FACTORS AFFECTING THE ACCEPTANCE OF E-COMMERCE APPLICATIONS AMONG HIGHER EDUCATION STUDENTS IN KELANTAN

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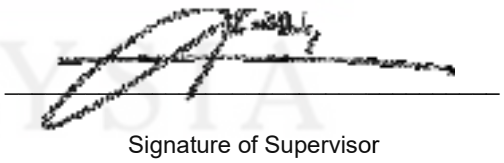

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LIST OF ABBREVIATIONS

SMEs	Small and Medium-sized Enterprises
MIDA	Malaysian Investment Development Authority
TAM	Technology Acceptance Model

ABSTRACT

This study focuses on the acceptance of E-Commerce Applications. This study examines the acceptance of E-Commerce applications among higher education students in Kelantan. This study investigates the relationship among perceived ease of use, perceived usefulness, and perceived risk towards the acceptance of E-Commerce among higher education students. Quantitative research was carried out to accomplish this research. Simple random sampling was used, and responses from 384 respondents were gathered. Descriptive analysis, reliability test, and Pearson correlation were used to analyse the data. Perceived ease of use, perceived usefulness, and perceived risk influenced higher education students' acceptance in using E-Commerce Applications.

Keywords: E-Commerce, E-Commerce Applications, Perceived Usefulness, Perceived Ease of Use, Perceived Risk.

ABSTRAK

Kajian ini memberi tumpuan kepada penerimaan aplikasi e-dagang. Kajian ini meneliti mengenai penerimaan aplikasi e-dagang dalam kalangan pelajar yang mempunyai Pendidikan tinggi di Kelantan. Kajian ini mengkaji hubungan antara penggunaannya, pemudahcara, dan risiko terhadap penerimaan aplikasi e-dagang dalam kalangan pelajar Pendidikan tinggi. Satu kajian kuantitatif telah dijalankan bagi menyempurnakan kajian ini. Persampelan mudah rawak telah digunakan dan maklum balas daripada 384 responden telah dikumpulkan. Analisis driskriptif, ujian kebolehpercayaan dan korelasi Pearson telah digunakan untuk menganalisis data. Penggunaanya, pemudahcara dan risiko didapati ada pengaruh kepada penerimaan aplikasi e-dagang dalam kalangan pelajar berpendidikan tinggi.

Kata kunci: E-Dagang, Aplikasi E-Dagang, Penggunaan, Pemudahcara, Risiko.

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

This research investigates the factors affecting the acceptance of e-commerce among higher education students in Kelantan. In this chapter, the background of the study, research objectives and questions, significance of the research, and definition of terms is also being discussed.

1.2 BACKGROUND OF THE STUDY

Nowadays, e-commerce has the possibility of growing business (Paynter & Lim (2001). This is because the application such as Lazada, Adayroi, and Tiki has made great strides in the past two years (Tran, 2019). The Edge Markets (2020), states that in the world of e-commerce, Malaysia is an attractive market because of the advanced digital technology infrastructure and rapid economic growth. The internet can be used for many things such as emailing documents using Gmail or chatting with people via social media such as WhatsApp, browsing the information that needs with google, a multitude of exchanges and transactions, advertising the business on the internet through Shopee and Instagram. In the developed countries, e-commerce helps small and medium-sized enterprises (SMEs) to make their business succeed (Seng, Baharudin & Rong, 2016). In short, e-commerce has a lot of definitions depending on the perspective view of academicians, researchers, and practitioners (Seng, Baharudin & Rong, 2016).

Payment gateway is the technology that involves from the customer to the acquirer that uses transfers and captures payment data and gives results whether the payment is accepted or rejected back to the customer (Marketing, 2019). The person or companies involved in the payment gateway is the merchant, which is the online business, the customer, and the bank (Marketing, 2019). The payment gateway is one of the e-commerce applications of service that provides service in authorizing credit card payments for e-business, brick and clicks, online retailers, or traditional brick or mortar. The third-party payment interface provides a payment gateway between banks for real-time payment (Lowry, Wells, Moody, Humphreys, & Kettles, 2006).

Grab is one of the companies that use mobile payment applications, which has introduced GrabPay as a mobile payment application (Hashim et al., 2020). The company introduced GrabPay as one of the new types of service alongside GrabCar, GrabFood, and GrabExpress (Hashim et al., 2020). GrabPay made the collaboration with Maybank from the launch of the application as the Maybank2U and GrabPay facilities have integrated support between them to ensure the smooth operation when using GrabCar among consumers (Hashim et al., 2020). In addition, GrabPay is not only used for mobile payments and physical store purchases but also can be applied to pay for transport services (Hashim et al., 2020). In short, GrabPay, with its collaboration with various convenience stores, has entered the market, fortunately (Hashim et al., 2020). The payment systems are fast, efficient, convenient, and economical with online payments compared with traditional payments.

Besides that, business-to-consumer marketplace e-commerce such as Lazada, Shopee, Zalora, Lelong, eBay, Carousell, PrestoMall, and others are the top e-commerce platforms in Malaysia. They offer a lot of products with various categories, including fashion, food, and grocery, home and living, property and lifestyle, electronics, and travel. According

to the Malaysian Investment Development Authority [MIDA] (2020), the revenue for the Malaysian e-commerce market in 2019 shows the amount of US$3.68 billion (RM15.2 billion) shown by the data from the German online statistics portal Statista. There are 20 million online consumers in Malaysia in 2019 approximately and predicted will increase to 21.5 million by 2022 (Austrade, 2020). In the meantime, Malaysia has 50% of the population (16.53 million) of online shoppers, and the percentage of mobile users that have the intention to shop online is 62% (U.S. Embassies, 2019). According to Kemp & Moey (2019), most users of online shopping are between 16 to 64 years old, which is at 80 percent based on the data from GlobalWebIndex, as shown in figure 1.

Source: GlobalWebIndex (Q2 2019)

Figure 1.1: E-Commerce Activities in Malaysia

Shopee is one of the top applications that is being used among users (Ismail, 2017). More than fifty million users, of which four million Malaysian people installed Shopee since it was established in seven countries, including Thailand, Vietnam, Philippines, Singapore, Malaysia, Indonesia, and Taiwan (Ismail, 2017). According to Ismail (2017), "this

platform is designed to suit mobile users, and this app tries to emulate the buyers to have the experience like they in real malls which they able to ask anything to the sellers about the products in real-time using the chat function easily without revealing their private contact number" said Ian Ho, the managing director of Shopee. Shopee Pte. Ltd. has done a survey to more than 7,500 respondents to know the factor that determines citizens to shop on Shopee, and the result is discounts and flash sales by Shopee is an essential factor that influences Malaysians to online shopping while free shipping in the second and the last is the Lowest Price Guarantee programs (Ismail,2017). According to Lim et al. (2015), the online market in Malaysia still has a lack of trust, and reputable websites make most of Gen Y still have hesitation about online shopping. Facebook and Instagram are the applications that have been targeted to buy from online sellers by Gen Y.

1.3 PROBLEM STATEMENT

E-commerce applications can be categorised as a new phenomenon in the business world. In this era, technology is used in the main part of most industries. E-commerce applications are one of the technologies that have been used daily nowadays. Thus, the number of users in e-commerce applications in Malaysia has risen by decades. According to Md Johar and Ahmad Awalluddin (2011), Zerogrey Ltd conducted a survey, and, as an outcome, e-commerce acceptance is currently very high in the country. Most respondents, which are 38%, show their willingness to shop online soon. Since high technology and social media are currently available, the consumer should perhaps accept the e-commerce application. For example, students staying around the university should consider that it can be beneficial for them to use certain e-commerce applications. Unfortunately, numerous factors are found that affect the acceptance of the e-commerce application.

E-commerce applications have presented users with many incentives, but several considerations impact the adoption of consumers. For example, consumers were influenced by the perceived ease of use, perceived risk, perceived usefulness to accept the e-commerce application. Due to the risk of losing their personal information, financial information, and others, e-commerce applications lose the consumer's acceptance. In comparison, the use of e-commerce applications will be uncomfortable and new to certain consumers. While the rise of e-commerce applications is good for individuals who can be an electronic platform for commercial purchases, some consumers have protested about security concerns. They then refuse to accept the e-commerce application, which uses the internet as the forum for the online transaction to be enforced.

The effective purchase of products by using the e-commerce application affects the acceptance of students. Nowadays, people getting a product online is easier compared to in the past. E-commerce applications are attracting customers to the store to buy the product and ultimately converting them into sales. However, the problem facing e-commerce applications is that in addition to having a good product, it also requires a lot of knowledge, experience, trial and error, patience to be acceptable by people. Therefore, most of the sellers are not having their e-commerce applications to sell products and are more willing to start their online business through third-party platforms such as Lazada, 11street, and Shopee. This is because a new e-commerce application may face a lot of problems such as the risk of security, risk of leaking personal information and those problems are the reason why the students are not to accept using their e-commerce application.

E-commerce applications are growing exponentially as the concept of online entrepreneurship is accepted and applied by more and more SMEs. The idea of selling online may sound easy, especially when starting from a third-party market. But for

retailers, manufacturers, and business owners, e-commerce is a completely new business. In most cases, sellers will need professionals in product photography, graphic design, and content creation to do well in each part. Then there are social media marketing, search advertising, search marketing, website analysis, online business analysis. Traditional business owners may find it difficult to adapt to this industry, and they often just put their products online. People would accept great-looking or professional e-commerce applications. Meanwhile, the humble e-commerce applications are not acceptable by people because it causes people to worry about safety.

