenience, Social\_Influence, Personal\_Innovative, Perceived\_Usefulness

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**ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1033.348	4	258.337	167.068	.000 <sup>b</sup>
Residual	301.527	195	1.546		
Total	1334.875	199			

a. Dependent Variable: Intention\_to\_Use

b. Predictors: (Constant), Convenience, Social\_Influences, Personal\_Innovative, Perceived\_Usefulness

**Coefficient**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.608	.483		-1.260	.209
PU	.045	.062	.057	.733	.465
PI	.196	.044	.311	4.426	.000
SI	.123	.050	.164	2.470	.014
C	.373	.058	.416	6.455	.000

a. Dependent Variable: Intention\_to\_Use