FACTORS CONTRIBUTING TO ONLINE PURCHASE FRAUD IN MALAYSIA

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A final year project submitted in partial fulfilment of the requirement for the degree of

BACHELOR OF ECONOMICS (HONS)
FINANCIAL ECONOMICS

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE
DEPARTMENT OF ECONOMICS

SEPTEMBER 2022

DECLARATION

We hereby declare that:

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

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

(3) Equal contribution has been made by each group member in the process completing the research project.

(4) The word count of this research report is 17121 words.

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Date: 16th SEPTEMBER 2022

ACKNOWLEDGEMENT

We would like to take this opportunity to express our gratefulness towards the people who have helped us throughout the research project. Without their guidance and time, this research project could not be completed.

First of all, we deeply appreciate our research supervisor, Dr. Au Yong Hui Nee, for providing help and guidance for our research projects. In each discussion, she provided useful comments, shared her knowledge and corrected our mistakes. Her suggestions and opinions gave us a lot of encouragement and helped us successfully completed the research project.

Secondly, we would like to indicate appreciation to all the respondents who spent their precious time fill up the questionnaire. Their response is a key factor in the success of our research project. Without their valuable information and necessary data, we may not be able to complete this research paper. Their cooperation makes it easier for us to collect and analyse data.

In addition, we would like to express our appreciation to those who contributed to our research projects, such as lecturers, tutors, classmates and family members. We appreciate the support and knowledge that provided by our lecturers and tutors; sharing of our classmates; financial and spiritual support from our family members; and the facilities provided by Universiti Tunku Abdul Rahman (UTAR).

Last but not least, we are grateful with our group members for the cooperation, tolerance and mutual understanding throughout the research process. With the contributions of all members, we have successfully completed our research project on time.

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PREFACE

This dissertation was submitted by the research group consists of four members of students in partial fulfilment of requirements of Bachelor of Economics (Honours) Financial Economics, Faculty of Business and Finance as the final thesis for UBEZ3026 Undergraduate Project in Universiti Tunku Abdul Rahman (UTAR). The researchers are contented with the completion of this report project with the title of Factors Contributing to Online Purchasing Fraud in Malaysia as the final year project.

In the research study, the five important independent variables are consumer online shopping behavior, e-commerce technology, the virtual quality of network, e-commerce law, and hours spent online. Consumer online shopping behavior, e-commerce technology, e-commerce law and hour spent online have significant relationship towards online purchase fraud in Malaysia.

ABSTRACT

With the development of digitization and technology, e-commerce has gradually emerged and expanded, contributing to economic growth. As Malaysia is trying to elevate its economic status to a developed country, Malaysia should consider maintaining a safe environment for the e-commerce sector. Therefore, this study is to examine the factors contributing to online purchase fraud in Malaysia such as consumer online shopping behaviour, e-commerce technology, the virtual quality of network, e-commerce law, and hours spent online. 500 questionnaires were distributed through Google Form targeting people in different states in Malaysia using the judgement sampling techniques. In this study, several analysis techniques have been used to test hypothesis such as descriptive analysis, scale measurement, inferential analysis and multiple linear regression. The result indicates that consumer online shopping behaviour, e-commerce technology, e-commerce law, and hours spent online have significant influence on online purchase fraud whereas the virtual quality of network has insignificant relationship on online purchase fraud.

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

This research paper will explore the factors contributing to online purchase fraud such as consumer online shopping behaviour, e-commerce technology, the virtual quality of the network, e-commerce law and hours spent online. The connection between the dependent variable and independent variables will be studied to achieve this research's goal. This research is conducted with the aim to evaluate the factors contributing to online purchase fraud in Malaysia. In this chapter, we will provide an introduction of our research, including research background, problem statement, research objective, research question, hypothesis of study and significance of the study. Structure of the chapter will highlight the point of each chapter.

1.1 Research Background

The digital economy is defined as an economic activity that is conducted via the use of electronic communication and digital technology to offer products and services. There are three main components of the digital economy, namely e-business infrastructure, e-business and e-commerce. E-business infrastructure is all about technical means, software products, telecommunications, networks and human capital. E-business is a way of doing business, which is the procedure that the organization implements by using information and communications technology (Urunov et al., 2021).

With the development of digitization and technology, e-commerce emerges and grows gradually as well as helps the growth of the economy. E-commerce refers to electronic transactions, which may be defined as the purchasing and selling of items

and services as well as the transmission of cash, money, data, and information pertaining to commercial transactions over the internet and information and communication technology (ICT). Essentially, e-commerce enables the purchase and sale of actual goods and services online, facilitating economic transactions for all types of enterprises and customers. They will be able to sell and buy at any time and from any location. E-commerce is beneficial for lowering production costs, boosting productivity, enhancing corporate communication, assuring the quality of goods and services, and generally improving company performance. It contributes to the development of fresh ideas and provides an innovative means of doing business. As a consequence, e-commerce has a profound and pervasive effect on businesses (Meher & Burhan, 2020).

