THE EFFECTIVENESS OF E-PAYMENT TRANSACTIONS USING ENCRYPTED QR CODE

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by

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2.	**Overall report format**	*Submit according to acquired format*	The report is not produced according to the specified time	The report is produced according to the specified time but fails	The report is produced on time, adheres to the	The report is produced on time,	____ x 0.25	

(5 MARKS)		and/ or according to the format	to adhere to the format.	format but with few weaknesses.	adheres to the format without any weaknesses.	(Max: 1)
	Writing styles (clarity, expression of ideas and coherence)	The report is poorly written and difficult to read. Many points are not explained well. Flow of ideas is incoherent.	The report is adequately written; Some points lack clarity. Flow of ideas is less coherent.	The report is well written and easy to read; Majority of the points is well explained, and flow of ideas is coherent.	The report is written in an excellent manner and easy to read. All of the points made are crystal clear with coherent argument.	____ x 0.25 (Max: 1)
	Technicality (Grammar, theory, logic and reasoning)	The report is grammatically, theoretically, technically and logically incorrect.	There are many errors in the report, grammatically, theoretically, technically and logically.	The report is grammatically, theoretically, technically and logically correct in most of the chapters with few weaknesses.	The report is grammatically, theoretically, technically, and logically perfect in all chapters without any weaknesses.	____ x 0.25 (Max: 1)
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3.	**Research Findings and Discussion**	Data is not adequate and irrelevant.	Data is fairly adequate and irrelevant.	Data is adequate and relevant.	Data is adequate and very relevant.	____ x 1 (Max: 4)

		(20 MARKS)	Measurement is wrong and irrelevant	Measurement is suitable and relevant but need major adjustment.	Measurement is suitable and relevant but need minor adjustment.	Measurement is excellent and very relevant.	____ x 1 (Max: 4)	
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			Data analysis is not supported with relevant output/figures/tables and etc.	Data analysis is fairly supported with relevant output/figures/tables and etc.	Data analysis is adequately supported with relevant output/figures/table and etc.	Data analysis is strongly supported with relevant output/figures/table and etc.	____ x 1 (Max: 4)	
			Interpretation on analyzed data is wrong.	Interpretation on analyzed data is weak.	Interpretation on analyzed data is satisfactory.	Interpretation on analyzed data is excellent	____ x 1 (Max: 4)	
4.	**Conclusion and Recommendations (15 MARKS)**		Implication of study is not stated.	Implication of study is weak.	Implication of study is good.	Implication of study is excellent	____ x 1.25 (Max: 5)	
			Conclusion is not stated	Conclusion is weakly explained.	Conclusion is satisfactorily explained.	Conclusion is well explained.	____ x 1.25 (Max:5)	
			Recommendation is not adequate and irrelevant.	Recommendation is fairly adequate and irrelevant.	Recommendation is adequate and relevant.	Recommendation is adequate and very relevant.	____ x 1.25 (Max:5)	
						TOTAL (50 MARKS)		

ACKNOWLEDGEMENT

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

Abbreviations

COVID-19	Coronavirus Disease 2019
E-payment	Electronic payment
IR 4.0	Industrial Revolution 4.0
QR code	Quick Response code
SPSS	Statistic Package for Social Science

ABSTRAK

E-pembayaran boleh ditakrifkan sebagai cara lain untuk membayar barangan atau perkhidmatan. Orang ramai tidak perlu keluar untuk mendapatkannya sebaliknya mereka boleh memesan dan mendapatkannya melalui dalam talian. Ia sangat mudah digunakan di mana pengguna hanya memerlukan peranti elektronik seperti komputer, telefon pintar atau tablet untuk membuat sebarang transaksi dalam talian. Seiring dengan kemajuan teknologi, e-pembayaran juga telah mengalami perubahan teknologi di mana ia telah berubah daripada penggunaan kad kredit atau debit dan pindahan bank kepada penggunaan kod QR untuk menjalankan transaksi. Kod QR dipercayai mempunyai banyak ciri khas yang boleh menambah baik cara e-pembayaran beroperasi. Objektif dan tujuan utama penyelidikan ini adalah untuk mengkaji kesan akses maklumat, kemudahan dan keselamatan terhadap keberkesanan kod QR dalam e-pembayaran. Kajian semasa ini menggunakan metodologi kuantitatif dan mengumpul data daripada 269 responden daripada pelajar Tahun 3 di bawah Fakulti Keusahawanan dan Perniagaan di Universiti Malaysia Kelantan.

Kata kunci: Maklumat Akses, Mudah, Keselamatan, Kod QR, E-pembayaran

ABSTRACT

E-payment can be defined as the other way to paying goods or services. People are no need to go out to get it instead they can order and get it through online. It is very easy to use where the user just needs electronic devices such as computers, smartphones or tablets to make any online transactions. Along with the advancement of technology, e-payment has also undergone technological changes where it has changed from the use of credit or debit cards and bank transfers to the use of QR codes to conduct transactions. QR codes are believed to have many special features that can improve the way e-payments operate. The objective and primarily aim of this research are to study the effect of access information, convenient and security to the effectiveness of QR code in e-payment. This current study adopted quantitative methodology and collect data from 269 respondents from Year 3 students under Faculty of Entrepreneurship and Business in University Malaysia Kelantan.

Keywords: Access Information, Convenient, Security, QR Codes, E-payment

CHAPTER 1: INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Nowadays, the usage of e-payment is increasing especially among young adults and teenager. According to the Erik Eriksons, human development can be classify based on several stages such as for young adult can be determined between the ages of 19 and 39, while for teenager is between the ages of 13 and 18. The rapid growth of technology has made the e-payment become more popular due to its ease of use. Human excitement with new technologies and innovation frequently drives the interest in e-payments. Apart from this, as a developing country, Malaysia aspires to become a country that focuses on a cashless society by 2050. Although the journey is still far, digital payments have been introduced and accepted by various walks of life. According to a study from Nielsen (2019), Malaysians spend a lot of time on social media and the percentage is 78%. While the rest are buying goods through online this is 34%.

Therefore, it is exposed to The Fourth Industrial Revolution (IR 4.0) wave which affects payment changes. Please be informed that prior to the existence of cash, each transaction only operates system barter. When this system achieve some progress, there will be a process done such as the existence of cash and then by using card and finally, e-payment. The image below refers to the processes run from the past year to the world of technology.

Figure 1.1: The process of changing the method of payment

1

Due to the pandemic that exist, most countries in the world have put in place movement controls to curb the spread of COVID-19. This is because according to the World Health Organization, one of the ways to spread COVID-19 is that it can spread to humans directly and indirectly (through contaminated objects or surfaces). The impact of COVID-19 is very large for the fabric of people's lives (Priantoro, 2020). People are started to change their behavioral of purchasing by change payment by cash to e-payment. There are various type of e-payments; Touch n' Go, Boost, online banking, PayPal and so on. The study focuses mostly on the use of QR codes for e-payment.
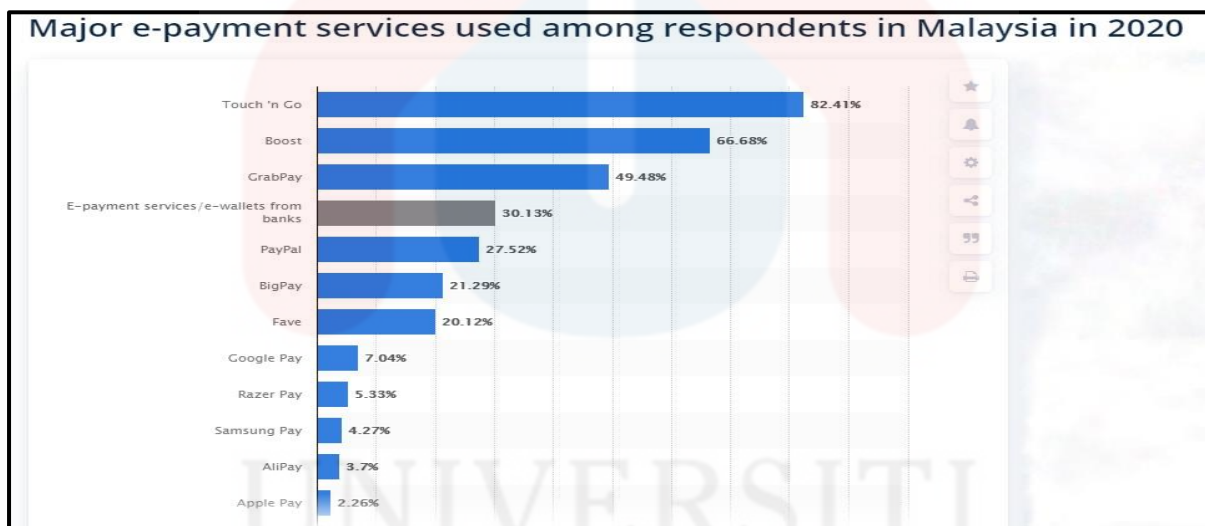
Figure 1.2: The statistics of major e-payment services in Malaysia in 2020

Due to pandemic COVID-19 and movement control order, movement restrictions included national travel restrictions (unless needed goods and services such as food, daily necessities and health services are required to buy or supply) and international travel prohibitions (except for residents returning to Malaysia). To solve these problems, Bank Muamalat Malaysia Berhad (BMMB) introduced a new zakat payer system using digital payment namely QR code (Daily News, 2020).

QR code was created after the development of information technology and the introduction of wireless networks. QR codes can store all the information and simplify the process. In addition, we can see it in various places, because the acceptance is accepted by human who facilitates all matters either in finding information or making payments. This QR code is like a barcode but is distinguished by its design and ability to accommodate information. In addition to being able to make payments without cash, he is also able to open the website. Therefore, the difference QR code can be seen when compared to barcode.

In general, QR code is a form of matrix code or two-dimensional barcode that can be read from numerous directions horizontally or vertically. Initially it is used to identify car components in manufacturing firms, but presently QR code used for a broader range of applications, including commercial applications and payment channels for mobile phone users, have been developed and employed. QR codes are typically utilized as one or two dimensions since they are compact and cost-effective. Consumers can scan these codes with their cellphones (Creydt & Fischer, 2019).

Figure 1.3: Example of QR code in the application

Figure above can be seen as an example of payment via QR code. To facilitate the business, then it is strongly encouraged to download the application. This QR code is growing rapidly in China well. China focuses heavily on QR code payments because it has a unique need to make QR code payments (Zhang, 2017).

Even though, the time has changed in a term of concept of physical payments to electronic payments (e-payment). Proving that the general public no longer has to pay for products and services with money or credit or debit cards (De Luna, 2019), because there are e-payments that can be ease the life of human. By only using smartphones (Chawla and Joshi, 2019) people just have to scan the QR code and thus can make any transaction payment online quickly. The method used known as the Electronic Data Capture (EDC) terminal. The study from China in 2020, a total of 853 million people (86.5%) have used online payment i.e. QR code (Liu, 2020). In Malaysia, card and cash payments are still in the top spot in payment methods, various efforts to replace cashless payments (Nielsen, 2019). Therefore, government has provided an incentive RM30 in 2020 that can be claimed using e-wallets such as Touch n' Go, Boost and GrabPay (Zahid, 2020). In 2021, government again provides assistance of RM150 for youths to encourage cashless payments. Through this incentive, it can influence people to started using e-payment.

The factors of using QR code are it can access information quickly. This is because available smartphones are capable of reading and at the same time making payments as quickly as possible. In the QR code can generate customer details such as name, card number and CVV along with the expiration date. Each purchase will be shipped in the past (Surekha, 2015). The following factors that can be used are user comfort in adapting to the technology. From previous studies can be seen from a positive angle the use of mobile payments can be felt with the existing use (Liebana-Cabanillas, 2014). Next is the environment. Usually urban

areas are more prone to mobile payments such as QR code in every store. The environment is capable of having an impact from a social point of view (Yang, 2012).

Advantages in the use of QR code are it is more safety because we do not have to bring bank card or cash everywhere. If making payment use bank card either debit or credit card, the possibility of the pin number for the card being exposed is very common and the owner is also likely to drop the card somewhere. This is because each card active is a pay wave function that does not require a pin number. Each time a transaction is made; there will be an OTP for verification. When available, the card can be duplicated and the use of the card without the knowledge of the card owner (Surekha, 2015). Moreover, goodness can be seen with the existence of IR 4.0 which is interesting with the passage of time.

Deficiencies in the use of QR code are cyber-attacks or cyber theft users. Those skilled in technology are capable to hacking finances or information through viruses. This is evidenced in a study by Lu Jianfeng (2017), said about the information in this payment because to each QR code is often displayed in each store directly linked to the business account. Each time a payment is made there is no notification about the transactions. So the attack from hacker might be happen without our knowledge. Next, QR code can only be read by the machine and scanned by smartphones. If using a regular phone without technology it is not able to read the QR code (Shamal, 2014).

This study purposed is to identify the effectiveness of e-payment transactions using encrypted QR code. This survey was carried out to study the effects of access information, convenient and security in e-payment using QR code.

1.2 PROBLEM STATEMENT

The world is becoming more advanced with the improvement of existing technologies. With the advent of technology, it is capable of creating a digital economy that has changed human attitudes from cashless to cashless payments. Due to the rapidity of technology, there is a payment of business transactions that used to be barter converted to cash and then cards (Yap & Aun, 2019). This expansion has changed gradually, which then payments are focused on e-payments. In 2018, there was a survey conducted in the Annual Internet Users (IUS) showing an increasing trend from 76.9% (2016) to 87.4% (MCMC, 2018). Previous researchers stated that Southeast Asia is a region with a fast growing internet with a growing number of users and expect that in the future there will be more new users who will be online and use the internet in their daily lives.

In the beginning of 2020, almost all countries infected with the COVID-19 pandemic. According to CNBC news, the virus threat has further increased cashless payments. Which cashless payments can further increase productivity and cost efficiency involved in the digital economy where this element is critical this is because people are starting to buy or get goods and services through online. Online purchases of goods in Malaysia have increased simultaneously with the use of the e-payment system (Abdul Hamid and Cheng, 2020). To curb the spread of viruses that can kill humans, every government that rules the country has advised its citizens to buy goods through online which by using e-payment. This is because of maintaining distance and physical contact between human beings (Jie Fei, 2020). If using physical currency there will be a virus transfer from one person to another. This caused it to spread quickly and can kill everyone who affected. Therefore, it is highly recommended to make cashless payments to reduce the risk. But the awareness of Malaysians is not very high about e-payment (Goh, 2017).

6

Chern Kong (2018) stated carrying cash will limit the amount of cash spent. This is because not everyone dares to carry a large amount of cash while shopping due to theft or dropout factors that ultimately lead to losses. Therefore, e-payment can be used as a perfect medium to overcome this problem. Coupled with the existence of QR code in e-payment, it will have a positive impact on the security factor of finance because it is equipped with encrypted where it is more privacy and cannot be accessed by any person. This is because any data that not encrypted properly can be retrieved easier by hacker where they will reverse the transaction process to credit a different account (Sawsan and Basheer, 2016). Thus, the data will be encrypting and hiding in QR code and the code can only kept and use by one person all the time. This is because the security threats faced by consumers while using e-payment systems can cause them to refuse to use such systems (Nizam, 2019).