Malaysia's e-commerce applications grow rapidly, but compared with other Asian countries such as Taiwan and China, Malaysia is still far behind. The cybersecurity of Malaysia's e-commerce applications is far behind compared with other countries. Therefore, some companies launch e-commerce applications made by China manufacturers. This causes a huge problem because Malaysia is a multilingual country. Some people may not be understanding the language that launches in e-commerce applications. Besides, most people value the level of security or safety of an e-commerce application before they accept it. Although other countries' cybersecurity is good, it does not mean the level of security is the best.

According to the study of Chong (2019), the main factors that influence the acceptance of e-commerce applications have been described as perceived ease of use, perceived risk, and perceived usefulness. As such, in this review, the technology acceptance model and perceived risk were introduced to clarify the intent to accept the e-commerce application. Numerous longitudinal experiments have shown that the technology acceptance model and perceived risk are used to analyse the systematic relationships of variables affecting the acceptance of e-commerce applications by consumers. Therefore, this study examines the acceptance by customers of e-commerce

applications among higher education students in Kelantan. This research measures the acceptance of e-commerce applications through the use of perceived ease of use, perceived risk, perceived usefulness.

1.4 RESEARCH OBJECTIVES

1. To study the relationship between perceived usefulness towards acceptance of e-commerce applications among higher education students in Kelantan.
2. To examine the relationship between perceived ease of use towards acceptance of e-commerce applications among higher education students in Kelantan.
3. To determine the relationship between perceived risk towards acceptance of e-commerce applications among higher education students in Kelantan.

1.5 RESEARCH QUESTIONS

1. What is the relationship between perceived usefulness towards acceptance of e-commerce applications among higher education students in Kelantan?
2. What is the relationship between perceived ease of use towards acceptance of e-commerce applications among higher education students in Kelantan?
3. What is the relationship between perceived risk towards acceptance of e-commerce application among higher education students in Kelantan?

1.6 SIGNIFICANCE OF THE STUDY

The results of this study are important for further understanding the factors affecting the acceptance of e-commerce applications among higher education students in Kelantan.

The students, government, private sector, and researchers are the parties who are benefiting from this study.

This research allows students to learn about the variables affecting the acceptance of e-commerce applications. Nowadays, students are constantly seeking more and more efficient services provided by e-commerce applications. The students can enhance their understanding of e-commerce applications through this study. The students are competent to have proficient knowledge regarding e-commerce applications through this study. Besides, this research serves as a reference for students according to their needs and wants. The findings from this study provide pieces of information that can be considered to help to increase the acceptance rate of using e-commerce applications.

Next, this study helps the government to be more efficient in implementing the popularization of e-commerce applications to society. The purpose of the popularization of e-commerce applications to society is to improve the efficiency of the entire society. To accelerate the transformation of the general public and businesses to adopt e-commerce applications extensively, the government allocated RM450 million in the 2020 Budget to distribute e-wallet initiatives to the people (Alita, S., 2020). This proves that the government intends to encourage the popularization of e-commerce applications, which is a good policy because the era of cashless transactions has become a trend. This study is focusing on the factor affecting the acceptance of e-commerce applications among higher education students in Kelantan, which can be referred to and encourage students to accept the e-commerce applications in this cashless era.

Furthermore, this study helps the private sectors or non-government organizations to determine what are the elements that affect student acceptance of e-commerce applications. At present, there are more than 40 e-commerce application platforms with

relevant licenses in Malaysia, but there are probably less than 20 active platforms. This study helps to understand the factors that should be considered to improve the services provided. Thus, they can effectively monitor their business and increase the acceptance rate of e-commerce applications among users in Malaysia. Moreover, this study has provided insightful information and knowledge to the private sectors or non-government organizations in Malaysia. This information and knowledge will help them in planning marketing strategies to attract more users.

Besides, this study's findings can be a part of a reference to other researchers about the factors affecting the acceptance of e-commerce applications among higher education students in Kelantan. Future researchers will obtain benefits from the outcome of this study, especially research that is related to the e-commerce application. This study helps future researchers to further improve the quality of the research. It can show the researcher what the factors that affect student acceptance of e-commerce applications are.

1.7 DEFINITION OF TERMS

Table 1.1: Definitions of Terms

Terms	Definitions
E-Commerce Application	E-commerce focuses on business activities through an electronic medium such as sharing information, promoting business products, sharing information, promoting business products, customer services, and other related activities (Md Johar & Ahmad Awaluddin, 2011)
Perceived usefulness	Perceived usefulness is defined by someone who believes that if they improve their job performance, they will need to apply certain technology (Seng, Baharudin & Rong, 2011).
Perceived ease of use	Perceived ease of use is the extent to which a person believes that to be effortless and easy to use, a particular technology needed (Seng, Baharudin & Rong, 2011)

Perceived risk	Perceived risk is characterized as the potential for failure when engaged in online shopping in seeking the desired outcome; it is a combination of uncertainty with the probability of a serious outcome. (Ko et al., 2004)

1.8 SUMMARY

There are three chapters in this study. The first chapter basically explains the background of the study, problem statement, research objectives, research questions, and significance of the study. Chapter Two reviews previous studies related to the current study. Chapter Three discusses the methodology that is used in this study. Based on our research, basically, Chapter One discusses the factors affecting the acceptance of e-commerce applications among higher education students in Kelantan.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This study aims to examine the factors affecting the acceptance of e-commerce applications among higher education students in Kelantan. The independent variables (IVs) and dependent variable (DV) for this study have been defined and explained. Besides, the related literature on perceived ease of use, perceived risk, perceived usefulness, and acceptance of e-commerce applications have been reviewed in this chapter. The dependent variable and independent variables have been used as a conceptual framework. The conceptual framework was proposed to analyse the relationship between IVs and DV. This chapter ends with a chapter summary.

2.2 LITERATURE REVIEW

2.2.1 E-COMMERCE APPLICATIONS

E-commerce applications have changed the way people live their lives. E-commerce applications help to collect information about consumer behavior, preferences, needs, and buying patterns (Nandankar, 2017). E-commerce apps also allow the business to move this portion of the value chain to the online marketplace. (Sulaiman, 2000).

Electronic commerce applications promote the interaction between various parties involved in a network trade transaction, as well as the method of handling the data involved. (Yesha & Adam, 1996). According to Vasconcelos, Santos & Baldochi (2016), the important aspect of today's e-commerce applications is to meet the demands of thousands of consumers who present various desires, behaviours, and idiosyncrasies. The success of the application can be affected by the importance of satisfying the customer (Vasconcelos, Santos & Baldochi, 2016).

2.2.2 TECHNOLOGY ACCEPTANCE MODEL (TAM)

The theory of information systems that represents the users to take and use the technology is the technology acceptance model or TAM (Qinxiang & Liping, 2005). It was introduced by Davis (1986), and Fred Davis and Richard Bagozzi were developing this technology acceptance model (Davis 1989, Bagozzi, Davis & Warshaw 1992). According to Qinxiong and Liping (2005), many researchers and studies applied this TAM theory to illustrate how the act of users in accepting the technology. Davis (1986, 1989) popularized that perceived usefulness, perceived ease of use, attitude, and behavioural intention to construct the original technology acceptance model as shown in Figure 2.1. However, among all of that, perceived usefulness and perceived ease of use create the end-users trust in technology and then foresee their behaviour towards the technology and, lastly, conclude their acceptance (Qinxiang & Liping, 2005).

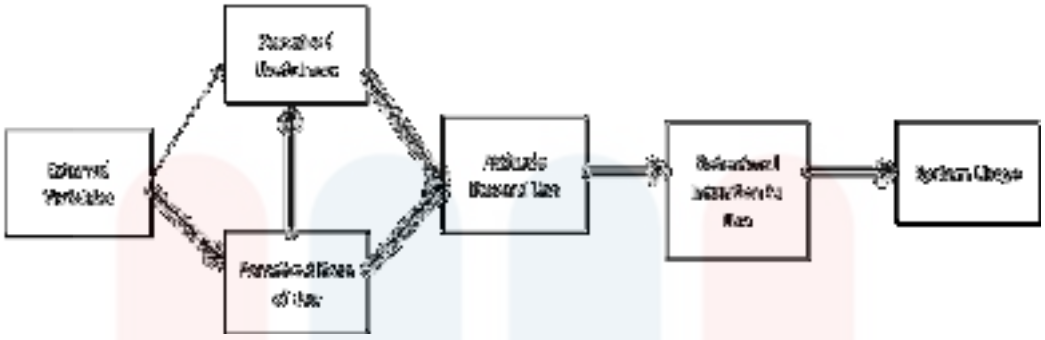

Figure 2.1: The Original Technology Acceptance Model (Davis,1986).

The first independent variable is perceived usefulness. According to Davis (1993), perceived usefulness is the perception of an individual that is able to complement or advance the performance using the new technology. Mathwick et al. (2001) represent that perceived usefulness uses the technology will increase job performance, and this is the same with Davis (1993).

The second is perceived ease of use. Perceived use is the degree of individual beliefs on how useful is using the technology (Davis et al., 1989). In addition, according to Davis et al. (1989), perceived ease of use is predicted to make the individual perceptions positive in using the technology rather than perceived usefulness.

This study has chosen the technology acceptance model because this theory is quietly famous and very attracted and supported as well among the researchers in the last few decades (Davis, 1989; Mathieson 1991; Taylor & Todd, 1995). Besides that, there are a lot of studies that relate to the TAM, and TAM was considered reliable, illiberal, and powerful by most of the researchers (Venkatesh & Davis, 2000). The research by Davis (1989) presents that perceived usefulness is related to both self-related and future consumption that is self-predicted, and perceived ease of use relate to current usage and future usage, but perceived use has greater interaction with system usage than perceived

ease of use (Qinxiang & Liping, 2005). Perceived ease of use affected the technology acceptance through perceived usefulness, and it is shown in Figure 2.2.