The introduction of e-commerce facilities has made shopping easy and convenient for people. Online sellers and shoppers are increasing every day, especially during Covid-19 pandemic. Individuals have the option of purchasing millions of products through internet shopping with a variety of options in models, colours, and sizes of items. These items may be picked from the comfort of their own home utilising a computer or a smartphone equipped with an internet connection. The online merchants provide door-to-door delivery through their own or third-party courier services, as well as installation and after-sales services. These help consumers to save a lot of time, money, and energy without having to physically go to the shops. Online merchants accept payment through a variety of methods, including debit cards, credit cards, internet banking and cash on delivery. However, although online shopping platforms have a strong security system in place, certain hackers and unethical individuals can commit fraud by swindling money from bank accounts, credit cards, debit cards, shipping faulty items, stealing bank account details, and others (Rukmani & Jegan, 2019).

Typically, the word 'fraud' refers to theft, corruption, conspiracy, embezzlement, money laundering, bribery, and extortion. Fraud is defined as the dishonest use of deceit to achieve an advantage for oneself and/or to cause a loss for others (*Fraud risk management - CIMA,* 2009). According to the government of Malaysia's Official Portal illustrates that computer-related crimes are cyber fraud,

telecommunication scams, online dating fraud, e-shopping fraud, e-finance fraud, property violations, and intellectual fraud.

Online shopping fraud involves 2 parties, scammers and consumers. The consumers deal with fake online sellers through fake websites or could be attracted by fake advertisements on registered legitimate online purchase platforms. Scammers can take advantage of the anonymity of the internet to mislead naive customers. Fake sellers are familiar with advanced technology and they are able to build websites which resemble genuine online purchase platforms. The website may consist of complex designs and layout, with possibly stolen logos and even a domain name that is nearly identical to the business they are imitating. Fake online purchase platforms usually have very low prices on luxury goods such as branded clothing, jewellery, and electronic devices. There are a few online shopping scam case examples in which the consumers paid for the products but received non-authentic goods or never received the goods that they ordered. The consumers may also pay for goods by using online banking transfer or credit card payment, but do not receive goods from the sellers (Online Shopping Scam, n.d.). The payment methods available could also be a gateway for scammers to commit fraud. Methods such as online banking transfer and credit card are putting consumers at risk when they insert the information into the fake website when checking out, thus allowing hackers to access their bank accounts.

1.2 Research Problem

In this modern era, the digital economy is trending as it brings convenience to both consumers and suppliers. Therefore, more and more enterprises are involved in the digital economy and making everything can be purchased online. It is undeniable that the contribution of the digital economy to a country's economy is pivotal. However, in some cases, some criminals take the opportunity to commit fraud, causing damage to the national economy.

Fraud is a critical issue which brings a lot of impacts to human, reputational, financial, security and business. People who have insufficient awareness of fraud will easily become the target. Fraud will cause long-term mental trauma for victims as the increase of disadvantage from the impact. Fraud has the ability to affect any entity. Other than people losing the trust in government and industries, international and economic reputation will be affected too. Besides, the defence and security of a country can be jeopardised by fraud. It can also harm a nation's standing in the eyes of the rest of the world. According to international estimates, governments typically lose between 0.5% and 5.0% of their budgets to fraud and related losses. Some of the most common forms of fraud go unnoticed, and it is difficult to identify them. It is possible to uncover and more precisely estimate fraud losses through measurement exercises (Ipsos, 2020).

Consumer confidence in online purchase was significantly influenced by the long-term impact of a brand. The consumer will put the blame on the retailer and would not do online purchases again in a shop where the retailer's account was compromised. As the rapid development of e-Commerce can lead to a rise in e-Commerce fraud, all related bodies have the responsibility to prevent the possibility of fraud cases happening on consumers. One of the example id the two-factor authentication is the most effective tool on fraud prevention. However, it was identified as the most detrimental factor to decreasing income for merchants in a few countries such as the United Kingdom, France, United States and Germany. These will be the challenges for those merchants who want to provide better services as well as a safer experience for consumers ("*The impact of eCommerce fraud on retailers and shoppers"*, 2021).

The online retail industry in China accounts for about half of all global business and makes China the world's leading e-commerce market. Based on the study from Zhang et al. (2013), while China is expanding its e-commerce market at a rapid speed, trust fraud has become the biggest obstacle to China's online business. According to Taobao's research, during the period from October 17, 2008 to May 17, 2009, the largest percentage of detected fraud transactions amounted for about 47 percent of all graded transactions, while the lowest number was nearly 9 percent. In fact, many intentional and unintentional factors can influence the writing of

reviews. For instance, a seller's account might be used to write nice reviews and promote themselves, or it could be used to create nasty reviews to target competitors. As a result, many victims suffered trust fraud on Taobao, China's largest e-commerce platform.