QR codes are not only used in individual contexts but the use also can be seen from a larger perspective. In business, it can speed up a transaction by simply scanning the QR code to perform any payment transaction. Tencent Holdings Ltd. in 2011 has released the apps called Wechat which it has gain more potential to the company's business. The successful of the apps is because it is equipped with QR code that help people on the apps to sell and buy without having problem with the system. WeChat offered their users to use QR code for exchanging contact information, paying for any products and/or services by its built-in wallet, or sending money through their application (Minter, 2017). Today, the AliPay of AliBaba Group and WeChatPay of Tencent are the two dominant payment applications for Chinese consumers and it can be said that QR code is really everywhere in China from shopping mall, convenient stores to street vendors and even buskers and beggars (Wang, 2017). Thus, it is no doubt about the use of e-payment using QR code and it is should be applied in every country including Malaysia.

1.3 RESEARCH QUESTION

This study focuses on the effectiveness of e-payment transactions using encrypted QR code with the following research questions:

   i.   Does access information influence the effectiveness of using QR code?

  ii.   Does convenient influence the effectiveness of using QR code?

 iii.   Does security influence the effectiveness of using QR code?

1.4 RESEARCH OBJECTIVE

The general objectives of the research are to analysis the effectiveness of e-payment transactions using encrypted Quick Response (QR) code.

The detailed objectives of the study are:

i.   To examine the effects of access information to the effectiveness of using QR code.

ii.   To investigate the effects of convenient to the effectiveness of using QR code.

iii. To identify the effects of security to the effectiveness of using QR code.

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1.5 SCOPE OF THE STUDY

In this study, the purpose is to find the effectiveness of e-payment using QR code among the student in Malaysia. Nowadays, internet become the most important thing in everyone life especially for student because they have to use internet most of the time. Internet can be accessed using laptops or smartphones which mostly used by university students. Besides, their busyness also causes them not to have time to go out to buy goods and choose to make purchases online. Thus, students are the appropriate population to be respondents for this research. The population of interest for this study will be student year 3 from Faculty of Entrepreneurship and Business (FKP) in University Malaysia Kelantan. The sampling will be collected by using a questionnaire. The student who has used e-payment using QR code can fill this questionnaire. The sample will be 269 students selected to answer the questionnaire. A questionnaire will be generated using Google form. This study will take 1 year to finish and done at University Malaysia Kelantan.

1.6 SIGNIFICANCE OF STUDY

This research is guided by the assumption of access information, convenient and security in the use of QR code in e-payment and its effect. Besides to provide the effectiveness of e-payment using QR code. This allows researcher to know and understand the effect of use QR code and how effectiveness the technology is. In addition, there are several types of thinking that shows the pros and cons of using QR code in e-payment.

The importance of doing this study will benefits all people and community. As we know, the ongoing COVID-19 outbreak has led to the growing use of the technology. To prevent COVID-19 infections from continuing to rise, people are instructed to stay home and only go out when necessary and are advised to buy goods online. To encourage the community to use e-payment, assistance has been provided by channeling directly to e-payment accounts such as Touch n' Go, Boost and so on. To ensure the safety of people when using e-payment, QR code has been equipped in this technology. This research will help them to understand the use of QR code in e-payment.

Therefore, to provides benefits in terms of convenience and time savings. For people who are always busy and always in pursuit of time, this research will benefit them. They will use this method as one of the methods that help them save time by just having to scan the QR code when making a transaction using e-payment. By providing better ideas for upgrading this facility, it will help many people by using e-payment an easier and safer way.

1.7 DEFINITION OF TERM

1.7.1 Effectiveness of e-payment using QR code

The definition of effectiveness is not a clear idea since the wording 'effective' exists, for example logical, efficient, productive, economic, economical or ideal (Czechowski, 1997). Transaction passwords, QR codes are effective and fast usage compared with conventional banking applications, such as credit or debit cards. QR codes for the e-payment system are used in this connection (Anbalagan, 2015). It ensures the protection of client data and prohibits misuse at the merchant's side of customer and banking data. The method mainly concerns the prevention of identity theft and the security of customer information (V, 2019).

1.7.2 Security

Security is defined as a set of systems and methods that validate information sources and assure information integrity and privacy (Teoh and Chong, 2013). User's impression of security demands response. The user's perception and intent is affected if they recognize the technology's security features. To address the security needs in technological use, such as safety policy, damage liability and security of technology usage. The security characteristics of technology are secure and accurate, including encryption, electronic certificate and user information protection (Piyawat, 2021). Users cause security problems, typically the problem of the credit or debit system chargebacks. It appears to be a strategic step towards expanding financing and increasing the sense of trust in the use of the QR coding system (Nam, 2013).

1.7.3 Convenient

The definition of convenient can be connected to consumer savings in time and effort while buying goods and services. Which consumers mean in the context of internet

buying is to some extent examined, but remains to be completely studied, however, in the western world and needs to be examined in emerging markets (Kaufman-Scarborough & Lindqvist, 2002; Sundstrom, 2007). Wireless payment technologies such as mobile and smart phones are designed to make payment more convenient, reduce the transaction fee and enhance electronic payment security (Hoofinagle, 2012). This payment mechanism has also facilitated the collection of vital information on your consumers and transactions by companies (Paunov and Vickery, 2006) due to the impressive rise and increased mobile penetration, the applicability of mobile payment systems was found rather broad in comparison with other telecommunications infrastructures devices.

1.7.4 Access Information

Access information can be described as the flexibility or ability to properly locate, retrieve and utilize the database or data. There are different research initiatives in accessing information for the purpose of simplifying the access and further processing massive and uncontrollable amounts of data and information by human users. Mobile technology can search, filter, access and govern the communication process (Narang, 2012). This QR code is used to describe this name by specifying the word "quick response" exactly by enabling quick access to information through mobile devices; e.g. website addresses, e-mails, telephone numbers, geographic co-ordinates (Albastroiu and Felea, 2015).

QR codes for labels or wrappings, flyers, brochures, catalogues, billboards, posters, newspaper advertisements, transport of tickets, events invitations, greetings cards, business cards, etc. may be used for to allow users to access product information, advertising offers or events, to receive coupons or to download information directly through the Internet. It also aims at finding information on individuals and organizations or seeking help in certain geographical locations (Shiang-Yen, Foo and Idrus, 2011).

1.8 ORGANIZATION OF THE PROPOSAL

This study is divided into three chapters. The study is based in part on the research field, followed by the following chapters:

i.   Chapter 1 (Introduction)

In the first chapter, QR code can be defined as a form of matrix code or two-dimensional barcode that can be read from numerous directions horizontally or vertically. Initially the QR codes were utilized in automobile component identification in manufacturing companies, but QR codes for a wider range of applications have been developed and used now, including commercial applications and mobile phone payment channels.

ii.   Chapter 2 (Literature Review)

In the second chapter, this explains literature of analysis. In this chapter, address the introduction, theory that we used on this research about Quick Response Code (QR Code) and related studies completed by previous researcher via this research, hypotheses statement, the conceptual framework, and lastly, the summary of this chapter.

iii.   Chapter 3 (Research Methodology)

In the study initiated and led by the research design, data collecting, demographic studies, sample sizes, sample methods, measures of variable sizing, data analysis procedure and the summary of this chapter, this section provides a full overview procedures.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

The digitalization world is in line with Malaysia's goal of achieving IR 4.0 where humans are depending on technology in performing their daily activities because QR code is a barcode that is able to store all information and enter into the website provided, there are various banking sectors providing a platform in terms of QR code usage. For an example Maybank, there is a QR code where we can scan each merchant to make payment. From here, we can facilitate the affairs and safety is also guaranteed. Japan was the first country to initiate the first step to make payments via QR code scan and followed the famous Europe country in 2000. But for Asians such as Malaysia, India, Singapore began to be known for human habits that wanted change (e.g., form cash to cashless) (Okazaki, 2012).

What makes the support for QR code payment there is due to attitude and interest towards the use of the application. Previous research findings have found that one's attitude and internal intentions are a source of clear measures to perform in preparation for changes that facilitate human tasks (Lian, 2014).

Increasingly advanced payments due to the innovations in the products before this. This is proven through the Diffusion of Innovation Theory is through different individual responses when new ideas arise to produce new products. To produce technology there are 4 categories to generate new ideas (Rogers, 1995).

1.   Innovators: The first to use innovation

2.   Early Use: Is the person who subsequently uses after innovator

3.   Early Majority: Using innovation at different levels of time

4.   Late Majority: They uses after the others do not use it

5.   Laggard: Was the last to use the innovation.

DIFFUSION OF INNOVATION MODEL
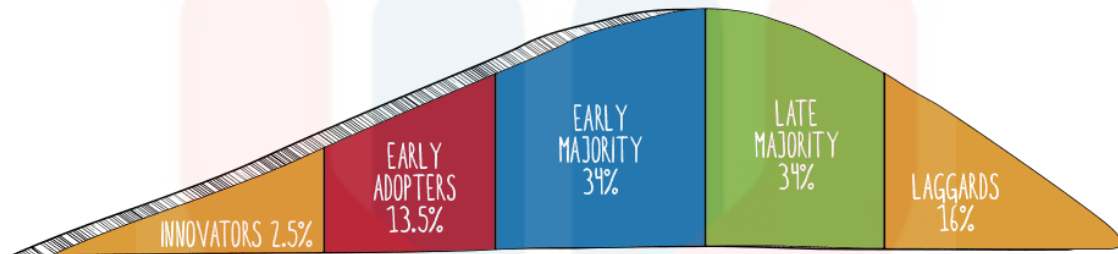
Figure 2.1: Diffusion of Innovation Model

2.2 UNDERPINNING THEORY

Cashless Union

This declaration is to raise awareness and inform the public, about QR code payments. There are benefits that can be used when using QR code, such as reducing the rate of COVID-19 infection and obtaining cash back. In the campaign efforts, the use of cash has been reduced since COVID-19 hit the whole country. The following reviewers (Aslinawati, 2018) voiced that the cashless campaign is still low and ineffective.

Technology Acceptance Model (TAM) and Planned Behavioral Theory (TPB)
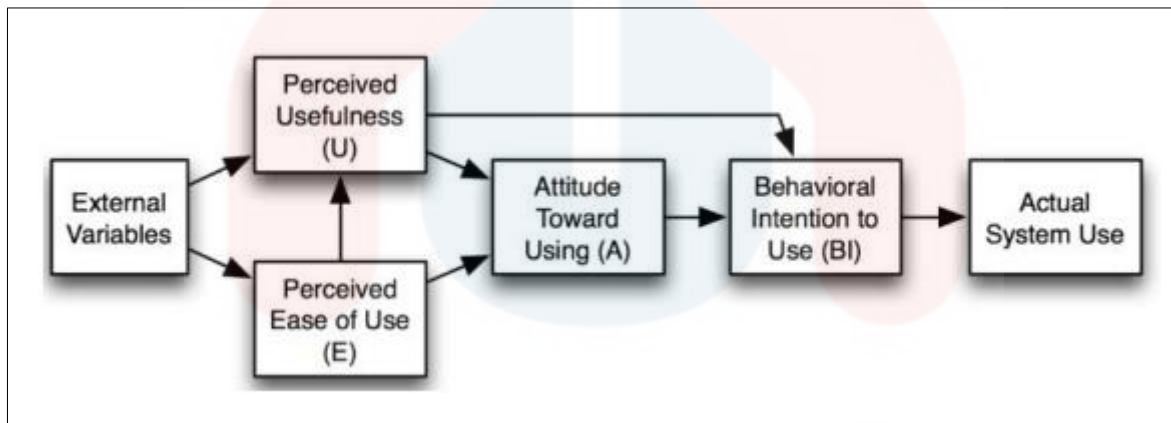
Figure 2.2: Process in the use of Technology Acceptance Model (TAM)

The reviewer sees the Technology Acceptance Model (TAM) as the first theory created by Davis (1989). Through the study by King and He (2006), TAM has a valid application and is widely used. The attitude of using the application does not get the impression of usability.

The ease of using the technology has a positive effect on the consumer. Among them is a fun experience in buying goods online. TAM can provide feedback on behavior and usage. Davis (1989) informed that the use in TAM is perceived usefulness as well as the

17

facility to measure user satisfaction is perceived ease of use. The difference between perceived usefulness and perceived ease of use can be seen that perceived ease of use describes a system that is not young or difficult to do while perceived usefulness trusts consumers in online shopping (Vijayasathy, 2004). Due to increasing technology mixing, this application is utilized using smartphones (Ervasti and Helaakoski, 2010).

2.3 EMPIRICAL STUDY

2.3.1 Effectiveness of e-payment using QR code

According to Humphrey, Kim & Vale (2001), electronic payment is a transaction that is handled through electronic methods involving the use of the internet and a computer network digital storage value system. Bills can be paid promptly from bank accounts and not be present at the bank by the account holder and without the need to write or check on mails.

According to Stephen Kwadwo Antwi (2015), electronic payment is an online financial exchange between seller and buyer. These exchanges are usually in the form of digital financial instruments backed by banks, intermediaries or legal providers (such as encrypted credit card information, electronic checks, digital currency). In contrast to payment by cheque and cash, e-payment may be defined as payment by direct credit, electronic transfer of credit card information or any other electronic methods.

QR code is a special barcode matrix that can be read by a high resolution camera by specialist QR barcodes or smartphones. The QR code is made up of black modules set in a white background in a square design. Surekha (2015), stated that text, alphanumeric numbers, URLs or other dates are the information normally encoded in the QR code. Transaction passwords are efficient and fast to use in compared to other banking applications like credit or debit cards. The payment using QR code is a mobile payment for the goods, services or charges with a mobile device based on the system and technology of QR codes (De Luna, 2019).

E-payment is intended to support the elimination or reduction of certain problems associated with the settlement and payment process by individual customers and companies, as well as the banks themselves. Customers can pay their charges without really having to

19

move to the Bank (Wahab, 2012). People can also check the information about their account and even transfer money to other accounts comfortably at home.

Globalization nowadays is the result of new technical endeavors. The horizon of payment systems has evolved from technological progress towards an e-world (Oginni, 2013). Modern technology has, in particular, transformed conventional payment systems into more efficient and efficient, without 'cash and carry' syndrome.

According to Oginni, (2013), e-payments are defined as all payment services using the IC, including integrated circuit (IC) cards, encryption and telecommunications technology. In the study, however, e-payment refers to a multiple channel of delivery that permits for electronic currency exchange with no physical interaction between the parties concerned. All electronic transactions and e-check payment are included. E-payment provides a means of electronically transacting and fulfilling financial obligations without affecting the cash of a non-cash company.

According to Li-Ya Yan, 2021, in Malaysia, the Government has taken advantage of m-payment and has tried to speed up its promotion (Lee and Khaw, 2018) by granting a single RM30 incentive for qualified Madagascans to utilize e-payment in 2020 (Zahiid, 2019).

According to Chanarat Paraaungkul (2017) the other form of contact less payment that more effectiveness in new market likes China and India could more appraise to consider rolling out. For example of the use of QR Code technology can make point of sale mobile payment convenient.

According to Jaesik Lee (2011), in fact, this payment method with a mobile phone has recently come out the compared PCs that require such numbers as encryption and electronic meanings for development and rapid prevalence of smartphones can be sufficiently utilized in particular for the efficiency of mobile phones.

2.3.2 Access Information

By using QR codes, user can easily access any information they want without having problem with the system. According to Chen (2008), the approaches of QR codes is it providing different ID for every product, so that customers can access product relevant information through machines at the Kiosk or using internet via electronic devices. Customer can use their electronic devices such as smartphone, laptop or tablets by scanning the printed QR codes prepared by seller. This will help users especially buyer to access information in reliable manner.

According to study by Eneizan and Wahab (2016), motivating customers to access QR codes to find relevant information can influence them to purchase green products. The availability of information about a product has a significant relationship in increasing customer purchases. The results obtained through a study conducted by him found that the information in QR code have significant impact which customers can learn about the product in detail.