Figure 2.2: Illustrate how perceived ease of use accepted the technology through perceived usefulness.

The last independent variable is perceived risk. There is a new platform that exists, and it gives accommodations to the consumer purchasing things or services using the internet that we called online purchasing (Yong & Jing, 2009). The researcher represents the relationship that was formed between online shopping and the perceived risk of new shopping and the choice to buy the products or services using online shopping in previous research (Bathnagar, Misra & Rao, 2000). Many debates on the definition of perceived risk, but two major components have defined the perceived risk as to the probability of loss and unfavourable outcome feeling (Mitchell, 1999). According to Dowling (1986), perceived risk is related to purchasing decisions when people tend to search and choose the information of products first before they buy the products.

According to Jarvenpaa, Tractinsky & Vitale (2000), perceived risk able to have the negative impact of perceived usefulness on online shopping. Both perceived usefulness towards online shopping and perceived ease of use to shop online can be influenced negatively by perceived risk (Vijayasarathy & Jones, 2000). So, we can conclude that perceived risk is measured first before the user buys the products or use

services that they want by following their desires before perceived usefulness and perceived ease of use (Yong & Jing,2009).

2.3 HYPOTHESIS

2.3.1 THE RELATIONSHIP BETWEEN USEFULNESS AND THE ACCEPTANCE OF E-COMMERCE APPLICATIONS

The three most significant antecedents of consumer e-commerce application intent are suggested to be perceived utility, perceived ease of use, and perceived danger (Kim, Prabhakar, 2000). These constructs are created on the basis of the Technology Acceptance Model (TAM), which is used to study the behaviour of user acceptance of technology (Davis, 1989). However, the intention of the consumer's e-commerce application includes not only the intention to adopt e-commerce technology but also the intention to adopt the new concept of shopping or learning: making internet purchases. Therefore, for the study of consumer e-commerce application behaviour, perceived usefulness, perceived ease of use, and perceived risk need to be redefined and created.

Perceived usefulness (PU) is described in TAM as 'the degree to which a customer believes that implementing a specific technology will improve his or her job performance' (Davis, 1989). Perceived usefulness in the online world is about the understanding of the value of making transactions over the internet. Therefore, perceived usefulness is described in this study as the degree to which a person believes that it would generate value for him or her to make transactions over the internet (e-commerce). If customers experience a high degree of utility in making online transactions, they will actually make real online purchases. It is assumed that H1: There is a relationship between perceived

usefulness and the acceptance of e-commerce applications among higher education students in Kelantan.

2.3.2 THE RELATIONSHIP BETWEEN PERCEIVED EASE OF USE AND THE ACCEPTANCE OF E-COMMERCE APPLICATIONS

TAM defines perceived ease of use (PEU) as 'the degree to which a person believes that it will be free of effort to use the system' (Davis, 1989). Perceived ease of use is about the understanding of the ease of making transactions over the internet in the online world. Therefore, the perceived ease of use in this study is described as the degree to which an individual believes that it would be effort-free to make transactions over the internet (e-commerce). Perceived ease of use has been shown to have a positive effect on intent in technology acceptance research studies (Davis, Bagozzi & Warshaw, 1989). It is anticipated that perceived ease of use will have a positive impact on consumer intent for e-commerce applications in the online environment. For e-commerce, it is possible to moderate the conversion of perceived ease of use into application purpose by product form. As discussed earlier in this article, when purchasing services rather than products over the internet, consumers seem to have more worries and assumptions regarding the ease of use; this is attributed to the inseparability of production and usage of services. On the other hand, since it is easy to distinguish the production and consumption of products, internet transactions for goods are viewed as fewer complexes than those for services. Therefore, they appear to be less worried about the ease of use of e-commerce as individuals buy products over the internet. Thus, the relative ease of use of the online world plays a more important role in the purchasing decision-making of customers for services than for products. As a consequence, the favourable association between perceived ease of use and the actions of users in e-commerce apps would be more

sensitive to services than products. In other words, the favourable association between perceived ease of use and customer e-commerce apps may be magnified or moderated by product category.

H2: There is a relationship between perceived ease of use and the acceptance of e-commerce applications among higher education students in Kelantan.

2.3.3 THE RELATIONSHIP BETWEEN PERCEIVED RISK AND ACCEPTANCE OF E-COMMERCE APPLICATION

A study by Arshad (2015) categorized perceived risks into four types which are financial risk, security risk, time and convenience risk, and psychological risk. These four types of perceived risk are the key variables affecting the acceptance of e-commerce applications and are endorsed by some prior research.

Almousa (2011) claims that perceived risk will directly affect the people to accept e-commerce applications. They conducted a study to discover the relationship between perceived risk and the purpose of adopting applications for e-commerce. In that research, they figured out that the psychological risk will affect the utilization rate of the acceptance to an e-commerce application. The psychological risk is the major obstacle hindering the development of e-commerce applications. Therefore, a defective e-commerce application will cause a poor effect on a consumer's tranquillity or satisfaction. This uncertainty or stress may cause psychological risk, which in turn affects the acceptance of e-commerce applications.

Li and Huang (2009) pointed out that the perceived risk was negatively linked to the acceptance of e-commerce applications among customers. Apart from that, they mentioned that the acceptance of e-commerce applications is negatively linked to time

and convenience risk. Lack of convenience and time leads to the consumers being less activated in accepting e-commerce applications. Based on this situation, consumers will feel that it is very troublesome for them to use the e-commerce application because it wastes a huge amount of time and effort to confidence in analysing applications. The acceptance of consumers will go down when consumers take a certain time while using an e-commerce application for the entire process. Every consumer is trying to avoid or reduce this risk, and this will decrease the acceptance of consumers' e-commerce applications.

Based on the study of Chong (2019), perceived risk and acceptance of e-commerce applications are closely related; perceived financial risk is the prerequisite for accepting the e-commerce application. Most consumers give up using e-commerce applications when they feel that online information and transactions have high uncertainty. The consumers will feel that there is high risk; once consumers perceive the existence of a certain risk, they will become anxious and then not accept to use of e-commerce applications. The customers have to give their personal information and financial details when they use the e-commerce application. All the data revealed on the network could be exploited. Because of various reasons, consumers are unable to judge the pros and cons of an e-commerce application and thus refuse to use e-commerce applications. As far as the study is concerned, e-commerce applications are adopted by clients who believe that the level of perceived financial risk is low.

According to Arshad (2015), the security risk is negatively associated with the acceptance of e-commerce applications. The absence of security information on an e-commerce application will directly affect consumers' acceptance. Consumers may worry about the illegal dissemination of personal and financial information because network security is highly uncertain. This could influence their acceptance of e-commerce

applications because customers believe that e-commerce is unsafe to use. Consumers' acceptance to use, apply or adopt e-commerce applications is largely affected by a security risk. When the security risk is reduced to an acceptable consumer level or disappears completely, the consumer accepts the e-commerce application will increase.

In conclusion, all the above researches shown that perceived risk plays a vast position that determines human beings in using e-commerce applications. Consumers evaluate all the e-commerce applications and make final value judgments, forming a preference or forming an intention to use the e-commerce application. Therefore, this study aims to examine whether the perceived risk influences people to accept e-commerce applications.

H3: There is a relationship between perceived risk and the acceptance of e-commerce applications among higher education students in Kelantan.

2.4 CONCEPTUAL FRAMEWORK

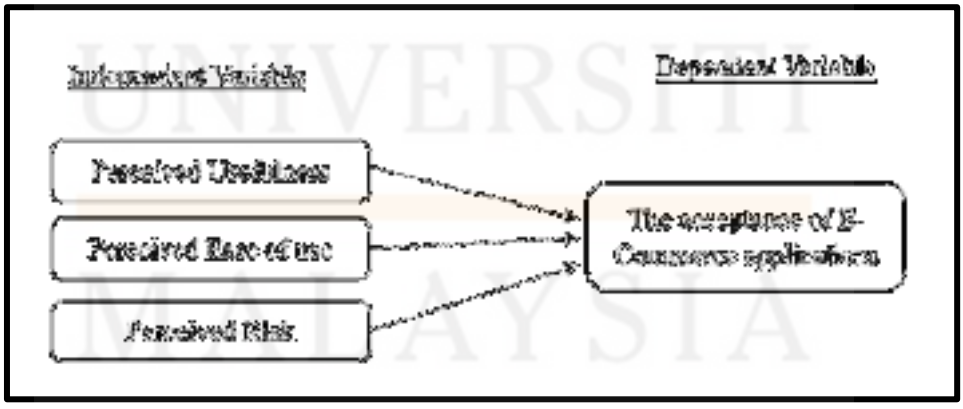

Figure 2.3: Conceptual Framework of The Acceptance of E-Commerce Applications Among Higher Education Students in Kelantan

The conceptual framework of the study is shown in Figure 2.3. The perceived ease of use, perceived risk, and perceived usefulness are the independent variables (IVs) for this study. The acceptance of e-commerce applications as the dependent variable (DV) to be tested for this particular study.

2.5 SUMMARY

The relevant previous studies on the variables in the current study were discussed in chapter two. It explains in detail how, using relevant studies and past research, each variable is formed. The literature reviews were covered the perceived ease of use, perceived risk, perceived usefulness, and the acceptance of e-commerce applications. The research framework has been presented. It is built for the purpose of examining the relationship between the dimensions of the technology acceptance model (IVs) and e-commerce application (DV). The next chapter is going to discuss the methodology.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

In this chapter 3, the researcher explains about methodology or procedures being selected to do this research. It includes the details about research design, the population and sample size that we target, types of sampling methods that are chosen, the procedure of data collection, research instrument in this research, plan for data analysis, and lastly, the summary of this chapter. The purpose of this research is to consider the elements that give affect the acceptance of e-commerce applications among UMK students.