According to Bernama (2022), there were 51,631 documented occurrences of online fraud in Malaysia, totalling more than RM1.61 billion in damages from 2019 to 2021 and the highest was 18,857 cases for online purchases. Basyir (2021) indicates that since 2017, Malaysians have lost RM2.23 billion as a result of cyber-crime frauds. Based on the police figures, there were 67,552 cyber-crime instances registered between 2017 till June 20, 2021. Of this figure, 23,011 occurrences of e-commerce frauds were reported, making them the most prevalent, followed by illegal loans with 21,008 cases and investment frauds with 6,273 cases. Moreover, based on the industry survey conducted by Li et al. (2013), 92 percent of online consumers check the comments of previous customers before making purchasing decisions. Trust fraud in the online purchase can occur easily because buyers in an online marketplace rely significantly on reviews left by past customers (Wu et al., 2015). Therefore, online purchases fraud will be focused in this study.

People in Malaysia are increasingly turning to online shopping since the Covid-19 pandemic outbreak in 2020. In addition, the pandemic and also the government's drive toward a digital economy have quickened the consumer shift from shopping in a mall to online. Further, Malaysians are pleased that they still can consume necessities, but the number of cyber fraud cases is increasing tremendously. Incredibly, Malaysians lose an average of RM 100,000 a day to cyber fraudsters, with each case costing an average of RM 6,200, and a total loss of RM35,882,385 as a result of a 70% increase in online retail fraud cases compared to 2013. (Kong, 2020).

There are also fraud cases that revolves around concert tickets, now namely the concert ticket scam. There is a lot of dissatisfaction among Shawn Mendes's local fans whom bought tickets on the “Carousell” app and found out they were counterfeits. These fraud cases happen when consumers redirect their buying experience to alternative options, which in this case were caused by the original

website's ticket being sold pout. Scammers offered the victims their MyKad number to reassure them that they are dealing with a certified and safe merchant, which in a lot of cases successfully tricked consumers into trusting them (Landau, 2019).

Another frightening example would be online flight ticket sales, which could potentially be a good trap for scammers for consumers. It has been found that fake online flight tickets were making their rounds on the internet in a new method, costing an estimated RM233,954 in losses. The Malaysian police have received 20 different reports of incidences of fraud, all of which are currently being investigated. The victims had across advertisements for flight tickets by Apsan Travel and Tour Sdn Bhd on a social media. The price offered which were significantly lower than the normal rate in market successfully attract victims (Zolkepli, 2022). Throughout this research, we can better understand why people could get scammed from online shopping and the characteristics of people who got cheated through online shopping.

It can be observed that E-commerce scams have resulted in the bad experience of online shopping and cause huge loss to the economy. The main problem is that consumers may have insufficient awareness of online shopping. Consequently, fraudsters will exploit consumers' weaknesses to defraud them. Therefore, in this study, the factors that affect online purchase fraud are of concern.

1.3 Research Objectives and Questions

1.3.1 General Objective

This study is to examine the factors contributing to online purchase fraud in Malaysia.

1.3.2 Specific Objective

1. To examine the relationship between consumer online shopping behaviour and online purchase fraud in Malaysia.
2. To examine the relationship between e-commerce technology and online purchase fraud in Malaysia.
3. To examine the relationship between the virtual quality of the network and online purchase fraud in Malaysia.
4. To examine the relationship between e-commerce law and online purchase fraud in Malaysia.
5. To examine the relationship between hours spent online and online purchase fraud in Malaysia.

1.3.3 Research Question

Data gathered in Malaysia will be used to answer some relevant research topics:

1. Is there a significance relationship between consumer online shopping behaviour with online purchase fraud?
2. Is there a significance relationship between e-commerce technology with online purchase fraud?
3. Is there a significance relationship between the virtual quality of network with online purchase fraud?
4. Is there a significance relationship between e-commerce law with online purchase fraud?
5. Is there a significance relationship between hours spent online with online purchase fraud?

1.4 Research Significance

The public may have limited knowledge of fraud cases and how they work, and how to avoid them. This study could help raise the government's attention on the

weakness of e-commerce law and the punishment mechanism for faith-breaking. It also opens the governing sector and policy makers' eyes as to how ill-equipped are the citizens in fending off online fraud cases. Through this study, enforcement and improvement can be made on e-commerce governing laws.

Besides, consumers can be more aware on online purchases if consumers' awareness on online fraud cases is inculcated. Online purchase is the norm nowadays for a portion of consumers in Malaysia as online purchase platforms have more choices and the prices are cheaper than physical shops. If consumers are properly equipped with the right knowledge in spotting and fending off online fraud cases, it reduces the amount of online fraud significantly.