Contrary to deposited payments, self-service payments can increase clients' access to payment information (Baronas and Louis, 1988), reduce payment uncertainties and the amount paid (Collier and Barnes, 2015), and enhance their influence on the payment process and outcome, and give them more control.

According to Albastroiu and Felea (2015) the information is being decoded using a smartphone with an inbuilt camera and software for the interpretation of code. The term used to name that code is precisely explained by its allowance for quick access by means of mobile devices to information (e.g. websites, e-mail addresses, telephone numbers, geographic co-ordinates etc.). Narang (2012) explained that mobile technologies have the capacity to look up, filter and access information and make it easier to govern the communication process by customers.

Providing QR codes for every product can help companies to boost their sales and thus can growth their company. This is because customers are preferred to use QR codes to find more information for a high involvement product (Narang, 2012). The use of QR codes is safe for either the user or the seller because it is equipped with a code that cannot be accessed by others. The encoding region contains the data and QR Code formatting information, version information and the data, and error correction keys Kulkarni and Malagi, (2016). Therefore, applying and using QR codes is very suggested due to its benefit for both parties either seller or buyer.

According to Meydanoğlu (2018), QR codes can be access any information at anytime and anywhere people want. This will help customer to reduce wasting time by finding and comparing product at store. Instead they can access the information about the product directly using the QR codes displayed in the shop's website or at the product.

From the study conducted by Albastroiu and Felea (2015) the result shows that the consumers scanning QR codes to access information about products and services they want to buy or get, besides, they also use it when they want to buy products, get contact information about the seller or manufacturer, get discount offered and so on. This shows that QR codes not only can give information about products, but there is more information they can get by using QR codes. QR codes that applied on the packaging of products are considered effective in providing information about the brand and given customer ability to reach the product they want to buy (Atkinson, 2013).

2.3.3 Convenient

Convenience (or compatibility) is explained as the coherence of progression with experience, values and consumption needs. The flexibility of these systems to readily incorporate them into the daily life of consumers is a major component of the compatibility of mobile payment methods. According to Mallat (2007), the study showed that mobile

22

payment methods are best suited for smaller payments to buy movie, mobile game and contents online.

The expansion of e-commerce and information networking networks has enabled the conception of technology products and services (Ngo and Nguyen, 2021) to satisfy the needs of consumers to provide convenience. One of the applications for mobile banking is payment by scanning a QR code. QR technology decreases the risk of card payment, makes it much safer than cash payment and considerably more convenient than other payments.

In addition, studies conducted by Okazaki and Hirose (2012) confirm that easy-to-use is an influencing element in the desire to adopt new technologies and services. The easier it is for clients to accept the service, the higher their perceived usability with regard to QR code. According to Rahaf Alhafi (2019), the proposed system will be affordable, simple to operate and requires no specific training. The consumer can scan the QR code of the item to be purchased using his phone camera feature and money can be transferred. This paper presented alternate way that employs e-payment application and QR codes for transactions.

Sonwane (2014) says it is much easier and more comfortable that the user doesn't have to carry any further equipment (as she would always carry the phone). The smart phone is also not too expensive now, thus this application is very vital to make online banking security apps easy and secure.

In addition, an electronic and mobile context reacts differently to consumers. In terms of battery life and screen size, for example, the perceived easiness of mobile users is different than that of desktop computers (Tan, 2014).

According to Chongprasitipol (2010), digital technology is used to enhance service efficiency by innovation and creativity. It reduces operational costs, makes it convenient, quick, and safe and generates chances for companies and people to make better use of electronic payment services.

According to Somkid Yakean (2020) the payment system plays a critical role in supporting the public sector, private sectors, and financial institutions to execute financial transactions more conveniently, quickly, safely, and efficiently. Besides, the financial providers always offer unique functions that allow customers ease, flexibility, creative design and an effective payment procedure that affect customer choice for the revolutionary QR code payout system (Vonguai, 2020)

2.3.4 Security

According to (World Health Organization, (WHO) 2020), one of the ways of transmitting COVID-19 is spreading between humans directly, indirectly (through contaminated objects or surfaces). To avoid contact with droplets, it is important to keep your distance from other people, wash your hands frequently, and wear a mask. Including the way we do transactions, using non-cash payment methods automatically reduces our physical contact when making payment transactions. Because physically the currency which is the means of payment is held and used to make payments, it moves from one hand to the other so that the spread of the virus is very vulnerable to occur. It can make consumer safe from virus COVID-19.

According to Ngo and Nguyen (2021), payment by scanning a QR code not only decreases dangers when paying by card but is also more convenient than cash payments and more secure than other modes of payment, in particular in the context of the present severe and complicated COVID-19 epidemic. Thus, one of the applications for mobile banking is payment by scanning a QR code. QR technology decreases and is safer than other types of payment the risk of card payments.

Liébana-Cabanillas (2015) also found new characteristics that affect the acceptability of the mobile QR payment system for compatibility, security, personal innovation and mobility in addition to fundamental features of the technology adoption (TAM) model.

According to Oginni (2013), the ease of trading in economic substances and safer access to funds, among other things, has brought e-payment systems more gloriously than the cash-based system.

Sonwane (2014) report that developing a security system that uses QR security code and provides two-way authentications. There are 4 main QR code creation modules, online authentication, offline authentication system and QR code scanning in our security system. The camera equipped with a mobile phone is another crucial aspect of the system. Mobile phones are used here for QR code scanning. Our security solution therefore guarantees safety when mobile telephones are online or offline. With the QR code and encryption method, the security in our system is more powerful.

Security and reliance on service providers of mobile payment systems. The absence of security and consumer trust in service providers has been seen according to Siau, Sheng and Davis (2004) as an important hindrance to the implementation of electronic commerce transactions. As important requirements for secure online payments, consumers need secrecy, authentication, date integrity and non-repudiation.

Risk and safety assessment is a major concern in electronic payment systems (Ashrafi, 2008). To secure the safety of customer transactions and build trust thereby demonstrating their attitude to new forms of payments, new security methods for electronic payments should be implemented. Risk is just one of the obstacles to implementing a new method of payment (Lee, 2009). Consequently, perceived QR Code Payment Systems Security must be monitored for the success of QR Code Payment System applicability (Schierz, 2010).

Odior (2012) also investigate the problems and benefits of cashless banking in Nigeria and found that the change to cashless Nigeria appears to be positive, even though the security and cost savings management of Nigeria result from its application are highly concerned.

According to Surekha (2015), an additional security level is added in the generation of QR code. In the merchant side, updated QR code or image reaches payment gateway and leads for fund transfer. When the transaction process is over, the information whether the payment is successful or failure is sent to the sales server which redirects the information to the customer.

Zhang (2017) stated that China has a unique environment for payment by QR code. Apart from that, the platform in China has made a very significant contribution to the popularity of QR code payments and also handles QR code payment security issues very well. Thus, it encourages people in the country to choose to use QR codes in making payments.

2.4 HYPOTHESES OF THE STUDY

The hypotheses of the research are made based on factors such as access information, convenient and security. Based on the discussion above, the following are hypotheses to be tested:

H1: There is a positive relationship between access information and the effectiveness of e-payment using QR code.

H2: There is a positive relationship between convenient and the effectiveness of e-payment using QR code.

H3: There is a positive relationship between security and the effectiveness of e-payment using QR code.

2.5 CONCEPTUAL FRAMEWORK
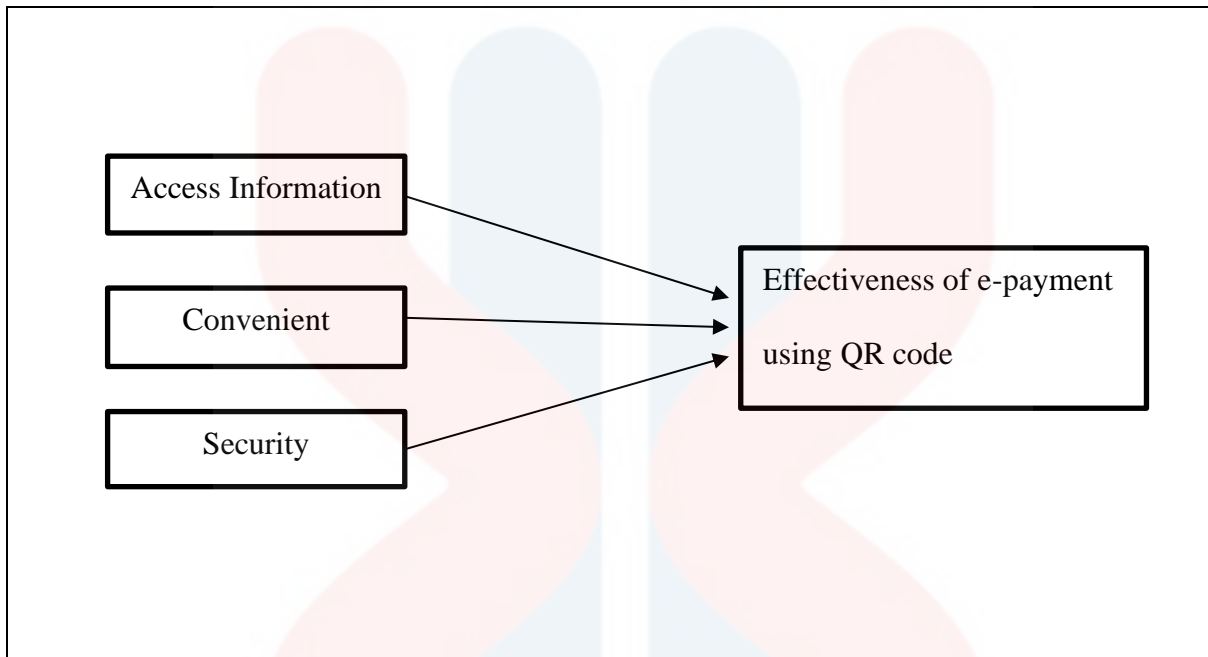
Figure 2.3: Conceptual Framework Model

The figure 2.5 show the conceptual framework is the essential basis of this research project. Based on the TAM theory model, the figure above is to study the relationship between dependent variables and independent variables for the conceptual framework. The dependent variable is the effectiveness of e-payment transactions using encrypted QR code and there are three independent variables (IV) that will be tested in this study which are access information, convenient and security.

2.6 SUMMARY

Chapter 2 had discussed the independent variables of this research which are access information, convenient and security and its relationship on the effect of dependent variable which is effectiveness of e-payment using QR code. Every independent and dependent variables were defined to clearly understand the topic of investigation for this research. In addition, the hypotheses and framework for this research also stated in this chapter to show the relationship of independent variables and dependent variable.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter is about research methodology. This chapter will explicitly explain the research methods used to complete the study. The researcher will clarify how the data and knowledge needed to answer research goals and questions have been gathered, interpreted, and evaluated. In the design of the research methodology, the research approach applies to a large extent that involves the population target and the complexity of retrieving it. The significance of results that will be obtained from the research is one of the aspects that will affect the study process. The major parts of the research methodology are the research method, method of data collection, sampling plan and analysis plan. This chapter also includes the type of research, how the data obtained or chosen are analyzed, the materials used in the research, and the rationale for using these methods. Therefore, this chapter will clarify the methodology followed by this analysis and will explain the whole process involved in the conduct of this study.

3.2 RESEARCH DESIGN

The design of the analysis for this study uses a quantitative method. In this analysis, a cross-sectional descriptive research design will be used to examine the effectiveness of e-payment using QR codes. Furthermore, this study uses a cross-sectional questionnaire using a quantitative method, suggesting that the data from this study was collected at a single point in time (Bland, 2001). The quantitative study is a structured analytical and systematic technique that collects knowledge about any type of data using numerical data (Burns and Grove, 2005). Other researchers describe this research design as a way of explaining phenomena by collecting numerical data analyze using methods (in particular statistics) based on mathematics (Aliaga and Gunderson, 2000).

To recognize and evaluate relationships and analyze the cause and effect between variables, the researcher will use a quantitative research design. In other words, the research design can be described as a global plan indicating how the core research questions are addressed by all important aspects of the research sample, measures and analyses (Odukoya & Oladundoye, 2007). In this study design also enables the researcher to gather data on a graph conduct a large-scale study and provide much more detail in terms of context and statistics (Aliaga and Gunderson, 2000).

The cross-sectional descriptive design method that will be used in this study therefore will equal the aim of the research based on the explanation of a descriptive research method. In order to provide a broad overview of what the researcher found to be the greatest track in this study, the introductory cross-sectional study performed a comparative review of the social research writing work. This is generally targeted at all levels of those participating in the writing of social research. However, it is explicitly designed for year 3 student from Faculty of Entrepreneurship and Business (FKP) in University Malaysia Kelantan who make

31

e-payment using QR codes. The aim is to come up with findings that may be used to make an assertion on the effectiveness of e-payment using QR codes. Using a descriptive study design will therefore ensure an in-depth description of the situation in the study.

3.3 DATA COLLECTION METHODS

The data collection method was held with a sample from a wide population which is year 3 student from Faculty of Entrepreneurship and Business (FKP) in University Malaysia Kelantan. The procedure of practicing convenient sampling was applied to understand some highlighted criteria or opinions from a random population sample. Using convenience samplings through an online survey on social media lessen the bias if there are standard question on the target respondents. The privacy of respondents also remains private with the application of significant data security and privacy regulations. Questionnaires survey can be customization where the researchers can apply features of the design, distribution, and analyze the respondents' data response. It is considered quantitative research.

Quantitative research may apply two different category data which are primary and secondary. This research data collection method considered primary data collection because we directly collected the data from the respondents. The questionnaires will be distributed among students who are potentially make e-payment using QR code. The confidentiality of the respondents will be secured and no private information will be bridged during the data collection procedure.

3.4 STUDY POPULATION

According to Sungiono (2010), before the sample was collected, the researcher had to determine the population. Population also refers to the aggregate of overall benefits from all items, subjects or members that fit a set of specifications (Polit and Hungler, 1999). In a study, Reid identified the population as all units with certain characteristics that are of interest to the researcher's study. The population can be interpreted from the definition as the intended community or group of people for this study who are interested or chosen by the researcher.

The population analysis consisted of year 3 student in Faculty of Entrepreneurship and Business (FKP) in University Malaysia Kelantan who is 18 years old and above. A total of 893 year 3 student in Faculty of Entrepreneurship and Business (FKP) in University Malaysia Kelantan was recorded in 2021. The populations have been collected among University Malaysia Kelantan only due to pandemic COVID-19 happen nowadays.

The focus of this study is to examine effectiveness of e-payment using QR codes. Before this student are preferred to use cash to make any payment. According to the pandemic COVID-19, there are many students in IPT was using e-payment with QR code and the reasons is which are closely related to our dependent variables which are to get an effectiveness of e-payment using QR codes.

Moreover, this number of respondents is considered appropriate for the study population because, as stated in chapter one, they constitute the effectiveness of e-payment using QR codes whether for certain reasons or other factors. Most of them already have reasons why they are making e-payment using QR code. Therefore, they are in the best position to complete the survey with the data necessary to address this study's research query.

3.5 SAMPLE SIZE

According to Burns and Grove (2001), note that there are no hard or quick sample size laws, but there should be at least 30 participants in a sample. Quantitative research designs require large samples to improve representativeness and minimize sampling errors (Polit and Beck, 2006). From table Krejcie and morgan (1970), after referring total of population then it will be 269 respondents taken from year 3 student from Faculty of Entrepreneurship and Business (FKP) in University Malaysia Kelantan needed to answer the survey because of the restricted scope of this report. The respondents will be chosen from the population to determine the effect of access information, convenient and security to the effectiveness of e-payment using QR codes among student in University Malaysia Kelantan.