3.2 RESEARCH DESIGN

The research design is important because it enables us to answer the research question with the evidence that was collected from the data. In this research, the cross-sectional design was chosen. The reason is the data that is collected just once in time, and it can save time rather than longitudinal research which is the data of this research are collected two or more times that in time and that takes a lot of time and it's costly as well. Besides that, this research study can be used in exploratory and descriptive research.

After that, the probability sampling technique that is used is simple random sampling to choose the respondents that are being targeted randomly. In this research, higher education students in Kelantan were picked in order to collect the data from them. The data gathered from them is the survey method because it is a structured way to collect the

data using the questionnaire. Since the covid-19 session, everyone must follow the Standard Operation Procedure (SOP) that is ruled by the government, so doing the survey on the internet is the right and safe way to survey. In order of that, this opportunity should be used to gather the data from the respondents to do this research without taking the risk.

Thus, the questionnaire using google forms was given to the respondents. It is the cheapest method and easy to use. In addition, it saves time and effort as well because the respondents can answer the questionnaire directly at any time, and anywhere they want, and the research did not have to search them and give the questionnaire to them manually. Besides, the questionnaire provided basically not too much and expected that the respondents were able to finish the questionnaire in not more than 20 minutes.

3.3 POPULATION

The target population in this research is the higher education students in Kelantan. They were selected as the target population as the researcher is studying in Kelantan. So, sharing the google forms link in the group is one of the ways to give them the questionnaire so they can answer it. Besides, they also can share it with their friends in other groups. The data from the Ministry of Higher Education (2021), shows that there are 54,247 total students in higher education. It is enough for the researcher to find the respondents due to the quantity of the students in the higher education level.

3.4 SAMPLE SIZE

The sample refers to the population variable. The subject is known as the sample participant, and the total number of subjects in the sample is known as the sample scale. Normally, the sample size is determined by the population. According to Krejcie & Morgan (1970), the researcher supposedly will use the population estimation method according to table 3.2 as a guide to the sample number. This is how the sample size grows as the population expands. The sample size will remain at a declining pace as it ultimately stays stable at a sample size of 384 and slightly more. The quality of the analysis and the outcome that was estimated before to the start of the study are the most important factors in determining the sample size. The decision differs from the statistical analysis of the analysis by either the confidence interval technique like estimation or the significance evaluation method. As a result, 381 respondents were involved as a sample in this study based on Krejcie and Morgan's sample size determination. The availability number of students would make it easier for researchers to obtain information and make a hypothesis for this study details on the subjects.

Table 3.2: Krejcie and Morgan's sample size determination

Table 3.1

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

Note: N is Population Size; S is Sample Size *Source: Krejcie & Morgan, 1970*

3.5 SAMPLING METHOD

The sampling strategy is broken into chance sampling and sampling with non-probability. A simple random sampling has been used by the researcher as it can make the researcher east to collect the data. The sampling of convenience is non-probability sampling. Convenience sampling extracts data from respondents that are readily available to the researcher (Etikan, Musa, & Alkassim, 2016).

For the researcher, a sample that is chosen randomly is what is called to be simple random sampling or a randomly chosen sample. Simple random sampling is a sample that is used to dodge bias and other undesirable impacts. The researcher needs to make sure that it is truly random. It is a procedure in which each element in the population has the same function to be selected as a sample. De Vaus (1985) lists the five necessary levels for a person in a simple random sampling.

1. Obtain a complete sampling frame.
2. Gives each member a special number.
3. Determine the sampling size.
4. Select members according to the specified size based on random number tables.
5. Select a member of the random number.

3.6 DATA COLLECTION PROCEDURE

For this research, online questionnaires are used to collect the data. A set of questionnaires has been assigned specifically to the higher education students in Kelantan. The questionnaire highlights the intent of the research, the study goals and acknowledges that the respondents' information is confidential.

3.7 RESEARCH INSTRUMENT

For this research, the researcher obtains the data by using online questionnaires for the instruments. A questionnaire is defined as one of the research instruments to help the researcher collect information from the respondents (Bhat, 2020). Questionnaires are the best and easy method to collect the information or data in quantitative research. Questionnaires should be clear from where the information has been used for the research. There are different types of measurement such as case study, survey, or questionnaire that can be used by researchers for their study depending on the nature of research that has been carried out (Umoh, 2019).

The questionnaires consist of three sections which are Section A, Section B, and Section C. Section A discussed demographic segmentation. A demographic profile is a market segment according to the respondent's age, gender, religion, race, and education

(Gigli, 2018). Section B focused on all the independent variables which are provided by the researchers as included in TAM. Section C discussed the dependent variable, which is the acceptance of e-commerce applications among higher education students in Kelantan.

At numeral 1 with the verbal comment, each of the scale items ranked from "strongly disagree" to the numeral 5 with the verbal statement "strongly agree." The researcher discovered that the full list of scale descriptors with a 5-point scale is very easy to interpret (Dawes, 2008). In addition to the seven or eleven-point scale, another study proposed a five-point scale to provide better data quality (Revilla, Saris, & Krosnick, 2014).

Table 3.3: The Five-point Likert Scale

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

A questionnaire was created using instruments created by Kaushik, Agrawal, & Rahman (2015), Davis (1989), Zhu, Lan & Chang (2017), Muda, Mohd & Salwana (2016), and Lee, Kim, and Law (2008). There is a division of the questionnaire into sections A, B, and C. In response to research goals, three components were generated in the data instrument. In table 3.3, all the elements are simplified and further clarified in the corresponding section.

Table 3.4: Questionnaire composition

SECTION	DIMENSION	NUMBER OF ITEMS	SOURCES

Section A	Demographic Profile	5	Kaushik, Agrawal, & Rahman (2015)
	Factors affecting the acceptance of e-commerce applications		
Section B	**Independent variable** Perceived usefulness	5	Davis (1989)
	Perceived ease of use	5	Davis (1989)
	Perceived risk	2	Zhu, Lan & Chang (2017)
		3	Muda, Mohd & Salwana (2016)
Section C	**Dependent variable** E-commerce applications	4	Lee, Kim, and Law (2008)
		1	Kaushik, Agrawal & Rahman (2015)

3.7.1 SCALE OF MEASUREMENT

Four forms, including the ordinal, nominal, ratio, and interval size, can be divided by the scale (Sekaran and Bougie, 2016). The nominal scale in section A has been used in this research, and the interval scale in Sections B and C has been used. A nominal scale is a scale that categorises entire classes and provides straightforward, categorised information about a variable of interest (Sekaran et al., 2016). The equality of the extent of the variations in the responses, the order, and the multipoint scale that taps the differences is an interval scale (Sekaran et al., 2016). The calculation of the Likert scale, which is from 1 to 5 (1= strongly disagree to 5= strongly agree), was measured.

3.7.2 QUESTIONS IN SECTION A OF THE QUESTIONNAIRE

The demographic profile of the respondents is the focus of Section A. The questions include gender, age, race, level of education, and experience in the use of respondents' e-commerce applications. The questions in this section are highlighted in Table 3.5.

Table 3.5: Questions Used in the Questionnaire - Demographic Profile section A.

	Items
1	Gender · Male · Female
2	Age · 19-21 · 22-24 · 25-27 · 28-30 · Other…
3	Race · Malay · Chinese · Indian · Other: _____

4	Education level · Diploma · STPM · STAM · Matriculation · Foundation · Degree · Master's Degree · PhD
5	Experience in using e-commerce applications (Shopee, Lazada, Carousel) in the last 6 months: · Never · Hardly once · 2-3 times · Over four times

3.7.3 QUESTIONS USED IN SECTION B AND C OF THE QUESTIONNAIRE

Sections B and C were structured to understand the acceptance of e-commerce applications among higher education students. In these sections, 20 items were created to quantify particular statements in each dimension - perceived usefulness, perceived ease of use, perceived risk, and in section c, which is the e-commerce application. In these sections, respondents are expected to indicate their degree of agreement on a five-point Likert scale ranging from one (1) to five (5) with 'strongly disagree' and 'strongly agree'. In Table 3.6, the items are shown.

Table 3.6: Questions in section B and C of the Questionnaire – Factors Affecting the Acceptance of E-Commerce Applications Among Higher Education Students

Dimensions	Supporting references	Items
Perceived Usefulness	Davis (1989)	1. Using e-commerce applications saves my time. 2. E-commerce applications enable me to shop at my fingertips. 3. Using e-commerce applications enhances the effectiveness of the shopping process. 4. Using e-commerce applications reduce my time spending on unproductive activities. 5. Overall, I found that e-commerce applications are useful in shopping online.
Perceived ease of use	Davis (1989)	1. It is easy to learn how to use e-commerce applications. 2. It is easy for me to remember on how to use e-commerce applications 3. I can become skilful from learning to use e-commerce application. 4. Using e-commerce applications give me greater control over my online shopping. 5. Overall, I found out the e-commerce applications is easy to use.
Perceived risk	Dastan & Gurler (2016)	1. I believe there is a high probability of losing a great deal in using e-commerce applications 2. I believe that overall riskiness of e-commerce applications is high.