Table 3.1: Krejcie and Morgan's Determining Sample Size Table

TABLE FOR DETERMINING SAMPLE SIZE FROM A GIVEN POPULATION

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: "N" is population size
"S" is sample size.

Source: Krejcie, R. V., & Morgan, D.W. (1970). Determining sample size for research activities. Educational and Psychological Measurement, 30, 607-610

3.6 SAMPLING TECHNIQUES

The non-probability sampling approach will be used in this study. A study of 269 students of year 3 from Faculty of Entrepreneurship and Business (FKP) in University Malaysia Kelantan is target for convenience. A quota-based on the estimated percentage representation of the several ethnic groups in Malaysia is use to structure the study. The respondents were asked to complete a questionnaire designed to evoke their style of decision-making towards the effectiveness of e-payment using QR codes. A sample size of the respondents from different races in Malaysia namely Malay, Chinese, Indian and other was targeted.

The questionnaire is distributing to individuals through Google form. The subjects were Malaysians aged 18 and above. These subjects are considering suitable for the study as they are adults, equipped with consumer related knowledge. The questionnaire will be shared through social media which is WhatsApp and Facebook to prospective sample.

The method of data collection took approximately two weeks. The sample distribution of the three major breeds was regulated to the greatest extent possible to ensure that the three main breeds were reflected on the basis of the ratio of year 3 in the population of University Malaysia Kelantan which during COVID-19 was difficult to reach in person.

3.7 RESEARCH INSTRUMENT DEVELOPMENT

The research instrument is a reliable tool to collect and analyze the data from the target respondents and was used for the topic of interest in the research. It contains the common survey for social and behavioral information that have research questions and answers from the sample of the population. From the responses given, it can be used for statistical data which are extracted for the research purpose. Research instruments that we used for the data collection is an online questionnaire method to collect the data.

A questionnaire is a data gathering tool which each participant in a research study completes. Researchers utilized surveys to collect information about research participants' ideas, feelings, attitudes, views, values, perceptions, personalities, and behavioral intentions (Gephart J, 1988). In other words, the researcher acquires different kinds of characteristics using questionnaires distribution. It is survey research where questionnaires are used that might have standardized data which is different from qualitative data. Questionnaires commonly have a mix of open-ended questions and close-ended questions. Open-ended questions giving respondent the choice to elaborate their opinion.

There are parts divided for every section. The first parts of data collection represent demographics such as gender, age, race, marital status, education level, and how often they make payment went using QR codes before this. Then the other parts are the answers for the research question from strongly agree to strongly disagree. The respondents are welcomed to choose the option based on their preferences. Some sections linked with the safety, convenient and security which are acquired to collect the data on how it affects the effectiveness of e-payment using QR code.

Next, using the Likert scale or Pearson Correlation defines how the respondents agree to strongly disagree. The result would tell the consequences of the respondents' response on

the effectiveness of e-payment using QR code. The scale also includes the effect to effectiveness of e-payment using QR code. The scale shows the option from strongly disagree to strongly agree to carry out the feedback from the respondents. This method acquired random sampling data which gathered different people from different segmentations that able to reach a wide view from year 3 student in Faculty of Entrepreneurship and Business (FKP) in University Malaysia Kelantan. From there, there will be a lot of responses that indicate different factors or reasons why student make e-payment using QR code. It also may show the knowledge or beliefs student have to make e-payment using QR code.

The dependent variable for this research is the effectiveness of e-payment affects the participation student using QR code. The term of effectiveness define as a measure of the match between the goals set and the achievements achieved. Meanwhile, the independent variables for this research are access information, convenient and security which driven the effectiveness of e-payment using QR code. The independent variables define how the effect of student in University Malaysia Kelantan in make e-payment using QR code and what influence them. In evaluating the data collection on what effectiveness e-payment, we can predict the demand and the consequences of student behavior towards their destinations.

Table 3.2: Research Instruments

Constructs	Number of Items	Sources
Access Information	1. Readability is so fast and continue to enter the website by simply scanning the QR code using a smartphone	Surekha, 2015
	2. QR code is easiest in retrieving information	
	3. Information sent online will be encrypted. Where the code is used in banking details that are not associated with a debit or credit card.	

Convenient	1. The ecommerce and information networks have been developed and technology products and services have been designed to fulfill the needs of consumers in order to deliver convenience. 2. The easier it is for clients to accept the service, the more the user may easily utilized QR code service.	Ngo, 2021
Security	1. Autonomous payment is the journey in which the clients scans a dealer's QR code with his smartphone, insert the payment amount and his password and transfers his money to a dealer using a QR code. 2. Including the way we do transactions, using non-cash payment methods automatically reduces our physical contact when making payment transactions. 3. Because physically the currency which is the means of payment is held and used to make payments, it moves from one hand to the other so that the spread of the virus is very vulnerable to occur. It can make consumer safe from virus COVID-19.	Rong Liu, 2021 Ni Putu Ani Karniawati, 2021
Effectiveness	1. Payment experience, one of the most important sorts of payment results, is due to	Rong Liu, 2021

| | customer-commercial interaction during the payment period. | |
| | 2. Psychological answers are activated and payment experiences occur when clients connect with dealers. Customers could gain cognitive and emotional experience during the payment procedure. Community Perception of Using QR code Payment in era New Normal. | |

3.8 MEASUREMENT OF THE VARIABLES

A measurement variable is an unidentified characteristic that can take one or more values and measures a specific entity. It's frequently employed in scientific studies. Unlike in mathematics, in statistics, measurement variables can assume not only quantitative but also qualitative values. There are four categories of measurement variables: nominal, ordinal, interval, and ratio variables.

A nominal scale is one that allows the researcher to assigned subjects to certain categories or groups (Sekaran, 2016). In this research, researchers choose nominal scale as the measurement to the variable that can be group. For this research the first variable that they use is gender can group to male and female and course that students take can be group to SAB, SAK, SAR, SAE, and SAL.

Second, researchers also use the ordinal scale to measure variable. In the ordinal scale, the variables are not only categorized to indicate difference between the different categories, they also meaningfully rank the categories. With any variable to be arranged according to a certain preference, the ordinary scale is utilized (Sekaran, 2016). They are based on nominal scales, in which objects are assigned numbers to signify a rank or ranking on an attribute. Researcher use ordinal variable with numeric value for example, 1- very satisfied, 2- satisfied, 3- indifferent, 4-dissatisfied and 5- very dissatisfied or 1- strongly agree, 2- agree, 3- nature, 4- disagree, and 5- strongly disagree. Researcher use 5 Likert Scale to measure what level that respondent agrees or disagree with the questionnaires and get their opinion.

Lastly, researchers choose ratio scale the measure the variable. The ration scale addresses the drawback from the arbitrary point of origin of the interval scale because it has an absolute zero point, which is a valid measuring point (Sekaran, 2016). The four scales are

most powerful as they have a single, non-arbitrary origin and encapsulate all the other three scale characteristics. The calibrated source is an absolute (rather than arbitrary) zero, so that we can determine the answer ratio for the questioner. It allows variables to be added, interacted with, multiplied, and divided.
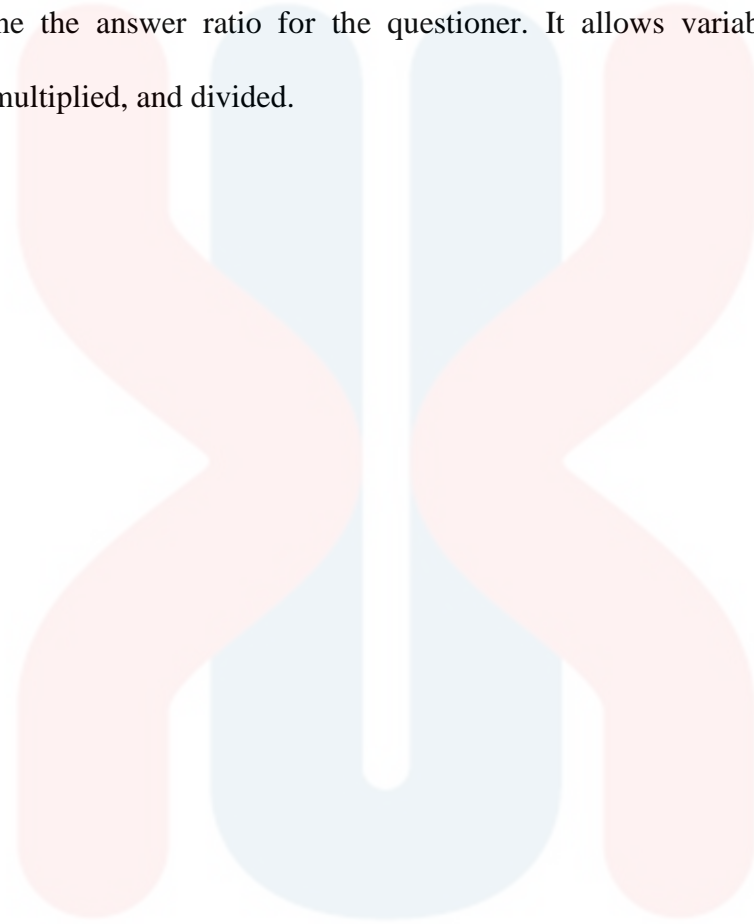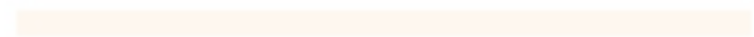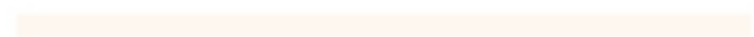
3.9 PROCEDURE FOR DATA ANALYSIS

This chapter discusses the analysis and outline of the consequences received from the study conducted. The data collected from the study were analyzed and by the objectives of the study in Research Methodology as outlined in Chapter 1. Data analysts were completed primarily based on an investigation by tabulation analysis methods that were set up as discussed in Chapter 2. The project analysis was all the results of the study conducted via questionnaire technique and after that, the Statistic Package for Social Science (SPSS) method will use to observe.

The data analysis procedure should be done carefully. The process obtaining accurate data starts by asking questionnaires, analyzing questionnaires, and finally collecting data. Our questionnaire was conducted quantitatively (questionnaire) to study the effectiveness of electronic payment (e-payment) transactions using encrypted QR code. For this questionnaire, we want to study the effectiveness on 269 year 3 students from Faculty of Entrepreneurship and Business (FKP) in University Malaysia Kelantan. This questionnaire question is constructed based on the dependent variables (The effectiveness of e-payment transactions using encrypted QR code) and three independent variables (IV). The questionnaire is distributed via the Google Form link. Then, students need to fulfill all the questions in the form.

After getting 269 respondents, we analyzed their data through the pie chart Google form. The study will continue by analyzing the data and providing scientific answers on whether the data can support the hypotheses or not.

3.10 SUMMARY

The methodology for carrying research question is important to collect the data for research purposes. There are qualitative and quantitative methods which have their specialty and ways to use them when carried out the research. The quantitative research data collection procedure can help in reducing cost and time while gathering random responses from the population. The exact data collection method can help to decrease the time and increase efficiency. Using convenience sampling can help in searching random response from different segmentation of respondents and a wide perspective on how or what influence student in University Malaysia Kelantan in using QR code and its effect. The research question also helps to define the problem statement that arises in the research. From the research question and the data collection gathered, there will be a conclusion on how Malaysian react or are influenced to make e-payment using QR code.

CHAPTER 4: DATA ANALYSIS AND FINDINGS

4.1 INTRODUCTION

In this chapter, the data that has been collected from the questionnaires will be discussed to generate results and findings. The data obtained has been evaluated by a software program using Statistical Package for the Social Science (SPSS). The data analysis was used in order to test the questions in the questionnaire that were given to the respondents for this research. The data analysis results were explained with demographic characteristics test, reliability analysis, descriptive statistics, Spearman correlation analysis and normality analysis. The questionnaire was distributed to the year three student from Faculty of Business and Entrepreneurship in University Malaysia Kelantan. The total respondent for this research is 269 respondents and through the Google Form this questionnaire was distributed to the respondents.

4.2 PRELIMINARY ANALYSIS

The objectives of preliminary data analysis are to edit the data to prepare it for futher analysis, describe the key features of the data and summarize the results. This chapter deals with quantitative approaches to achieving these objectives. Topics covered include scales of measurement, types of data, graphical methods of analysis including histograms, probability plots and other graphical representations of data and basic descriptive statistics: mean, median, fractals, standard deviation and so forth. The chapter concludes with a discussion of the use of probability plots in preliminary model selection.

This research study was conducted at University Malaysia Kelantan. This research were focused on third year student from Faculty of Entrepreneurship and Business. About 269 samples can be accepted to be extracted from the student of University Malaysia Kelantan population under Faculty of Entrepreneurship and Business. Questionnaire through Google form related to effectiveness of e-payment using the QR code were distributed among students from Faculty of Entrepreneurship and Business. Although, 274 responses via Google form were found to consist of respondent aged 18 to 26 years and above.

Prior to multivariate analysis, data were analyzed using SPSS 26.0 data entry accuracy, missing values and violation of multivariate statistical assumptions. All 274 questionnaires were valid for data analysis.

4.3 RELIABILITY TEST

The reliability test rated through Cronbach's alpha. This test is the most common measure of internal consistency. Researcher used the multiple Likert questions in a questionnaire that form a scale and use reliability test to determine if the scale is reliable.

Table 4.1: Table of Cronbach's Alpha

Cronbach's Alpha Coefficient	Strength of Association
< 0.60	Poor
0.60 to < 0.70	Moderate
0.70 to < 0.80	Good
0.80 to < 0.90	Very Good
> 0.90	Excellent

Table 4.1 shows value of Cronbach's Alpha Coefficient that can accepted and the strength of association.

4.3.1 Effectiveness Of E-Payment Using Qr Code

Table 4.2: Reliability Statistic for Effectiveness of E-Payment Using QR Code

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.852	.856	10

Table 4.3: Scale Statistics for Effectiveness of E-Payment Using QR Code

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
40.20	37.024	6.085	10

The table 4.2 shows that the result of reliability statistics for dependent variable is effectiveness of e-payment using QR code were acceptable. It also can use for measure all the independent variable. It is because the Cronbach's alpha is 0.852. Refer table 4.3 the strength of association is very good. The table 4.12 shows Cronbach's alpha based on standardized items are 0.856 which is very good. Moreover, the mean of scale statistics for effectiveness of e-payment using QR code is 40.20, the variance is 37.024, std. the deviation was 6.085 for 10 items (10 questions).

4.3.2 Information

Table 4.4: Reliability Statistic For Access Information

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.913	.914	10

Table 4.5: Scale Statistics For Access Information

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
41.03	42.600	6.527	10

The table 4.4 shows that the result of reliability statistics for access information were acceptable. This is the first independent variable in this research. In this table shows that Cronbach's alpha is 0.913 that mean the strength of association is excellent. The table 4.15 shows cronbach's alpha based on standardized items are 0.914 which is excellent. Moreover, the mean of scale statistics for access information is 41.03, the variance is 42.600, std. the deviation was 6.527 for 10 items (10 questions).

4.3.3 Convenient

Table 4.6: Reliability Statistic For Convenient

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.912	.912	10

Table 4.7: Scale Statistics For Convenient

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
41.94	38.340	6.192	10

The table 4.6 shows that the result of reliability statistics for convenient were acceptable. This is the second independent variable in this research. In this table shows that Cronbach's alpha is 0.912 that mean the strength of association is excellent. Table 4.7 shows Cronbach's alpha based on standardized items are 0.912 which is excellent. Moreover, the mean of scale statistics for convenient is 41.94, the variance is 38.340, std. the deviation was 6.192 for 10 items (10 questions).