	Muda, Mohd & Salwana (2016)	3. I believe that I cannot value the quality of the product directly by using e-commerce applications. 4. I believe by using the e-commerce applications, I'm lacking to interact with the salesperson. 5. I feel uncomfortable using the e-commerce applications which leads to stress and anxiety.
E-commerce application	Lee, Kim & Law (2008)	1. Using e-commerce applications are good idea. 2. Using e-commerce applications are advisable. 3. Using e-commerce applications are a pleasant idea. 4. I am enjoying using e-commerce applications.
	Kaushik, Agrawal & Rahman (2015)	5. I intend to use the e-commerce applications again in the future.

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3.8 DATA ANALYSIS

According to Bryman, A., and Cramer, D (2005), data analysis describes the operations such as establishing an audit analysis model allows for data verification, inspection, recalculation, and judgement. The goal of data analysis is to identify the internal rules of the research object by concentrating, extracting, and refining the information concealed in the data. Data analysis is the process of detailed research and generalization of data in order to extract useful information and form conclusions. Although the mathematical foundations of data analysis were laid in the early 20th century, it was not until the arrival of computers that practical operations were possible and data analysis became widespread. Data analysis is the product of the combination of

mathematics and computer science. In this study, the researcher uses descriptive analysis, a reliability test, and a Pearson correlation coefficient.

3.8.1 DESCRIPTIVE ANALYSIS

Descriptive analysis refers to the collation, overview, and calculation of a large number of data contained in the survey sample (Fisher, M. J., & Marshall, A. P, 2009). Inferential statistics are built on this framework. Descriptive statistics is a manner of summarising and expressing quantitative data in a way that displays data distribution characteristics. It is typically expressed using a graphic technique that is simple to comprehend and may detect some regularities in the distribution and trend of the quality characteristic value, making it useful for performing measurements. Thus, to understand the basic situation of the data, calculate the concentration characteristics and volatility characteristics of the data through descriptive analysis. The descriptive analysis is therefore often performed first in the research, and then the in-depth analysis is performed on the basis again. It is used to summarize and characterize data, usually the basis for further quantitative analysis of data, or an effective supplement to inferential statistical methods (Fisher, M. J., & Marshall, A. P, 2009).

3.8.2 RELIABILITY ANALYSIS

Reliability analysis refers to the application of logic, induction, and deduction principles and methods to analyse and study the possible failures of the system (Iida, Y, 1999). The objective of reliability analysis is to identify the stability and consistency with the instrument to measure the concept. Besides, reliability testing also uses for checking and making sure the data obtained from the questionnaire is reliable or not.

Cronbach's Alpha is used in testing the consistency of internal and measuring the scale of reliability in this research. According to Tavakol and Dennick (2011), if the result is more than 0.7, the internal consistency is considered reliable. The rule of the thumb for Cronbach's alpha coefficient value is shown in the following table.

Table 3.7: Rule of Thumb Cronbach's Alpha

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

Source: Stephanie (2014)

3.8.3 PEARSON CORRELATION

Pearson correlation is commonly known as Pearson product-moment correlation, and this also is the most common method to measure the correction. Its value ranges from

-1 to 1 and is used to calculate the Correlation between two variables, X and Y. This coefficient is extensively used in the natural sciences to evaluate the degree of Correlation between two variables. The figure between -1 to 1 shows as a result of the correlation coefficient, where -1 denotes a fully negative correlation between two variables and 1 denotes a perfectly positive correlation between two variables. The result is 0 if there is no linear relationship between the two variables. The rule of thumb for Pearson's coefficient value is shown in the following table.

Table 3.8: Rule of Thumb of Correlation Coefficient Size.

Coefficient range	Strength of Association
± 0.91 to ±1.00	Very strong
±0.71 to ±0.90	High
±0.51 to ±0.70	Moderate
±0.31 to ±0.50	Low
±0.00 to ±0.30	Slight, almost negligible

Source: Hinkle, Wiersma and Jurs (2003)

3.9 SUMMARY

This chapter discussed the research design used in this study. Population and sample study are also mentioned before further discussion in the research methodology. In this research, the quantitative method is chosen in terms of questionnaires, which were distributed to the respondents. A total of 200 sets of questionnaires were distributed for the higher education students in Kelantan.

CHAPTER 4

DATA ANALYSIS

4.1 INTRODUCTION

This chapter covers the results of the survey's data analysis, which included 384 respondents. The results were based on reliability analysis, descriptive analysis, and Pearson's correlation analysis.

4.2 RELIABILITY ANALYSIS (PILOT TEST)

Table 4.1: Results on reliability Cronbach's Alpha for the variables.

Variables	Number of items	Cronbach's Alpha before item deletion	Number of items after item deleted	Cronbach's Alpha after item deletion
Perceived Usefulness	5	0.705	5	0.705
Perceived Ease of Use	5	0.843	5	0.843
Perceived Risk	5	0.754	5	0.754
The acceptance of E-Commerce Applications	5	0.801	5	0.801

Table 4.1 reveals that the questionnaire's Cronbach's Alpha values were above the acceptable level (i.e., 0.70), with values ranging from 0.750 to 0.856. The first independent variable is Perceived Usefulness found to be statistically reliable (5 items; α = 0.705). The second variable, which is Perceived Ease of Use, showed good reliability (5 items; α = 0.843). The third independent variable, which is Perceived risk, showed acceptable reliability (5 items; α = 0.754), and the dependent variable, which is the acceptance of E-Commerce Applications, was found to be good reliable (5 items; α = 0.801).

The items in the data were unchanged as the Cronbach's Alpha value was considered suitable enough for further analysis.

4.3 DESCRIPTIVE ANALYSIS (DEMOGRAPHIC PROFILE)

The data from section A was subjected to a descriptive analysis in order to summarise the background information on the demographic profile of the respondents who took part in this survey.

4.3.1 Gender

Table 4.2: The Gender of Respondents

Gender	Frequency (n)	Percent (%)
Male	54	27
Female	146	73
Total	200	100

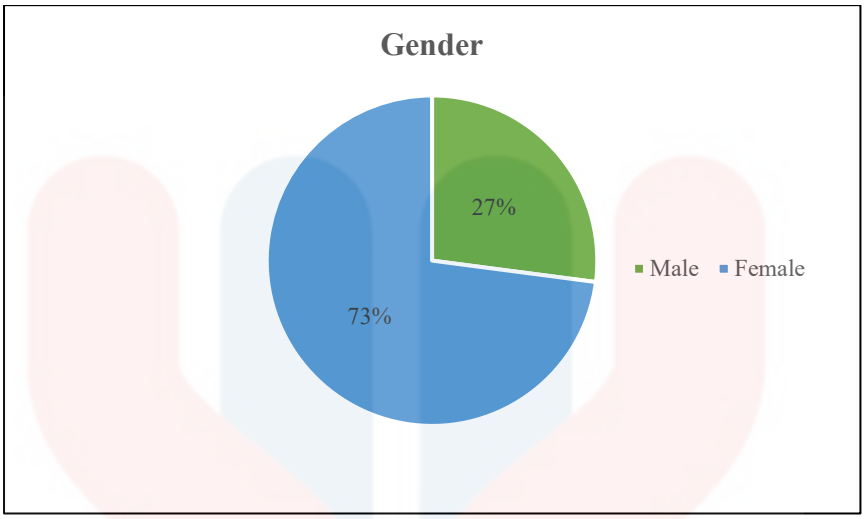

Figure 4.1: The Percentage of Gender

The pie chart illustrates the gender distributions of the respondents based on the given results. There was a total of 384 respondents. This study shows female respondents were higher with 73% (n=280) respondents as compared to male respondents with 27% (n=104).

4.3.2 Age

Table 4.3: The Age of Respondents

Age	Frequency (n)	Percent (%)
19-21	33	8.5
22-24	330	86.0
25-27	15	4.0
28-30	6	1.5
Total	384	100

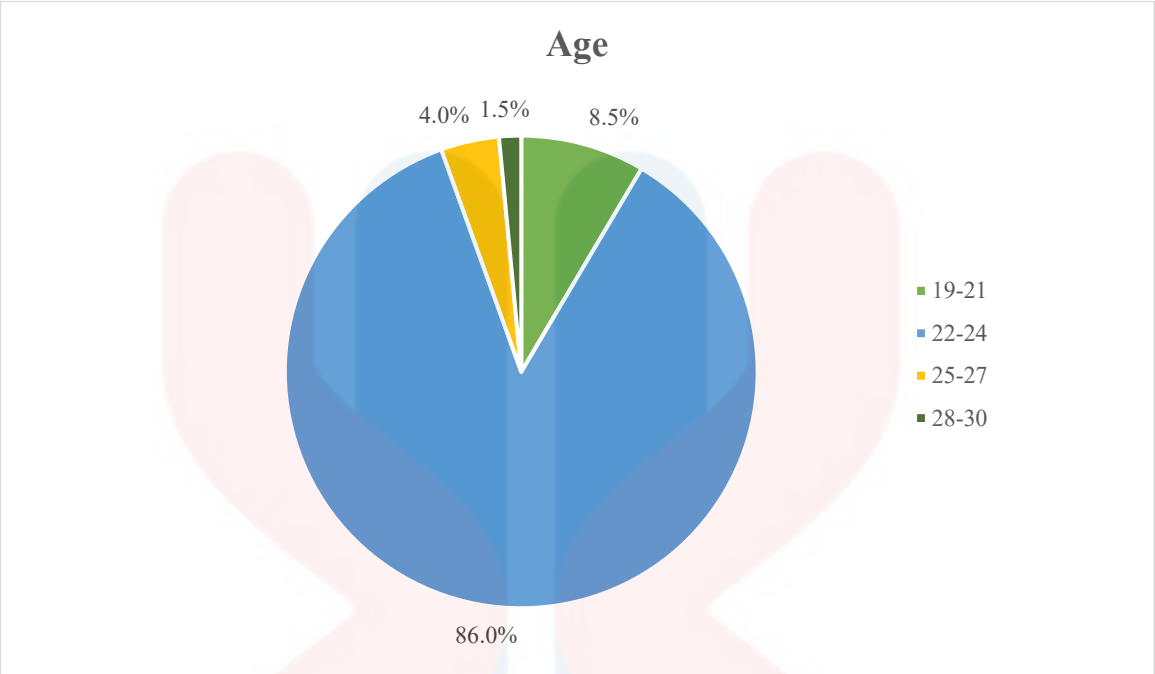

Figure 4.2: The Percentage of Age

Figure 4.2 shows the age distributions. The respondents were allocated into four age groups. The highest number of respondents were from a younger age of 22 to 24 years old, with 86.0% (n=330) respondents. The second highest group was in a group of 19 to 21 years old with 8.5% (n=33) respondents. Meanwhile, the group of 25 to 27 years old showed the respondents of 4.0% (n=15) respectively. The lowest group age was from 28 to 30 years old with 1.5% (n=6) respondents.