4.3.4 Security

Table 4.8: Reliability Statistic For Security

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.911	.911	10

Table 4.9: Scale Statistics For Security

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
42.42	37.707	6.141	10

The table 4.8 shows that the result of reliability statistics for security were also acceptable. This is the last independent variable in this research. In this table shows that Cronbach's alpha is 0.911 that mean the strength of association is excellent. Table 4.9 shows cronbach's alpha based on standardized items are 0.911 which is excellent. Moreover, the mean of scale statistics for convenient is 42.42, the variance is37.707, std. the deviation was 6.141 for 10 items (10 questions).

4.4 PILOT TEST

For the pilot test, 30 questionnaires were distributed randomly to year three students from Faculty of Entrepreneurship and Business (FKP). The questionnaire use for pilot-tested on student year three from FKP. According to DeMaio (2004), pre-testing of the instrument is an important step because the result of the pre-testing will indicate whether the survey is successful in meeting the objectives of the study concerned

Hair, Anderson, Tatham and Black (1998) assert that measures of reliability that ranges from .60 to .70 deemed the lower limit of acceptability. Nunnally (1979) recommended >.70 as the acceptability level. Based on pilot study, the data were analysed and the coefficient values were as follows:

Table 4.10: The Instruments' reliability.

Variables	Number of items	Cranbach's alpa
Effectiveness Of E-Payment Using Qr Code	10	0.801
Information	10	0.918
Convenient	10	0.915
Security	10	0.940
Total	40	0.964

Table 4.10 shows that pilot test for four variable is acceptability because result shows that cranbach's alpa is more than 0.70. This variable can use for this research. Variables first is the effectiveness of e-payment using QR code for cranbac's alpa is 0.801. Second is information shows that cranbach's alpa is 0.918. Third is convenient result for cranbach's alpa is 0.915. Lastly for security the result cranbach's alpa is 0.940. Pilot tests were also use to conducted for the 40 questions provided. Cranbach's alpa result shows 0.964 it means all acceptability variables.

51

4.5 DEMOGRAPHIC CHARACTERISTICS TEST

The basic analysis of this study included the frequencies analysis. The data was distributed to the year three student from Faculty of Entrepreneurship and Business at University Malaysia Kelantan. The total of questionnaire that we distributed were 269 respondents and distributed through Google Form. The data from section A of this questionnaire and from different demographic variables of respondents such as gender, age, race, status, course, previous study, ever to try QR code for payment and frequency of using e-payment.

4.5.1 Respondent Based On Gender

Table 4.11: Gender of Respondents

Gender of Respondent					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female / Perempuan	202	75.1	75.1	75.1
	Male / Lelaki	67	24.9	24.9	100.0
	Total	269	100.0	100.0	
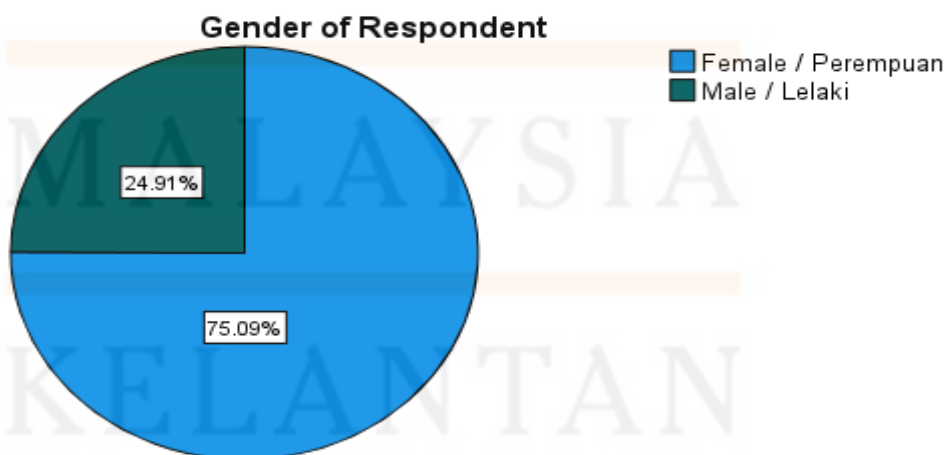
Figure 4.1: Percentage of Gender

52

Table 4.11 and figure 4.1 shows the gender of the respondents that involved in this research. We can see that majority of respondent is female with percentage of gender 75.09% while the percentage for male respondents is 24.91%. only. The number of respondents for female is 202 respondents and the number of males is 67 respondents from the total number respondent which is 269 respondents.

4.5.2 Respondent Based On Age

Table 4.12: Age of Respondents

Age of Respondent					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-20 years old / tahun	20	7.4	7.4	7.4
	21-23 years old / tahun	209	77.7	77.7	85.1
	24-25 years old / tahun	26	9.7	9.7	94.8
	26 years old and above / tahun dan ke atas	14	5.2	5.2	100.0
	Total	269	100.0	100.0	
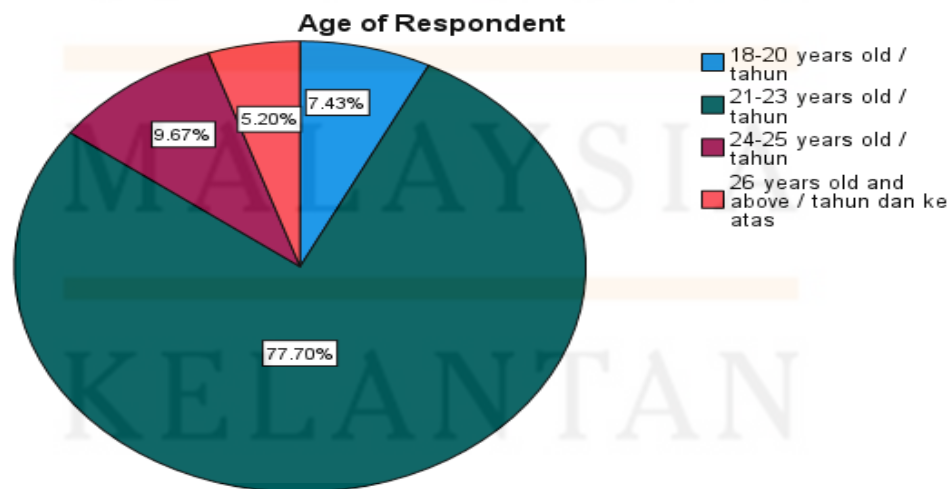
Figure 4.2: Percentage of Age

Table 4.12 and figure 4.2 shows the categories age range of 269 respondents. We can see that 7.43% or 20 respondents are come from the age 18-20 years old. Then, 77.7% or 209 respondents are from age 21-23 years old and 9.67% or 26 respondents are from age 24-25 years old. In addition, respondents from age 26 years old above are the least that answer the questionnaire which only 5.20% or 14 respondents from the total number of respondents which is 269 respondents.

4.5.3 Respondent Based On Race

Table 4.13: Race of Respondents

Race of Respondent					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Chinese / Cina	24	8.9	8.9	8.9
	Indian / India	12	4.5	4.5	13.4
	Malay / Melayu	217	80.7	80.7	94.1
	Other / Lain-lain	16	5.9	5.9	100.0
	Total	269	100.0	100.0	
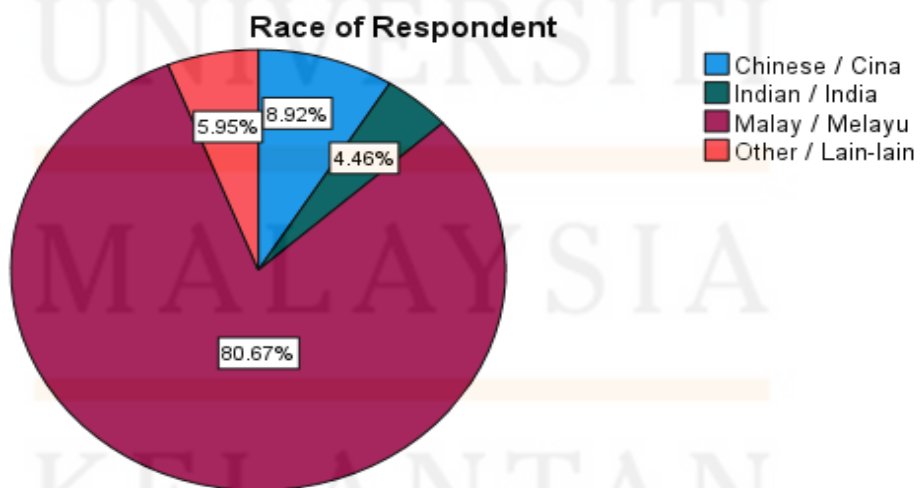
Figure 4.3: Percentage of race

Referring to the table 4.13 and figure 4.3 the results shows that 269 respondents have divided into four categories race which is started with 80.67% equals to 217 respondents is Malay and 8.92% equals to 24 respondents is Chinese. Then, for Indian respondents the percentage is 4.46% equals to 12 respondents and 5.95% which is 16 respondents from other race.

4.5.4 Respondent Based On Marital Status

Table 4.14 Marital Status of Respondent

Marital Status of Respondent					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married / Berkahwin	8	3.0	3.0	3.0
	Single / Bujang	261	97.0	97.0	100.0
	Total	269	100.0	100.0	
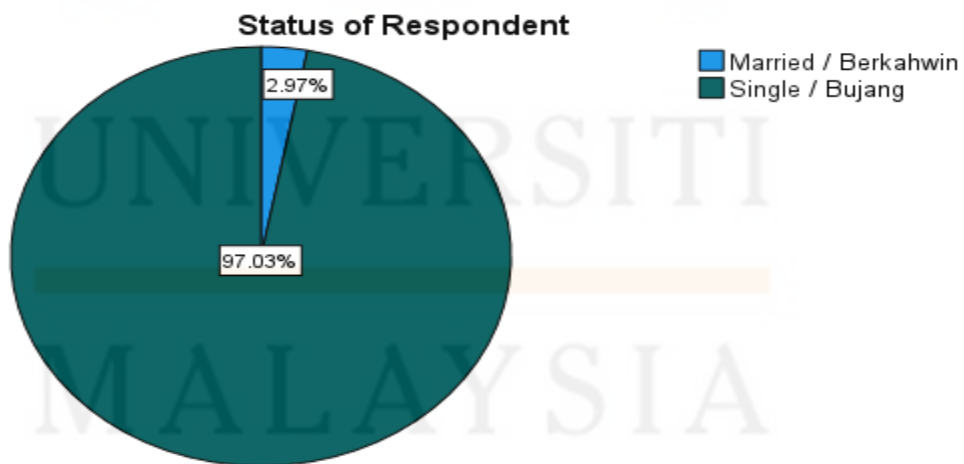
Figure 4.4: Percentage of Status

Table 4.4 and figure 4.4 shows the status of the respondents that involved in this survey. The results show that 97.03% or 261 respondents is from status single. Then, 2.97% or 8 respondents is status married from the total of respondent 269 respondents.

4.5.5 Respondent Based On Course

Table 4.15: Course of Respondents

Course of Respondent		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Commerce (SAK) / Perdagangan	48	17.8	17.8	17.8
	Entrepreneurship (SAE) / Keusahawanan	40	14.9	14.9	32.7
	Islamic Banking and Finance (SAB) / Perbankan dan Kewangan Islam	82	30.5	30.5	63.2
	Logistics and Distribution Trade (SAL) / Perdagangan Logistik dan Pengedaran	56	20.8	20.8	84.0
	Retailing (SAR) / Peruncitan	43	16.0	16.0	100.0
	Total	269	100.0	100.0	
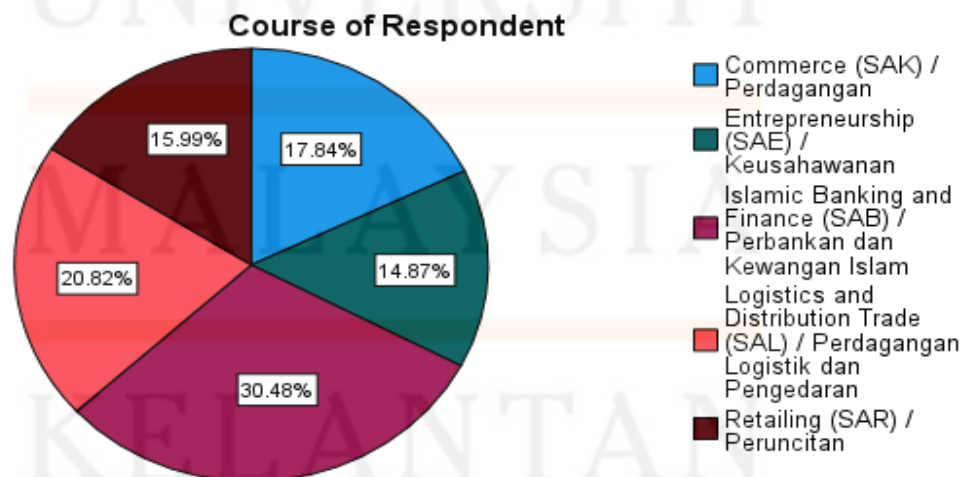
Figure 4.5: Percentage of Course

Table 4.15 and figure 4.5 is showed the results of the number of course. There are 269 respondents involved in this survey and all of them are come from different courses. From the table, we can see that 82 respondents are from course SAB, 56 respondents are from course SAL, 48 respondents are from course SAK, 43 respondents are from course SAR and 40 respondents are from course SAE. Besides, from the figure above, it shows that the higher percentage is course SAB with 30.48%, then followed by 20.82% from course SAL. Next 17.84% is course SAK, then followed by 15.99% from course SAR and the lowers percentage is course SAK with 14.87%.

4.5.6 Respondent Based on Previous Study

Table 4.16: Previous Study of Respondents

Previous Study of Respondent		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Diploma / Diploma	47	17.5	17.5	17.5
	Matriculation / Matrikulasi	28	10.4	10.4	27.9
	STAM / STAM	25	9.3	9.3	37.2
	STPM / STPM	169	62.8	62.8	100.0
	Total	269	100.0	100.0	

57

Previous Study of Respondent
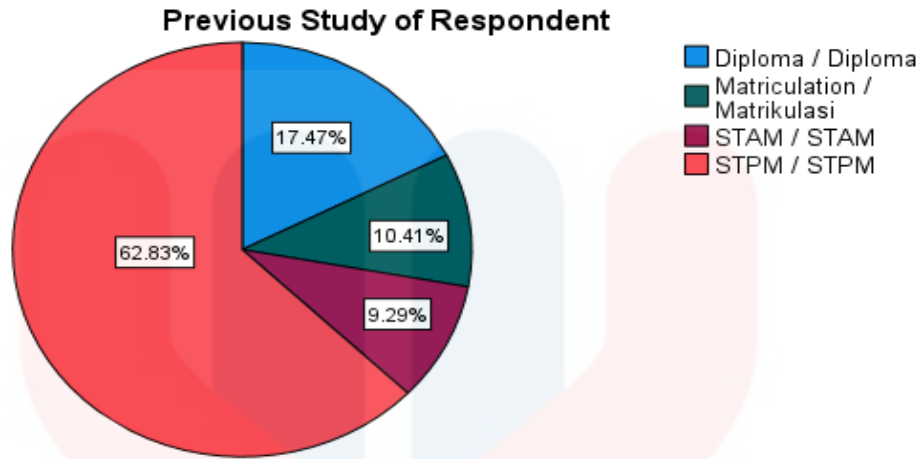
Figure 4.6: Percentage of Previous Study

Referring to the table 4.16 and figure 4.6 the results shows that 269 respondents has grouped by four categories of previous study. We can see that 62.83% or 169 respondents are from previous study of STPM and followed by 17.47% or 47 respondents from diploma. After that, the respondents from previous study of matriculation are 10.41% or 28 respondents and last but not least is respondents from STAM with percentage 9.29% or 25 respondents.