4.3.3 Race

Table 4.4: The Race of Respondents

Race	Frequency (n)	Percent (%)
Malay	259	67.5
Chinese	98	25.5
Indian	25	6.5

Others	2	0.5
Total	384	100

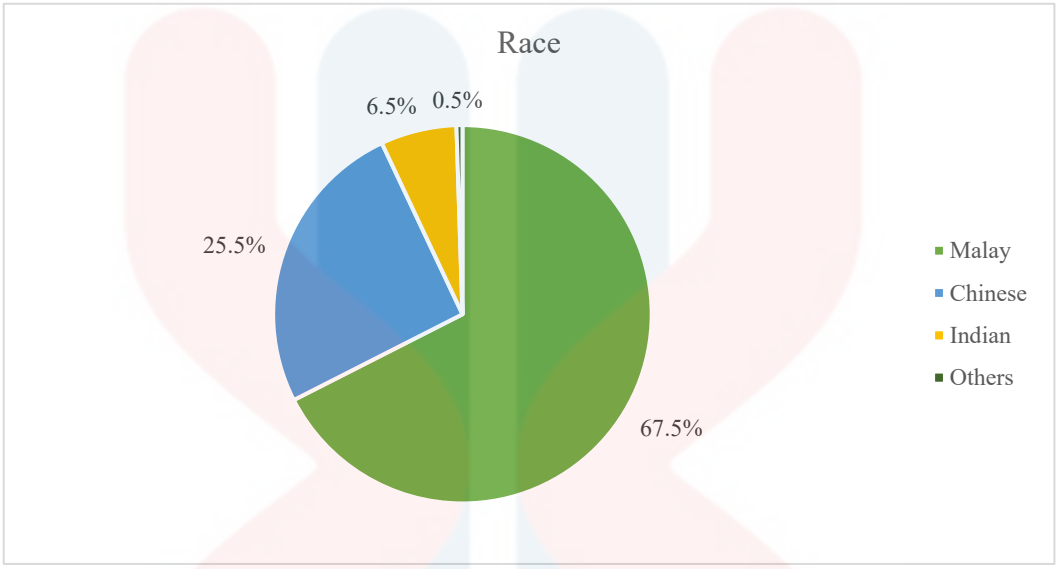

Figure 4.3: The Percentage of Race

Figure 4.3 shows race distribution among the respondents. The highest number of respondents in the race group who were involved in this study were Malay, with 67.5% (n=259) respondents, followed by Chinese with 25.5% (n=98). There were also Indian respondents with 6.5% (n=25), and the other races were only Bugis represented with 0.5% (n=2) of total respondents.

4.3.4 Education Level

Table 4.5: The Education Level of Respondents

Education Level	Frequency (n)	Percent (%)
Diploma	4	1.0
STPM	29	7.5
STAM	2	0.5
Matriculation	2	0.5

Foundation	2	0.5
Degree	336	87.5
Master's Degree	7	2.0
PhD	2	0.5
Total	384	100

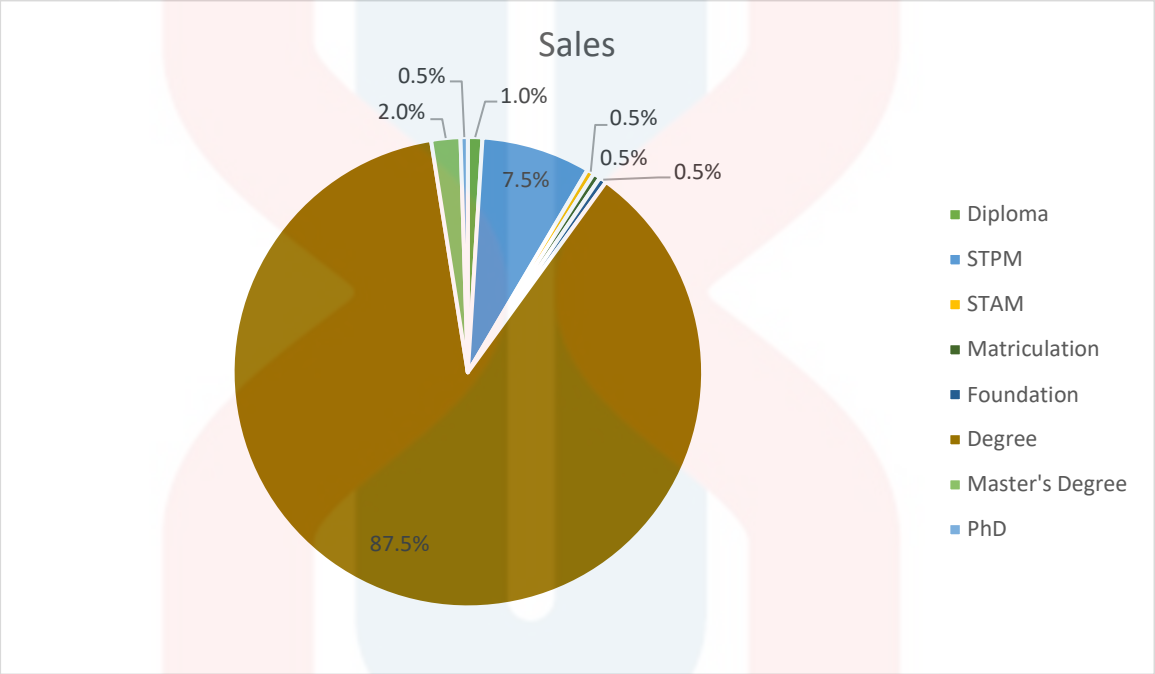

Figure 4.4: The Percentage of Education Level

Figure 4.4 represents the education level distributions among the respondents. The highest education level among the respondents was the degree, with 87.5% (n=336) respondents. Another education level which is stated as STAM, Matriculation, Foundation, and PhD, shared the same number of respondents, which were 0.5% (n=2) respondents respectively. STPM held the second highest number with 7.5% (n=29) respondents. Meanwhile, Diploma qualification represented 2.0% (n=4) respondents in this study.

4.3.5 Experience of Using E-Commerce Applications in the last 6 months

Table 4.6: Respondents' experience of using E-Commerce Applications in the last 6 months

Experience of using E-Commerce Applications in the last 6 months?	Frequency (n)	Percent (%)
Never	3	0.8
Hardly once	23	6.0
2-3 times	78	20.3
Over 4 times	280	72.9
Total	384	100

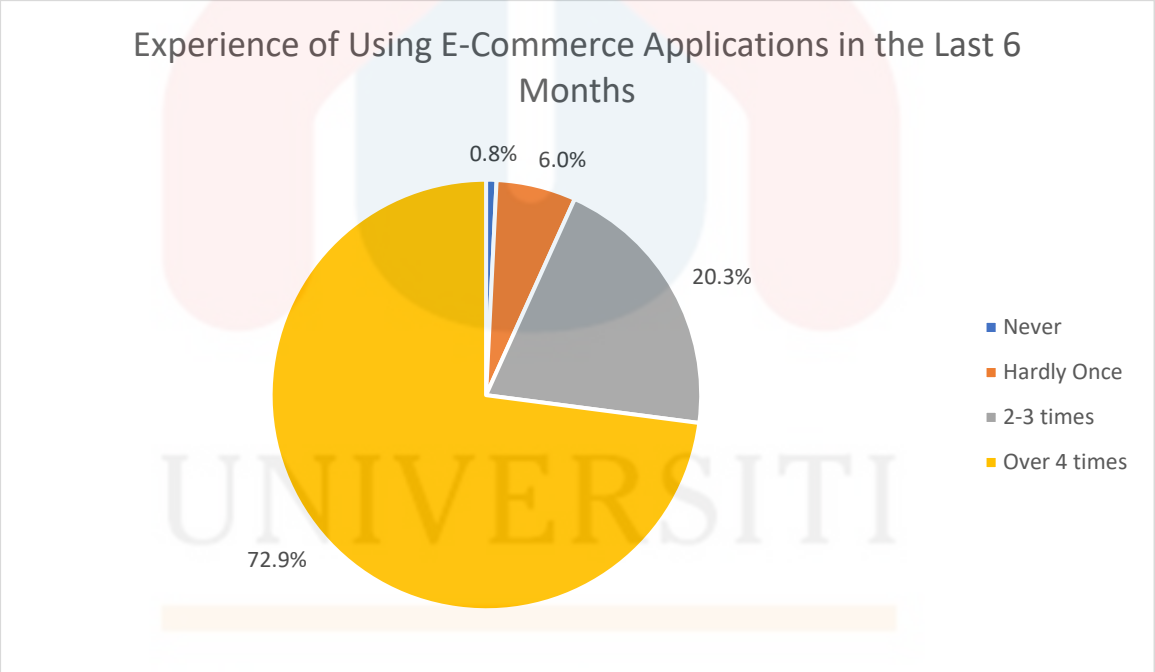

Figure 4.5: The Percentage of Respondents' experience of using E-Commerce Applications in the last 6 months

Figure 4.5 represent the experience of using E-Commerce Applications in the last 6 months. The highest number of respondents which was over 4 times with 72.9% (n=280) respondents. 2-3 times was the second highest number of respondents with

20.3% (n=78). Meanwhile, the hardly once respondents' using E-Commerce Applications had the third highest respondents with 6.0% (n=23). Lastly, the lowest was never with 0.8% (n=3) respondents in this study.

4.4 DESCRIPTIVE ANALYSIS (IV and DV)

Descriptive analyses consist of means and standard deviations based on a Five Likert – scale (1 = strongly disagree;2 = disagree;3 = neutral;4 = agree;5 = strongly agree) were calculated for all measured items of perceived usefulness, perceived ease of use, perceived risk and the acceptance of E-Commerce Applications. in the same meanings, the descriptive statistics are categorised into four section with align to those four dimensions and illustrated in Table 4.7 to Table 4.10.

4.4.1 Perceived Usefulness

Table 4.7: Descriptive statistics for perceived usefulness

No.	Item	Mean	Std. Deviation
B1	Using E-Commerce applications save my time.	4.83	0.429
B2	E-Commerce Applications enables me to shopping at my fingertips	4.83	0.441
B3	Using E-Commerce Applications enhances the effectiveness on shopping process	4.75	0.538
B4	Using E-Commerce Applications reduce my time spending on unproductive activities	4.68	0.690
B5	Overall, I found that the E-Commerce Applications are useful in shopping online	4.76	0.555

Table 4.7 shows the mean ranged for the perceived usefulness is from 4.68 to 4.83 and the standard deviation is from 0.429 to 0.690. There were five (5) questions, with item B1 and B2 having the highest mean of 4.83 agree which were on the statement 'Using E-Commerce Applications save my time' and 'E-Commerce Applications enables me to shopping at my fingertips' respectively. Meanwhile, the lowest mean with 4.68 was for the item B3 agree on the statement 'Using E-Commerce Applications reduce my time spending on unproductive activities'. The mean values for the other two (2) items for B3 and B5 were 4.75 and 4.76 discretely.

4.4.2 Perceived Ease of Use

Table 4.8: Descriptive statistics for Perceived Ease of Use

No.	Item	Mean	Std. Deviation
B1	It is easy to learn how to use E-Commerce Applications	4.75	0.519
B2	It is easy for me to remember on how to use e-commerce applications.	4.79	0.510
B3	I can become skilful from learning to use e-commerce application.	4.72	0.561
B4	Using e-commerce applications give me greater control over my online shopping.	4.67	0.727
B5	Overall, I found out the e-commerce applications is easy to use.	4.79	0.497

Table 4.8 shows the mean ranged for the perceived ease of use is from 4.67 - 4.79 and standard deviation is from 0.497 – 0.727. There were five (5) questions, with the item B2 and B5 having the highest mean of 4.79 agree on the statement 'It is easy for me to

remember on how to use E-Commerce Applications' and 'Overall, I found out the E-Commerce Applications is easy to use'. Meanwhile, the lowest mean with 4.67 was for the item B4 agree on the statement 'Using E-Commerce Applications give me greater control over my online shopping'. The mean values for other two (2) items for B1 and B3 were 4.75 and 4.72 respectively.

4.4.3 Perceived Risk

Table 4.9: Descriptive analysis for Perceived Risk

No.	Item	Mean	Std. Deviation
B1	I believe there is a high probability of losing a great deal in using e-commerce applications.	4.42	0.995
B2	I believe that overall riskiness of e-commerce applications is high.	4.48	0.896
B3	I believe that I cannot value the quality of the product directly by using e-commerce applications.	4.65	0.696
B4	I believe by using the e-commerce applications, I'm lacking to interact with the salesperson.	4.55	0.823
B5	I feel uncomfortable using the e-commerce applications which leads to stress and anxiety.	4.18	1.194

Table 4.9 shows the mean ranged for the attitude towards usage is from 4.18 – 4.65 and standard deviation is from 0.696 – 1.194. There were five (5) questions, with the item B3 having the highest mean of 4.65 agree on the statement 'I believe that I cannot value the quality of the product directly by using E-Commerce Applications'. Meanwhile, the lowest mean with 4.18 was for the item B5 agree on the statement that 'I feel uncomfortable using the E-Commerce Applications which leads to stress and anxiety'.

The mean values for other three (3) for B1, B2 and B4 were 4.42, 4.48 and 4.55 respectively.

4.4.4 The Acceptance of E-Commerce Applications

Table 4.10: Descriptive analysis for the acceptance of E-Commerce Applications

No.	Item	Mean	Std. Deviation
B1	Using e-commerce applications are good idea.	4.74	0.504
B2	Using e-commerce applications are advisable.	4.73	0.566
B3	Using e-commerce applications are a pleasant idea.	4.74	0.514
B4	I am enjoying using e-commerce applications.	4.69	0.615
B5	I intend to use the e-commerce applications again in the future.	4.74	0.534

The mean and standard deviation for the items used to measure the acceptance of e-commerce applications are shown in table 4.10. The mean ranged for the acceptance of e-commerce applications is from 4.69 – 4.74 and standard deviation is from 0.504 – 0.615. There were five (5) questions measured with the highest mean of 4.74 agree for the item B1, B3 and B5 on the statement 'Using e-commerce applications are good idea', 'Using e-commerce applications are a pleasant idea' and 'I intend to use the e-commerce applications again in the future. Meanwhile, the lowest mean with 4.69 was for the item B4 agree on the statement that 'I am enjoying using e-commerce applications. The mean values for other item for B2 was 4.73 with the statement 'Using e-commerce applications are advisable'.

4.5 PEARSON CORRELATION ANALYSIS

Table 4.11 shows the results of the correlation analysis among perceived usefulness, perceived ease of use, perceived risk and the acceptance of e-commerce applications.

Table 4.11: Results of Pearson correlation analysis

	Perceived Usefulness	**Perceived Ease of Use**	**Perceived Risk**	**Acceptance of E-Commerce Applications**
Perceived Usefulness	1	0.849**	0.523**	0.864**
Perceived Ease of Use	0.849**	1	0.591**	0.741**
Perceived Risk	0.523**	0.591**	1	0.543**
Acceptance of E-Commerce Applications	0.864**	0.741*	0.543**	1

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

Table 4.11 shows that perceived usefulness and the acceptance of e-commerce applications were statistically significant correlated, r=0.864. According to the rule of thumb, this value represents a very strong positive correlation.

The second Correlation is between perceived ease of use and the acceptance of e-commerce applications. The r-value is 0.741. Based on Dennis, Hinkle, Wiersma, Stephen, and Jurs (2003), The correlation coefficient revealed a strong positive relationship between e-commerce application acceptance and ease of use.

Next, the Correlation continues to correlate between perceived risk and the acceptance of e-commerce applications. Result shows that r-value is 0.543. According to the rule of thumb, this value represents a moderate correlation.

As a summary, perceived usefulness, perceived ease of use and perceived risk were significantly correlated with the acceptance of e-commerce applications, but with high positive correlation relationship.

4.6 CHAPTER SUMMARY

To sum up, the data analysis presented in this chapter included reliability analysis, descriptive analysis, and Pearson correlation. The next chapter will discuss the discussion and conclusion in this research.

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1 INTRODUCTION

In this chapter, the results of analysis in previous chapter will be explored in greater depth. The research objectives of this study are as the following:

1. To study the relationship between perceived usefulness towards acceptance of e-commerce applications among higher education students in Kelantan.

2. To examine the relationship between perceived ease of use towards acceptance of e-commerce application among higher education students in Kelantan.

3. To determine the relationship between perceived risk towards acceptance of e-commerce applications among higher education students in Kelantan.

The research questions of this study are as the following:

1. What is the relationship between perceived usefulness towards acceptance of e-commerce applications among higher education students in Kelantan?

2. What is the relationship between perceived ease of use towards acceptance of e-commerce application among higher education students in Kelantan?

3. What is the relationship between perceived risk towards acceptance of e-commerce application among higher education students in Kelantan?

Besides, the limitations of this study and the recommendations for future research will be discussed in this chapter.

5.2 DISCUSSION OF FINDINGS

5.2.1 Perceived Usefulness

Research Objective 1: To study the relationship between perceived usefulness towards acceptance of e-commerce applications among higher education students in Kelantan.

Research Question 1: What is the relationship between perceived usefulness towards acceptance of e-commerce applications among higher education students in Kelantan?

According to the Pearson Correlation analysis (Table 4.11), the independent variable (perceived usefulness) had a strong positive relationship with the acceptance of e-commerce applications. The value of r ranges between 0.7 to 0.9 shows a strong positive correlation. Based on the result, perceived usefulness and the acceptance of e-commerce applications were statistically significant correlated, r=0.864.

Based on the prior research by Zheng, C and Geetha, S (2019), it was discovered that, when compared to face-to-face transactions in traditional stores, perceived usefulness leads to consumers making online purchases from virtual stores through e-commerce applications. It was also shown that perceived usefulness has a strong positive impact on consumers' online purchases through e-commerce applications because it provided them with a variety of options and conveniences. The study was carried out using Pearson Correlation analysis, and the questionnaire was distributed to 381 respondents. It demonstrates that perceived usefulness has a strong positive association (r=0.805) with

consumers' online purchases made via e-commerce applications. Consumers accept e-commerce applications because of their usefulness, such as the ability to make online purchases at any time and from anywhere.