4.5.7. Respondent Based On Trying QR Code for Payment

Table 4.17: Number of Respondents Trying QR Code for Payment

Ever to Try QR Code For Payment					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No/ Tidak	56	20.8	20.8	20.8
	Yes/ Ya	213	79.2	79.2	100.0
	Total	269	100.0	100.0	

58

Ever to Try QR Code For Payment

No/ Tidak
Yes/ Ya
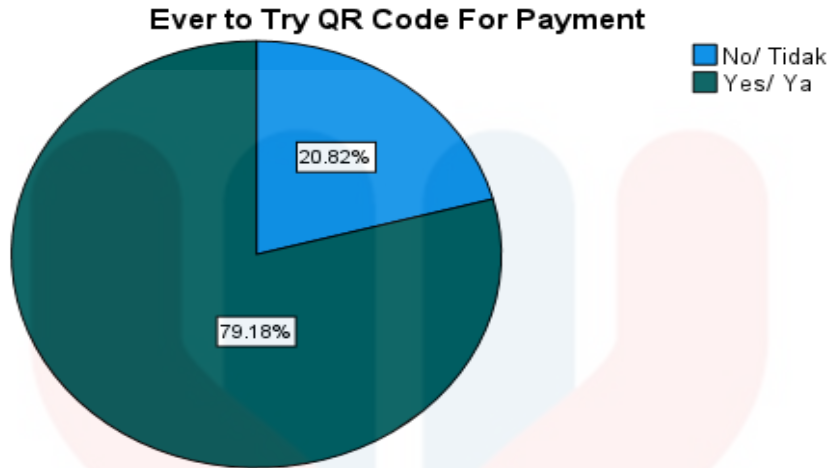
Figure 4.7: Percentage Respondents Trying QR Code for Payment

The table 4.17 and figure 4.7 shows the number of 269 respondents who has ever trying QR code for payment. From the results, it shows that 79.18% or 213 respondents has ever trying QR code during payment. While 20.82% or 56 respondents has never using QR code for payment.

4.5.8. Respondent Based On Frequency of Using E-payment

Table 4.18 Frequency of Respondents Using E-payment

Frequency Of Using E-Payment					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Constantly/ Sentiasa	80	29.7	29.7	29.7
	Never/ Tidak pernah	25	9.3	9.3	39.0
	Rarely/ Jarang	164	61.0	61.0	100.0
	Total	269	100.0	100.0	

59

Frequency Of Using E-Payment

Constantly/ Sentiasa
Never/ Tidak pernah
Rarely/ Jarang

29.74%

60.97%

9.29%
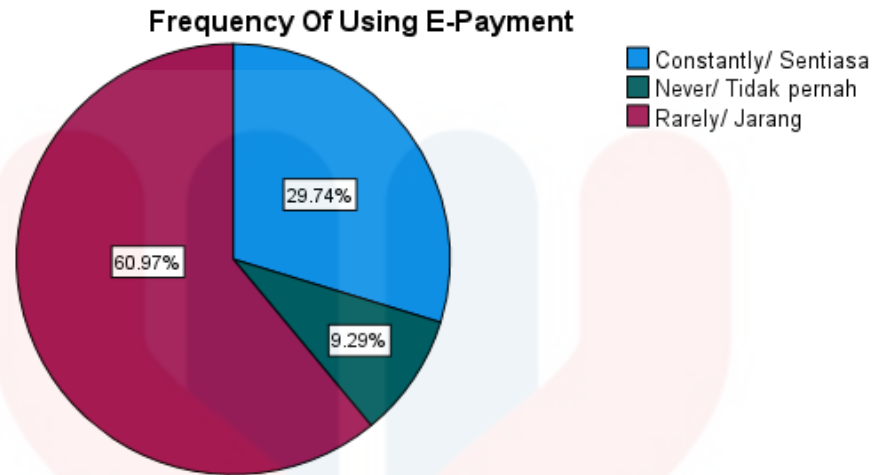
Figure 4.8 Percentage frequency of respondents using e-payment

The table 4.18 and figure 4.8 shows the frequency of respondents using e-payment. From the results, we can see that 60.97% or 164 respondents are rarely using e-payment. However, 29.74% or 80 respondents respond that they are constantly using e-payment. While 9.29% or 25 respondents never using e-payment.

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4.6 DESCRIPTIVE ANALYSIS

Descriptive Statistics are summary statistics that explain the features of collection of information and process using analyzing data statistics. It was used to describe, examine the summary of collected data. The descriptive statistic is carried out the result of analysis to find minimum, maximum, median, standard deviation and variance of each dependent variable and independent variable. The maximum value defines the highest value of each variable and the minimum value defines the lowest value of each variable.

This descriptive section analyzed all the variable using descriptive analysis. The further explanation of the result will be demonstrated in this part. The descriptive analysis of perception University Malaysia Kelantan's student on the effectiveness of e-payment using QR Code, access information, convenient and security data are collected and has been analyzed using Likert Scale with range from 1 which is strongly disagree to 5 which is strongly agree.

4.6.1 The Mean and Standard Deviation

Table 4.19: Descriptive Statistics for Dependent and Independent Variables

Descriptive Statistics			
	N	Mean	Std. Deviation
Effectiveness of e-payment using QR Code	269	4.0197	.6085
Access Information	269	4.1033	.6527
Convenient	269	4.1941	.6192
Security	269	4.2416	.6141
Valid N (list wise)	269		

The table above shows the result of descriptive statistics. It shows that the highest mean value of perception of University Malaysia Kelantan's student on the effectiveness of e-payment using QR code is security which is 4.2416 while the lowest value is 4.1033 which is access information while they make e-payment using QR code. From the analysis, it shows that it is clear the main perception for people to do an e-payment is security which influences people to make their payment using a QR code. The second perception is convenient as a factor that influence to make e-payment using QR code which is 4.1941 followed by access information 4.1033 which is the least perception that influences people to make an e-payment using the QR code in their daily life. The mean value ranged from 4.2416 for security to 4.1033 for access information that agree to the question provided as a perception of University Malaysia Kelantan's student on using QR code to make an e-payment.

4.7 NORMALITY TEST

Table 4.20: Normality Test

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
MeanDV	.078	269	<.001	.970	269	<.001
MeanIV1	.125	269	<.001	.948	269	<.001
MeanIV2	.100	269	<.001	.937	269	<.001
MeanIV3	.108	269	<.001	.928	269	<.001

a. Lilliefors Significance Correction

MeanDV = Mean for Effectiveness of e-payment using QR code

MeanIV1 = Mean for Access Information

MeanIV2= Mean for Convenient

MeanIV3= Mean for Security

In test of normality they have two method to use first is Kolmogorov-Smirnov the sample must P>50 and second is Shapiro-Wilk the sample must P<50. In this research the sample more than 50 people so they use Kolmogorov-Smirnov table to see normality test. The normal data can see from significant value is more than 0.05 but if less than 0.05 it mean can be classified as non-normal data. From this table, the normality test shows the significant values for this research variables are less than 0.05. Thus, the data collected can be classified as non-normal data.
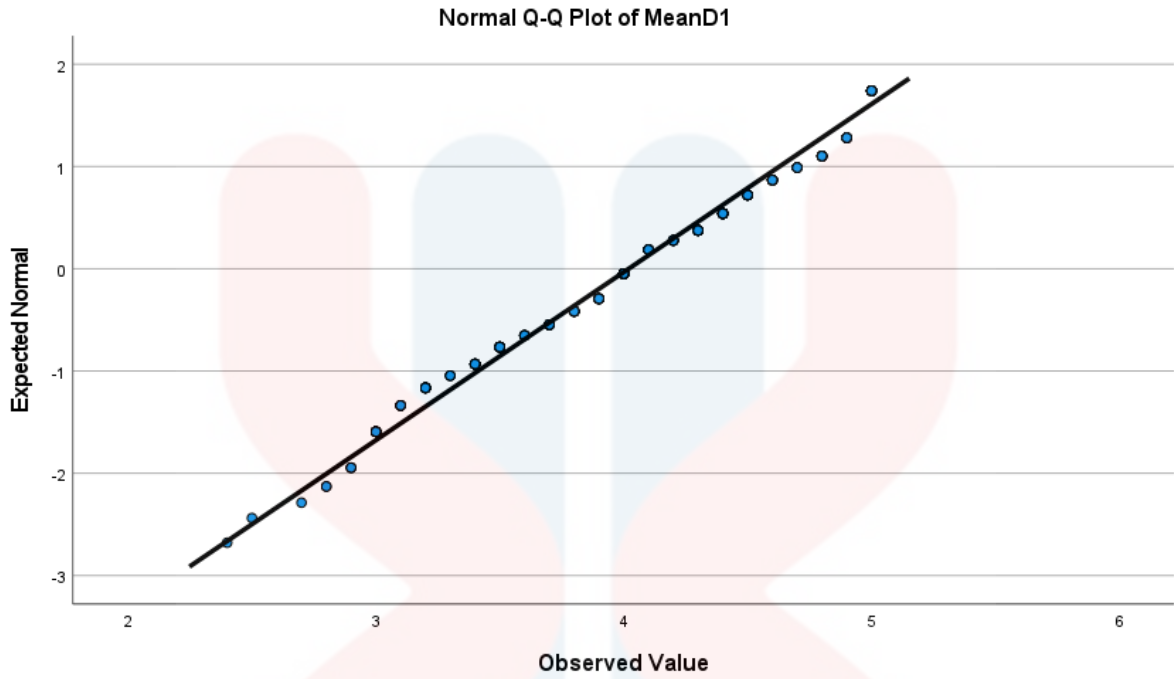
Figure 4.9: Normal Q-Q Plot of Mean for Effectiveness of e-payment using QR code
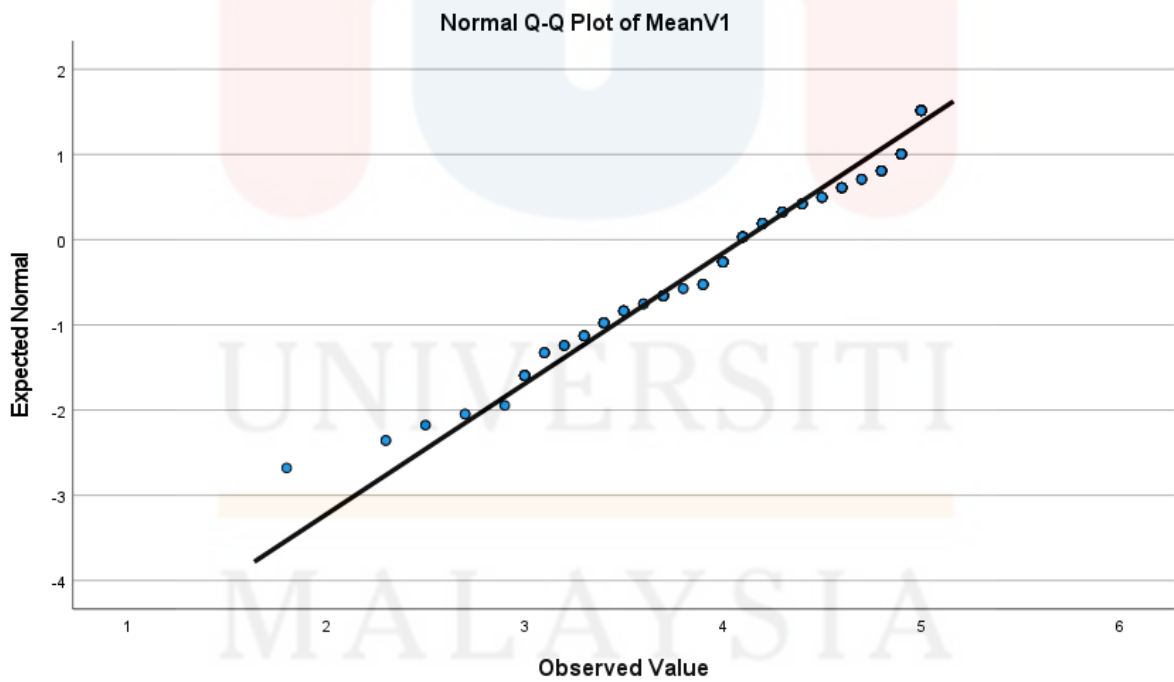
Figure 4.10: Normal Q-Q Plot of Mean for Access Information
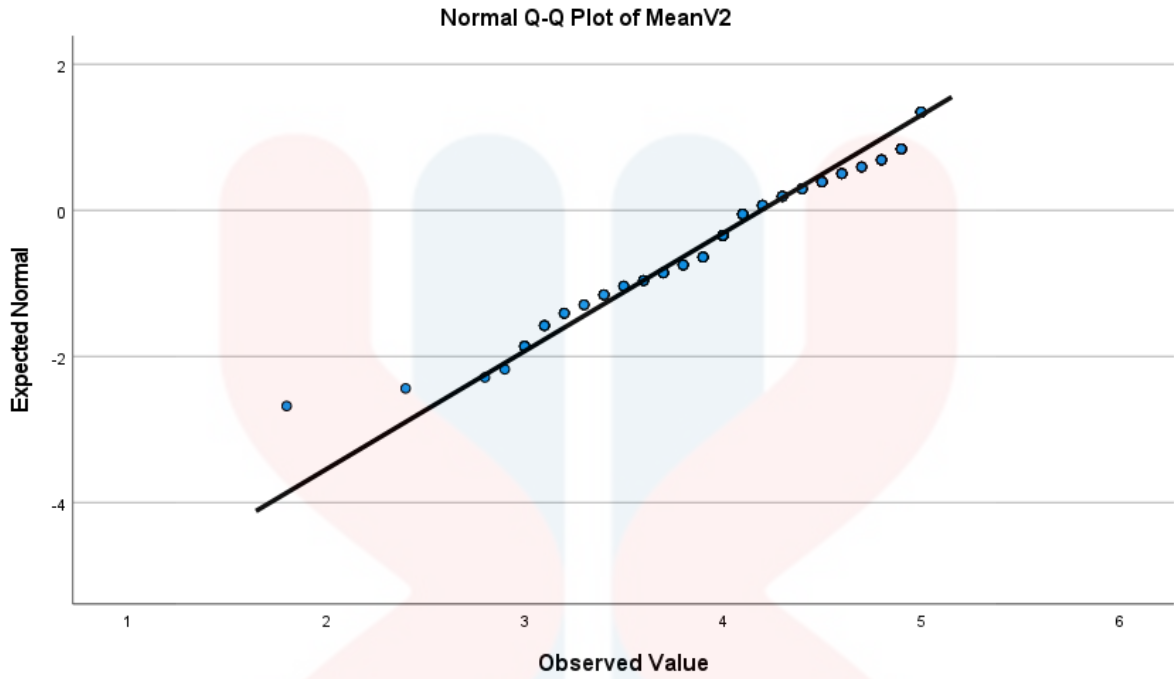
Figure 4.11: Normal Q-Q Plot of Mean for Convenient
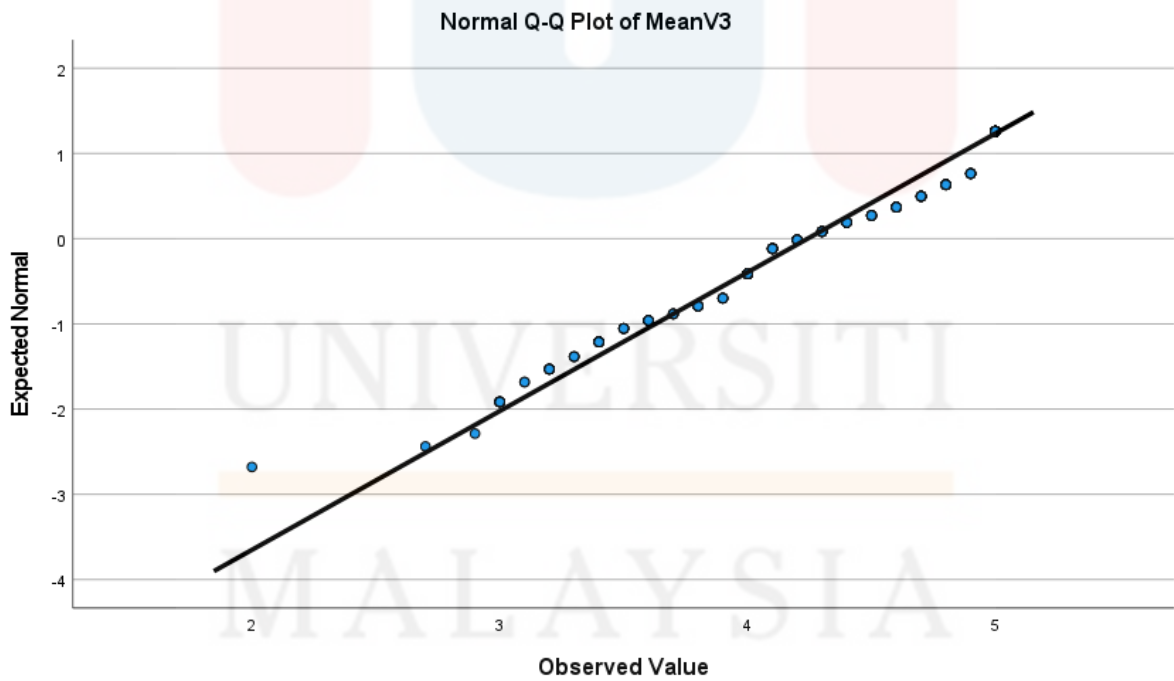
Figure 4.12: Normal Q-Q Plot of Mean for Security

4.8 HYPOTHESIS TESTING

In this hypothesis study, it can be carried out with the results that have been submitted this assessment can be seen through the respondents who have been carried out. Among the methods used is Spearman correlation analysis. Correlation coefficient is seen as two variables that have a relationship to be used as a statistical measure tool. Values taken between -1.0 to 1.0. 1.0 indicates positive while -1.0 is negetive. If the statistic shows a range value other than -1.0 to 1.0, there is a penalty in measuring correlation. (Jason Fernando, 2021).

Table 4.21: Rules of thum on Correlation Coefficient size

Coefficient Range (r)	Strength of Association
0.00 to 0.10/0.00 to -0.10	No linear relationship
0.10 to 0.30/-0.10 to -0.30	Very low positive/negative correlation
0.30 to 0.50/-0.30 to -0.50	Low positive/negative correlation
0.50 to 0.70/-0.50 to -0.70	Moderate positive/negative correlation
0.70 to 0.90/-0.70 to -0.90	High positive/negative correlation
0.90 to 1.00/ -0.90 to -1.00	Very High positive/ negative correlation

4.8.1 Hypothesis 1

H1: There is a positive relationship between access information and the effectiveness of

    e-payment using QR code

Table 4.22: Spearman correlation for Access Information

Correlations			MeanDV	MeanIV1
Spearman's rho	MeanDV	Correlation Coefficient	1.000	.767**
		Sig. (1-tailed)	.	.000
		N	269	269
	MeanIV1	Correlation Coefficient	.767**	1.000
		Sig. (1-tailed)	.000	.
		N	269	269

**. Correlation is significant at the 0.01 level (1-tailed).

Based on the table above, it shows that access information has a high positive connection for the use of QR code in electronic payments. The ratio value is r=0.767, N= 269 students in year three from Faculty of Entrepreneurship and Business in University Malaysia Kelantan, p=0. This relationship has prove that the majority of year three students from Faculty of Entrepreneurship and Business has take advantage of access information for the use of QR code payment online.

4.8.2 Hypothesis 2

H2: There is a positive relationship between convenient and the effectiveness of e-payment using QR code.

Table 4.23: Spearman correlation for Convenient

Correlations			MeanDV	MeanIV2
Spearman's rho	MeanDV	Correlation Coefficient	1.000	.747[**]
		Sig. (1-tailed)	.	.000
		N	269	269
	MeanIV2	Correlation Coefficient	.747[**]	1.000
		Sig. (1-tailed)	.000	.
		N	269	269

**. Correlation is significant at the 0.01 level (1-tailed).

Based on the table above, it shows that convenient has a high positive relationship for the use of QR code in e-payments. The ratio value is r=0.747, N= 269 students in year three from Faculty of Entrepreneurship and Business in University Malaysia Kelantan, p=0. This relationship shows that majority of year three student from Faculty of Entrepreneurship and Business are comfortable with the situation of Industrial Revolution (IR) 4.0, so there will be no fault in the use of QR code payment online.

4.8.3: Hypothesis 3

H3: There is a positive relationship between security and the effectiveness of e-payment using QR code.

Table 4.24: Spearman correlation for Security

Correlations			MeanDV	MeanIV3
Spearman's rho	MeanDV	Correlation Coefficient	1.000	.718**
		Sig. (1-tailed)	.	.000
		N	269	269
	MeanIV3	Correlation Coefficient	.718**	1.000
		Sig. (1-tailed)	.000	.
		N	269	269

**. Correlation is significant at the 0.01 level (1-tailed).

Based on the table above, it shows that security has a high positive relationship for the use of QR code in e-payments. The ratio value is r=0.718, N= 269 students in year three from Faculty of Entrepreneurship and Business in University Malaysia Kelantan, p=0. This relationship shows that the majority of year three student from Faculty of Entrepreneurship and Business are very concerned about the security of using QR code to conduct online payment transactions. This is because to avoids rampant deceit. Although the security ratio is slightly low compared to information access, it is still in high clashes and shows positive.

69

4.9 CONCLUSION

In this topic, we have use data analysis to analyse the questionnaire received from respondents. From the total population which is 893 students from year three in Faculty of Entrepreneurship and Business in University Malaysia Kelantan, we had choose 269 students as our respondents for this study. The link of the questionnaire has been distributed to respondents through social media such as Whatsapp, Facebook and Instagram. After receiving response from respondents, we analyzed the data using SPSS and found that all the variables on this study are acceptable based on the result of reliability analysis. Besides, the hypothesis of this study also shows that it has positive relationship based on correlation analyses result. In a nutshell, all the research question and objectives in this study had been achieved through these statistical analyses.

CHAPTER 5: DISCUSSION AND CONCLUSION

5.1 INTRODUCTION

In the last chapter of this study, the researcher will describe the key findings while conducting research on the effectiveness of e-payment transactions using encrypted QR codes, than followed by a discussion of the hypotheses. In fact, each study has implications and limitations such as weaknesses and shortcomings that may be caused by several factors and this part also discuss in this study. In this section also makes recommendations on the study and will end with a summary of this study.

5.2 KEY FINDINGS

The research that has been conducted in University Malaysia Kelantan with the involvement of 269 third year students from the Faculty of Entrepreneurship and Business has been successfully implemented where all three research objectives have been achieved. To get the specific and detail results, the questionnaire that has been distributed and answered by respondents has been run through SPPS. In reliability test, the α coefficient of reliability ranges was in between 0 to 1 in providing this overall measurement of the performance of a test. Therefore, the questionnaires that used in this study are highly consistency where Cronbach's Alpha Coefficient are around 0.80 to < 0.90.

The demographic of respondents were categorized into gender, age, race, status, course, previous study, ever to try QR code for payment and frequency of using e-payment. Majority of respondents who involved in this research are female for gender, 21-23 years for age, malay for race, single for marital status, SAB for course, STPM for previous study, rarely for frequency of using e-payment.

Researchers also found that access information, convenient and security had a significant relationship on the effectiveness of e-payment using QR code based on the study's hypothesis. In addition, the security has the highest mean value 4.24 followed by convenient with 4.19 and the lowest mean value was access information (4.10).

Next, the hypothesis proved that the access information has a high positive connection for the use of QR code in e-payments. On the other hand, convenient has a high positive relationship for the use of QR code in e-payments. Next, security has a high positive relationship for the use of QR code in e-payments.

Thus, the result prove that most respondents that consists of third year student from Faculty of Entrepreneurship and Business has agreed and choose that access information, convenient and security has lead to the effectiveness of QR code in e-payment.

5.3 DISCUSSION

A total of 269 respondents from third year students of Faculty of Entrepreneurship and Business in University Malaysia Kelantan have responded to this research. They are believed to be matures in their opinion and perception because majority respondent is from age of 20 until 26 years old. From the findings, majority of respondents have an experience of use QR code by making e-payment in their daily life. This can be reflected that third year students of University Malaysia Kelantan are consumers of QR code and they have their own perception on continually use QR code as their alternative transaction in future.

In this study, was found that students in University Malaysia Kelantan have been introduced in dealing transaction by using QR code through others reasons such as easy to access information by using QR code. Most of the respondents use QR code because it was convenient to make any payment by using QR code nowadays. Also, students in University Malaysia Kelantan were found satisfied while using a QR code in making payment because it is secured and convenient.

Furthermore, the objective of this research is to study whether these factors have any relationship between independent variable and dependent variable. This research also identified the relationship between access information, convenient and security that play a key role in effecting using the QR code among third year students in University Malaysia Kelantan. Researchers also describe the dominant factor from this research that has a strong relationship with the effectiveness in using QR code while making an e-payment. According to the Cronbach's Alpha Coefficient in this study showed a significant result and therefore the objective of this study has accomplished.

73

5.3.1 Hypothesis 1: There is a positive relationship between access information and the effectiveness of e-payment using QR code

The major finding in this research paper is about the perception of third year students of University Malaysia Kelantan on the use of QR code. In order to examine the perception of the use of QR code, Spearman correlation was performed. Table 4.22 in Chapter 4, shows that:

Access information has excellent and high positive connection (0.767) for the use of QR code in electronic payment. This positive weak relationship implies that reliability factor is considered to be important determinants that influence the use of QR code in electronic payment. Therefore, the significant moderate positive relationship between the variables substantiates hypothesis H1, there is a significant relationship between the effectiveness to use QR code in electronic payment among third year student of University Malaysia Kelantan. This finding appears to support the previous research about a digital transactions encourage people to adapt to payments using electronic payments/e-payment (De Luna, 2019).

5.3.2 Hypothesis 2: There is a positive relationship between convenient and the effectiveness of e-payment using QR code.

Base on the table 4.23, the relationship of convenient of use QR code in electronic payment is relatively good with (0.747). The moderate positive relationship implies that year three students of University Malaysia Kelantan perceived that convenient is moderate factor that influence their perception of using a QR code in electronic payment. This is show by the significant value (0.000) obtained in the correlation analysis which should be equal or less than p value 0.01 significant levels. Therefore, the significant moderate positive relationship

74

between the variables does satisfy hypothesis H2 that there is a significant relationship between perception of year three students of University Malaysia Kelantan on the use of QR code and the convenient to use QR code. This is supported in study by Sumanjeet (2010) summarized that the growth of e-commerce needs the e-payment to support their business. Credit cards, internet banking, and mobile banking are the most e-payment system to support e-commerce. Since this system are security acceptability, convenience, cost anonymity contra, and track-ability. Mobile banking can be seen as a subset of electronic banking (E-banking) - a concept covering all the electronic modes of conducting banking engagements (Pousttchi and Schurig, 2004) and an extension of internet banking (Brown, Cajee, Davies, and Stroebel, 2003) with its own unique features. This research will study the single platform e-payment system as the unique features that provide convenience and novelty design to current Internet and Mobile banking consumers.

5.3.3 Hypothesis 3: There is a positive relationship between security and the effectiveness of e-payment using QR code.

The table 4.24 on chapter 4 shows that security has excellent and good positive relationship for the use of QR in electronic payments which is (0.718). This relationship satisfies H3 that there is a significant relationship between the security of the use QR code in order to identify the perfection of year three students of University Malaysia Kelantan. In support to this finding, Lai, Ahmad & Zainal (2015) stated that platform e-payment system should include convenience and good design while providing security to reduce the risk that support the ease of use and usefulness of the single platform e-payment that can lead to consumers' intention to use single platform e-payment system.

5.4 IMPLICATION OF THE STUDY

The impact of research on future research, policy decisions, or the relevant field of study for the researcher is referred to as research implication. From this research the implication can help research for the future and supports the past research on the effectiveness of e-payment transactions using encrypted QR code. In fact, they can use this research as a reference to help their research.

Firstly, the implication that will happen is government interest and intervention in e-payment transaction using encrypted QR code. From the research conducted shows that almost all respondents use e-payment transactions using encrypted QR code. This study proves that this matter will flourish in the future and be more widely accepted by the public. This will cause the government to pay more attention to improving and supporting the widespread use of the system. For example, such as the provision of RM50 assistance to the people on the condition of redemption using an authorized application. This has led to the increasing use of e-payment transactions using encrypted QR code.

The second implication is a poor internet connection. To use e-payment transactions using QR codes, users need a strong internet connection. Internet connection that does not affect users because there will be difficulties in making payments and take a long time. A good internet connection will only happen in urban areas, but internet connections in rural areas have problems such as slow connectivity. This matter affects rural development because rural consumers have problems in making e-payment transactions using QR codes.

Finally, the implication of effective e-payment transactions using QR codes is an increase in smartphone use. Smartphones are useful to Malaysians now. This is due to the prevailing pandemics, the increase in the use of smartphones is increasing to be used for study, work and so ont. But not everyone can afford to own a smartphone because of the high

price. This is one that will cause the use of e-payment transactions using QR codes can not be used. It will give problems to this field to continue to grow and progress. The effects of it are also invisible as not everyone is able to use and respond.

5.5 LIMITATIONS OF STUDY

During the research conducted, there are several limitations that has been identified which is limitations of data collection method. In this study, researcher only use an online survey to collect data from respondents. Through this method, it is ease researcher because it easy to approach and collect data from respondents. However, the weaknesses of this method is researcher are not able to know the validation of the information given by respondents. Besides, online survey take lot of time compare to others method because researcher need to find respondents and give time for them to answer the questionnaire because some respondents having problem with internet connection or devices since this questionnaire are only can be access using link that opened in devices and need strong internet connection.

Furthermore, the respondents that involved in this study are also limited. In this study, researcher choose third year students from Faculty of Entrepreneurship and Business as respondents to answer the questionnaire given. Since all the respondents are students thus they are having busy schedule and difficult to give cooperation to answer the questionnaire. In addition, this study are only using specific or small community thus all the response and result are only based on the perspective view or thought by certain people which are third year students from Faculty of Entrepreneurship and Business.

Next, the limitation in this study is this study is conducted during pandemic COVID-19 happen. As we know, COVID-19 has affected human life in terms of economically and socially. This also causes the researcher to have trouble communicating due to being in their respective home areas. In addition, COVID-19 also made it difficult for researchers to move due to restrictions movement by the government to curb the spread of COVID-19. This makes it difficult for researchers to find and obtain reference materials that can be obtained in the library and have to use sources from the internet and other reference sources. This also causes reference material to be limited.

5.6 RECOMMENDATIONS

Every study carried out is a few recommendations for improvement. Based on the time given, we had a very limited time, plus our field of project are very limited. So, if we had a lot more time, we could make some interviews and meet up with consumer whom using the QR code in payment transactions. This is because of the simplicity by using QR code in any transaction physically.