In conclusion, the research objective "To study the relationship between perceived usefulness towards acceptance of e-commerce applications among higher education students in Kelantan" is achieved. While the research question "What is the relationship between perceived usefulness towards acceptance of e-commerce applications among higher education students in Kelantan?" is also answered through this research.

5.2.2 Perceived Ease of Use

Research Objective 2: To examine the relationship between perceived ease of use towards acceptance of e-commerce application among higher education students in Kelantan.

Research Question 2: What is the relationship between perceived ease of use towards acceptance of e-commerce application among higher education students in Kelantan?

According to the Pearson Correlation analysis (Table 4.11), the independent variable (perceived ease of use) had a strong positive relationship with the acceptance of e-commerce applications. The value of r ranges between 0.7 to 0.9 shows a strong positive correlation. Based on the result, perceived ease of use and the acceptance of e-commerce applications were statistically significant correlated, r=0.741.

Based on the prior research by Manwaluddin, I. I., Teng, L. C., Johari, A., Baharudin, M. F., and Suhaimi, M. H (2018), it was discovered that, when consumers find it difficult to use e-commerce application, they are less interested in making an online purchase. The

study shown that perceived ease of use has a positive impact on consumers' online purchases through e-commerce applications because it is easy to use and convenience to them. The study was carried out using Pearson Correlation analysis, and the questionnaire was distributed to 384 people. It demonstrates that perceived ease of use has a moderate positive association (r=0.614) with consumers' online purchases made via e-commerce applications. The way to succeed in e-commerce applications is to keep the website as simple as possible. This is due to the fact that people choose to shop online using an e-commerce application because it allows them to make quick mobile payments and avoid paying with cash.

In conclusion, the research objective "To examine the relationship between perceived ease of use towards acceptance of e-commerce application among higher education students in Kelantan" is achieved. While the research question "What is the relationship between perceived ease of use towards acceptance of e-commerce application among higher education students in Kelantan?" is also answered through this research.

5.2.3 Perceived Risk

Research Objective 3: To determine the relationship between perceived risk towards acceptance of e-commerce applications among higher education students in Kelantan.

Research Question 3: What is the relationship between perceived risk towards acceptance of e-commerce application among higher education students in Kelantan?

According to the Pearson Correlation analysis (Table 4.11), the independent variable (perceived risk) had a moderate positive relationship with the acceptance of e-commerce applications. The value of r ranges between 0.5 to 0.7 shows a moderate positive correlation. Based on the result, perceived risk and the acceptance of e-commerce applications were statistically significant correlated, r=0.543.

Based on the prior research by Chong, T. Y (2019), it was discovered that perceived risk plays a vast position that determines human beings in using e-commerce applications. It was also shown that perceived risk has a positive impact on consumers' online purchases through e-commerce applications because the level of perceived risk of e-commerce application companies in Malaysia is high. Consumers accept e-commerce applications because of the completion of security information on an e-commerce application. Apart from that, when the security risk is reduced to a consumer acceptable level or disappears completely, the consumer accepts the e-commerce application increase.

In conclusion, the research objective "To determine the relationship between perceived risk towards acceptance of e-commerce applications among higher education students in Kelantan" is achieved. While the research question "What is the relationship between perceived risk towards acceptance of e-commerce application among higher education students in Kelantan?" is also answered through this research.

5.3 LIMITATIONS OF THE STUDY

The objectives of this study discussed about the relationship between perceived usefulness to the acceptance of e-commerce applications, the relationship between perceived usefulness and the acceptance of e-commerce applications and the relationship

between perceived risk and the acceptance of e-commerce applications. However, there were some limitations in this study.

This study only focused on three independent variables which are perceived usefulness, perceived ease of use and perceived risk. Thus, it is limited to the researchers to explore others factors.

Besides that, the research focused on the higher education students in Kelantan and its limits the acceptance of e-commerce applications in the other hospitality industry such as the graduated student and the employed people.

Lastly, the study's primary data was collected using online questionnaire only. Researchers were unable to determine the respondents' honesty while answering the questionnaire using this method. The respondents viewed the questions in a variety of ways and answered to each one based on their interpretation. For example, what is 'neutral' to the respondents maybe 'agree' or 'disagree' to the others. Hence, there is a level of bias and subjectivity that may not be acknowledged.

5.4 RECOMMENDATIONS

5.4.1 Theoretical Recommendations for Future Research

This research has examined, TAM in regards to the "Acceptance of E-commerce applications among students in Kota Bharu, Kelantan". This research had shown that variables of TAM, which are perceived ease of use (independent variable), perceived usefulness (independent variables), and attitude towards usage (moderating variables) were significantly correlated with the acceptance of e-commerce application among higher education students in Kelantan (dependent variables), and with high positive

correlation relationship. The Pearson's Correlation value (r value) are 0.805 respectively. As for recommendation, Universities can review the result of this research and take concern on these determinant factors. The finding in this research may contributes advantages to their decision-making process. Study the consumers acceptance of e-commerce applications is to better understand and enhance the networking. The reason is different consumers will have different behavior and acceptance level towards the applications of e-commerce.

Furthermore, it is encouraged to explore and investigate another research framework that would influences the consumers' acceptance of e-commerce applications among students in the hospitality industry for future research. For example, theory of planned behavior (TPB) that consists different variable from TAM variable and it could influence the similar dependent variable at the same time. Ajzen (1991) has identified the variables, which are attitude toward the behavior (independent variable), subjective norm (independent variable), perceived behavioral control (independent variable), intention (moderating variable), and behavior (dependent variable). TPB is a unidirectional model that has been used to examine behavior from measures of behavioral intention at one point in time.

5.4.2 Methodology Recommendations for Future Research

It is strongly advised that in future study on this topic, the quantitative method rather than the qualitative method be used to obtain data from respondents. This is due to the fact that the chosen population that is from higher education students in Kelantan. The data for this study was gathered through the use of online questionnaires. As a result, future study should employ this strategy because the results can be readily demonstrated

using the data acquired. Meanwhile, the findings would be more relevant, trustworthy, and applicable to a bigger population.

In addition, the future research can be conducted by enlarge the number of sample size from new higher education students that studied in Kelantan. Increasing the sample size allows for the development of final results at a higher level of research inquiry.

5.4.3 Practical Recommendations for Future Research

Additionally, for practical recommendation the researcher suggests websites provide detailed information for e-commerce usage. The intention to use e-commerce for certain group of customers might be low due to its complexity and difficulty. Thus, it is important that trained staffs is provided on site to assist customers who face difficulties in using a newer type of technologies. Moreover, the researcher suggests to incentive customers to use e-commerce as a way of stimulate technology adoption. This incentive will shorter customers' going out time and provide better customer experience.

5.5 SUMMARY

In this chapter 5, it discussed more about findings of this study which is perceived usefulness, perceived ease of use and perceived risk besides elaborate how each of that relates towards acceptance of e-commerce application among students in Kota Bharu following research objectives and research questions and conclude whether it is achieved or not. In addition, the limitations of this study also were elaborated such as one of the limitations is its only targets the higher education students in Kota Bharu Kelantan. Besides of that, the recommendations that were suggested for future research has three types which is theoretical recommendations, methodology recommendations and

practical recommendations and all of that were explained well in this chapter. In conclusion, this chapter is basically elaborating more about the previous chapter, recognized the limitations in this study and analysed the recommendations that required for better research in the future.

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APPENDICES

QUESTIONNAIRE

SECTION A: DEMOGRAPHIC

1. Gender (male/female)
2. Age (19-21, 22-24, 25-27, 28-30, other...)
3. race (Malay. Chinese, Indian, other…)
4. education level (diploma, STPM, STAM, Matriculation, Foundation, Degree, Master's Degree, PhD)
5. Experience in using e-commerce applications (Shopee, Lazada, Carousel) in the last 6 months (Never, Hardly Once, 2-3 times, over 4 times)

SECTION B AND C: FACTORS AFFECTING THE ACCEPTANCE OF E-COMMERCE APPLICATIONS AMONG HIGHER EDUCATION STUDENTS

QUESTION 1-5: PERCEIVED USEFULNESS

1. Using e-commerce applications saves my time.
2. E-commerce applications enable me to shop at my fingertips.
3. Using e-commerce applications enhances the effectiveness of the shopping process.
4. Using e-commerce applications reduce my time spending on unproductive activities.
5. Overall, I found that e-commerce applications are useful in shopping online.

QUESTION 6-10: PERCEIVED EASE OF USE

6. It is easy to learn how to use e-commerce applications.
7. It is easy for me to remember on how to use e-commerce applications
8. I can become skilful from learning to use e-commerce application.
9. Using e-commerce applications give me greater control over my online shopping.
10. Overall, I found out the e-commerce applications is easy to use.

QUESTION 11-15: PERCEIVED RISK

11. I believe there is a high probability of losing a great deal in using e-commerce applications
12. I believe that overall riskiness of e-commerce applications is high.
13. I believe that I cannot value the quality of the product directly by using e-commerce applications.
14. I believe by using the e-commerce applications, I'm lacking to interact with the salesperson.
15. I feel uncomfortable using the e-commerce applications which leads to stress and anxiety.

QUESTION 16-20: THE ACCEPTANCE OF E-COMMERCE APPLICATIONS

16. Using e-commerce applications are good idea.
17. Using e-commerce applications are advisable.
18. Using e-commerce applications are a pleasant idea.
19. I am enjoying using e-commerce applications.
20. I intend to use the e-commerce applications again in the future

H22

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