The purposed of these interviews can be seen by the extent of the validity of this study on them. Thus, the upcoming study can be expanded in each category that is not only for student. This is because our study focuses only on University Malaysia Kelantan (UMK) and the students involved are only third year student from Faculty of Entrepreneurship and Business. During the study, it was hard to get the cooperation from all students to fill out the questionnaire. This situation occurred when the students had some pressure to fill out a lot of questionnaires that came from other researchers.

The system using QR code may have a virus threat if it goes wrong, worst possible situation is all of one's user information will be stolen. Besides, QR code dependency on the Internet. If an internet outage happens, any transactions are difficult to implement. To prevent any bad scenario or issue, every technology will be constantly enhanced to ensure the safety of users.

Based on most application on mobile platform, most of their transaction payout are using QR code. From my perspective, as a researcher and being a user of QR code upon using most of existed applications, it takes up spaces, reduced smartphones performance and makes them lag because of too many different applications. From this, I would like to suggest having one application where all of these applications can be combined on one platform. For example, Mr. Ge, MAE, Boots and so on can be access in one application, by then, users can choose conveniently which one to comply. As you can see by the usage of QR code in

DuitNow, whereas customers freely choose any banks by making payments rather than using Maybank QR codes, which is limited for Maybank account users and apps only. Now they can choose their preferred bank account and make transaction by tapping and scanning easily.

In addition, it is expected that there will be a high chance where users can use QR codes outside the country by using the same application. So, consumers didn't have to bother or drag themselves to exchange their money currency at the Money Exchanger. There are several countries that applied and provided this benefit, one of them is Indonesia. Indonesia Banks has created QR codes services that can be used by all four countries namely Malaysia, Indonesia, the Philippines, and Thailand. With the creation of this QR code, anyone who went to Indonesia, can make any payment transaction without any hassle about changing into Indonesia's money currency (BI Wahyu Pratomo, 2019). We suggest that Malaysia should also create something alike to gain benefits and give simplicity for any foreign visitor across all over the world. By then the Malaysian economy will improve, a little facts finance cannot stand alone without an economy.

Thus, there are proposals that can be refined and converse to Revolutionary Industry 4.0 (IR 4.0). If a proposal is accepted, then the use of QR code gets the attention of the bank card payer.

5.7 CONCLUSION

This study examines the effectiveness usage of QR code in online payments. Throughout the period of study, there is a discussion of whether the objectives and problems stated can be answered. In our study there were four variables between, access information, convenient and security and one variable backed up is the effectiveness of using QR code. As a hypothesis, this study successfully answered all the variables, objectives, and problem statements, throughout the course of this study there are some limitations that we face. With this study, it explains what the limitations are from previous researchers. As well as at the end of the day, researchers have added a few recommendations to expand the use of QR code with guaranteed safety.

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QUESTIONNAIRE

SECTION A: DEMOGRAPHIC BACKGROUND

Before beginning to answer the question be sure to read the instructions on this page. Sila baca arahan soalan sebelum menjawab soalan.

Please read each statement carefully and tick (/) on your answer. Sila baca setiap kenyataan dengan teliti dan tandakan (/) pada jawapan anda.

1. Gender / Jantina
   - (   ) Male / Lelaki
   - (   ) Female / Perempuan

2. Age / Umur
   - (   ) 18-20 years old / tahun
   - (   ) 21-23 years old / tahun
   - (   ) 24-25 years old / tahun
   - (   ) 26 years old and above / tahun dan ke atas

3. Race / Bangsa
   - (   ) Malay / Melayu
   - (   ) Chinese / Cina
   - (   ) Indian / India
   - (   ) Other / Lain-lain

4. Status / Status
   - (   ) Single / Bujang
   - (   ) Married / Berkahwin

5. Course / Kursus
   - (   ) Commerce (SAK) / Perdagangan
   - (   ) Logistics and Distribution Trade (SAL) / Perdagangan Logistik dan Pengedaran

(   ) Retailing (SAR) / Peruncitan

(   ) Entrepreneurship (SAE) / Keusahawanan

(   ) Islamic Banking and Finance (SAB) / Perbankan dan Kewangan Islam

6. Previous Study / Pengajian yang lepas

(   ) Diploma / Diploma

(   ) Matriculation / Matrikulasi

(   ) STPM / STPM

(   ) STAM / STAM

7. Ever to try QR code for Payment?/ Pernah mencuba kod QR untuk pembayaran?

(   ) Yes/ Ya

(   ) No/ Tidak

8. Frequency of using e-payment/ Kekerapan menggunakan e-pembayaran

(   ) Constantly/ Sentiasa

(   ) Rarely/ Jarang

(   ) Never/ Tidak pernah

SECTION B

Next, please kindly rate your level of understandings in effectiveness of e-payment using QR code on the following selection. You can circle your honest response between 1 to 5.

Sila nilai tahap kefahaman anda terhadap keberkesanan e-pembayaran menggunakan kod QR pada pilihan berikut. Anda boleh bulatkan jawapan jujur anda di antara 1 hingga 5.

Strongly disagree	Disagree	Nature	Agree	Strongly Agree
1	2	3	4	5

1. The Effectiveness of using QR code in e-payment / Keberkesanan menggunakan kod QR dalam e-pembayaran

1.	Using QR code in e-payment gives me satisfaction / Menggunakan kod QR dalam e-pembayaran memberi kepuasan kepada saya.	1	2	3	4	5
2.	The use of QR code in e-payment can control my spending compared to banknotes in my own hands / Penggunaan kod QR dalam e-pembayaran dapat mengawal perbelanjaan saya berbanding wang kertas di tangan sendiri.	1	2	3	4	5
3.	Payment by QR code using electronic devices is more secure than using a card (paywave) and cash. / Pembayaran secara kod QR menggunakan peranti elektronik lebih selamat daripada menggunakan kad (paywave) dan tunai.	1	2	3	4	5
4.	After using QR codes in e-payments, my frequency of going out of the house to get goods or services is very rare. / Setelah menggunakan kod QR dalam e-pembayaran, kekerapan saya keluar rumah untuk mendapatkan barang atau perkhidmatan sangat jarang.	1	2	3	4	5
5.	The use of QR code in e-payment increases my chances	1	2	3	4	5

	to achieve the items I want quickly / Penggunaan kod QR dalam e-pembayaran meningkatkan peluang saya untuk mendapatkan barang yang saya inginkan dengan cepat.					
6.	The QR code in e-payment allows me to perform any transaction whether purchase or payment without having to face to face. / Kod QR dalam e-pembayaran membolehkan saya melakukan apa-apa transaksi sama ada pembelian atau pembayaran tanpa perlu bersemuka.	1	2	3	4	5
7.	With the QR code in e-payment, I do not have to queue for a long time to withdraw money at an ATM or when making a payment at the counter. / Dengan adanya kod QR dalam e-pembayaran saya tidak perlu beratur lama bagi mengambil wang di ATM atau semasa membuat pembayaran di kaunter.	1	2	3	4	5
8.	With the presence of QR codes in e-payments, I became more frequent in using e-payments and using less cash. / Dengan adanya kod QR dalam e-pembayaran, saya menjadi semakin kerap menggunakan e-pembayaran dan kurang menggunakan wang tunai.	1	2	3	4	5
9.	The use of QR codes in e-payments has changed my life where I can save time, energy and money to get things I want. / Penggunaan kod QR dalam e-pembayaran telah mengubah hidup saya di mana saya dapat menjimatkan masa, tenaga dan wang untuk mendapatkan barangan yang saya inginkan.	1	2	3	4	5
10.	Even though COVID-19 is gone, I will continue to use e-payments that come with a QR code. / Meskipun COVID-19 telah hilang, saya akan terus menggunakan e-pembayaran yang dilengkapi dengan kod QR.	1	2	3	4	5

SECTION C

Next, please kindly rate your level of effect in using QR code in e-payment on the following selection. You can circle your honest response between 1 to 5. Please take note that there is no right or wrong in your answer.

Sila nilai tahap kesan anda dalam menggunakan kod QR dalam e-pembayaran pada pilihan berikut. Anda boleh bulatkan jawapan jujur anda di antara 1 hingga 5. Sila ambil perhatian bahawa tiada jawapan betul ataupun salah dalam jawapan anda.

Strongly disagree	Disagree	Nature	Agree	Strongly Agree
1	2	3	4	5

1. Effect of Access Information To The Effectiveness of QR Code/ Kesan Akses Maklumat Kepada Keberkesanan Kod QR

1.	I can find information about a product by simply scanning the QR code displayed./ Saya dapat mencari maklumat berkenaan sesuatu produk dengan hanya mengimbas kod QR yang dipaparkan.	1	2	3	4	5
2.	By scanning QR code, I can find out the price of each product without having to ask the staff about the price of the product. / Dengan mengimbas kod QR, saya dapat mengetahui harga setiap produk tanpa perlu bertanya pekerja tentang harga produk.	1	2	3	4	5
3	Information about products and companies displayed after scanning the QR code can be understood easily, clearly and concisely. / Maklumat berkenaan produk dan syarikat yang dipaparkan selepas mengimbas kod QR dapat difahami dengan mudah, jelas dan ringkas.	1	2	3	4	5
4.	I will scan the QR code of a product to find out more about the product before making a purchase. / Saya akan mengimbas kod QR sesuatu produk bagi mengetahui lebih lanjut tentang produk tersebut sebelum melakukan	1	2	3	4	5

91

	pembelian.					
5.	All information contained in the QR code is up to date and it is always updated. / Segala maklumat yang terdapat dalam kod QR adalah yang terkini dan ianya sentiasa dikemaskini.	1	2	3	4	5
6.	Accessing information about a product or company via a QR code is safer than using a link. / Mengakses maklumat berkenaan produk atau syarikat melalui kod QR lebih selamat daripada menggunakan link.	1	2	3	4	5
7.	Accessing information before making a payment makes my purchase easier. / Mengakses maklumat sebelum membuat pembayaran memudahkan urusan pembelian saya.	1	2	3	4	5
8.	Accessing information using a QR code does not invade my privacy information. / Mengakses maklumat menggunakan kod QR tidak mengganggu maklumat privasi saya.	1	2	3	4	5
9.	QR codes help me a lot to access information whenever I want. / Kod QR banyak membantu saya mengakses maklumat pada bila-bila masa yang saya inginkan.	1	2	3	4	5
10.	I was satisfied with the information contained in the QR code because it had the complete information I wanted. / Saya berpuas hati dengan maklumat yang terdapat dalam kod QR kerana mempunyai maklumat lengkap yang saya inginkan.	1	2	3	4	5

2. Effect of Convenient To The Effectiveness of QR Code/ Kesan Mudah Kepada Keberkesanan Kod QR

1.	Payment transactions using QR codes are very compatible with the modern world of IR 4.0. / Transaksi pembayaran menggunakan kod QR amat sesuai dengan	1	2	3	4	5

	dunia modern IR 4.0.					
2.	I feel the flow speed of the e-payment system is faster when using a QR code when compared to using a debit or credit card. / Saya merasakan kelajuan aliran sistem e-pembayaran lebih cepat apabila menggunakan kod QR jika dibandingkan dengan menggunakan kad debit atau credit.	1	2	3	4	5
3.	QR codes take a short time to scan a code to execute a transaction. / Kod QR mengambil masa yang singkat untuk mengimbas sesuatu kod bagi menjalankan transaksi.	1	2	3	4	5
4.	E-payment by using a QR code helps ease my transactions. / E-pembayaran dengan mengunakan kod QR membantu memudahkan urusan transaksi saya.	1	2	3	4	5
5.	By using the QR code in e-payment transactions can be done anywhere and at any time when desired. / Dengan menggunakan kod QR dalam e-pembayaran transaksi boleh dilakukan di mana-mana sahaja dan pada bila-bila masa yang dikehendaki.	1	2	3	4	5
6.	Payment via QR code is very easy as no special machine is required instead just use an electronic device like a smartphone. / Pembayaran melalui kod QR sangat mudah kerana tidak ada mesin khusus yang diperlukan sebaliknya hanya menggunakan peranti elektronik seperti telefon pintar.	1	2	3	4	5
7.	I can access a store's website easily with a QR code without having to search for the store on the internet. / Saya dapat mengakses laman web sesuatu kedai dengan mudah dengan kod QR tanpa perlu mencari kedai tersebut di internet.	1	2	3	4	5
8.	Payment using a QR code is easier as I don't have to calculate the amount to be paid or press a pin number while using a debit card. / Pembayaran menggunakan	1	2	3	4	5

93

	kod QR lebih mudah kerana saya tidak perlu mengira jumlah wang yang perlu dibayar atau menekan nombor pin semasa menggunakan kad debit.					
9.	By just scanning the QR code once, I can access any information or make a transaction to anyone easily. / Dengan hanya mengimbas kod QR sekali, saya dapat mengakses apa sahaja maklumat atau membuat transaksi kepada sesiapa sahaja dengan mudah.	1	2	3	4	5
10.	I do not have to learn how to use QR codes in e-payments because the process is very simple and easy to understand. / Saya tidak perlu belajar cara untuk menggunakan kod QR dalam e-pembayaran kerana prosesnya sangat mudah dan senang difahami.	1	2	3	4	5

3. Effect of Security To The Effectiveness of QR Code/ Kesan Keselamatan Kepada Keberkesanan Kod QR

1.	Has a high security feature compared to cards, where the QR code will ask for a pin number and OTP for payment confirmation. / Mempunyai ciri keselamatan yang tinggi berbanding kad, dimana kod QR akan meminta nombor pin dan OTP untuk pengesahan pembayaran.	1	2	3	4	5
2.	There is no fraudulent receipt of counterfeit banknotes when QR codes. / Tiada penipuan penerimaan wang kertas palsu apabila menggunakan kod QR.	1	2	3	4	5
3.	Strict security gives confidence to users to make e-payments using QR codes. / Keselamatan yang ketat memberi keyakinan kepada pengguna untk membuat e-pembayaran mengunakan kod QR.	1	2	3	4	5
4.	Strict security on payment systems using QR codes can save users from the misuse of personal information. / Keselamatan yang ketat pada sistem pembayaran	1	2	3	4	5

94

	mengunakan kod QR dapat menyelamatkan penguna dari penyalahgunaan maklumat peribadi					
5.	E-payments using QR codes have strict and secure security features. / E-pembayaran mengunakan kod QR mempunyai ciri-ciri keselamatan yang ketat dan selamat	1	2	3	4	5
6.	Payment by e-payment using QR code can reduce the risk of COVIID-19 infection. / Pembayaran secara e-pembayaran dengan mengunakan kod QR dapat mengurangkan risiko jangkitan COVID-19.	1	2	3	4	5
7.	QR codes are not physical items that are easily damaged or lost such as money or bank cards. / Kod QR bukan barangan fizikal yang mudah rosak atau hilang seperti wang atau kad bank.	1	2	3	4	5
8.	QR codes are safer to use because they cannot be duplicate compared to debit or credit cards that can be duplicate. / Kod QR lebih selamat digunakan kerana tidak boleh digandakan berbanding kad debit atau kad kredit yang boleh digandakan.	1	2	3	4	5
9.	I no longer have to worry about dropping cash or bank cards if I have used a QR code. / Saya tidak perlu risau lagi tentang keciciran wang tunai atau kad bank sekiranya telah menggunakan kod QR.	1	2	3	4	5
10.	My financial security is guaranteed when making transactions using QR codes. / Keselamatan kewangan saya terjamin semasa melakukan transaksi dengan menggunakan kod QR.	1	2	3	4	5

Soalan Tamat

Sekian Terima Kasih