This research may also be able to indirectly influence businesses or entities. Government takes control by improving or enforcing the e-commerce laws, thus, helping businesses of entities increase income and profit. These can be due to an increase of consumers confidence when spending online knowing that online platforms are safe and secure. The consumers' awareness and knowledge on the possibilities of online fraud cases can also help increase their purchasing confidence.

1.5 Structure of Study

There are a total of five chapters in this study. Chapter one is an overview of our research, which includes research background, research problem, research objective and research questions, research significance, as well as structure of study. In Chapter two, literature review of this research paper will be discussed. The relationship between dependent variables (Online purchase fraud), and five independent variables (Consumer online shopping behaviour, E-commerce technology, Virtual quality of network, E-commerce law, and Hours spent online) will be discussed in this chapter. Theoretical framework consists of concepts with definitions and references that are related to previous scholar literature and theory that may be used in this study. In addition, Chapter three will present methodology. Research design, data collection methods, sampling design, research instrument,

proposed data analysis tools and construct measurement will be explained in this chapter. Next, data analysis will be interpreted in Chapter four. In this chapter, data analysis once the survey data has been gathered. It utilises the data to run numerous tests to demonstrate the link between the independent and dependent variables, as well as to do inferential analysis. Lastly, this study comes to an end in Chapter five. It included the main conclusions of the study, as well as its implications, limitations, and some recommendations for further research on the topic.

1.6 Conclusion

Throughout this chapter, factors contributing to online purchase fraud in Malaysia had been discussed and followed by the problem statement of the fraud. Researchers had been presented with research objectives, research question and the significance of study in this chapter. The literature review of previous research studies will be better explained in Chapter 2.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

This chapter will discuss the dependent variable and the independent variables. We will review the past studies and examine the five independent factors (consumer online shopping behaviour, e-commerce technology, the virtual quality of network, e-commerce law, and hours spent online) and the dependent variable (online purchase fraud). The detailed information on each variable will be shown below.

2.1 Review of Variables

With the rapid development of the global digital economy in recent years, an increasing number of people are opting to shop online. In Malaysia, Shopee and Lazada are the two most popular online shopping platforms (Kiew, Abu Hassan, & Abu Hassan, 2021). However, online shopping frauds are on the rise, which is causing concern among online customers. Hence, this chapter aims to determine each and every relationship of the determinants with online purchase fraud in Malaysia to obtain a deeper understanding of the factors contributing to online purchase fraud.

2.1.1 Online Purchase Fraud (Dependent Variable)

Consumers are increasingly purchasing things online as a result of increased Internet access. People complete the transaction in a non-face-to-face manner when purchasing goods or services virtually. Before making a purchase, a customer is unable to physically inspect the quality of the item in question or to ensure the confidentiality and safety of passing sensitive personal and financial information (such as credit card data) over the Internet to an unknown third party (Lee & Turban, 2001). In this case, the

risk of online purchase fraud will increase because everyone does not know the identity of the other party. The increased risk of fraud for online transactions may be attributed to information asymmetry. Under asymmetric information, sellers have much more knowledge about the object being offered than purchasers (Akerlof, 1970; Mishra, Heide, & Cort, 1998). This greatly increases the likelihood of fraud (Dekleva, 2000).

Online shopping fraud includes confiscating goods, receiving the wrong item, purchasing an item or service at a certain price and then getting charged more than that, and so on (*Survey on scams and fraud experienced by consumers - final report*, 2020). Furthermore, online vendors may accept payment but deliver the incorrect goods or fail to deliver at all; a shop may delay product delivery or refuse to exchange a damaged product (Peštek, Resić & Nožica, 2011). This variable is designed to identify people who have experienced online purchase fraud or determine victims while shopping online.

2.1.2 Consumer Online Shopping Behaviour

Online consumer behaviour refers to the process through which customers make purchasing choices in e-commerce. The actions themselves, such as recognising a problem or choosing to make a purchase, are based on expectations and needs that are always changing (Wenzl, 2021). Consumer willingness to pay for goods and services online is influenced by personal preferences. According to the research from Wu (2003), consumer's online shopping behaviour influence consumer attitudes and online purchase decisions significantly.

Katawetawaraks and Wang (2011) claims that consumers prefer shopping online because they believe that shopping over the internet is more convenient. Convenience influences crucial marketing outcomes, such as purchasing behaviour and consumer rating (Seiders, Voss, Godfrey, &

Grewal, 2007). As consumers devote less effort and time to online shopping, their need for convenience has risen, and as a result, online shopping has lately gained greater attention (Kumar & Kashyap, 2018). When consumers have too much trust in the convenience of online shopping, they will be careless when purchasing online, and thus easily fall into online shopping fraud. This shows that the more convenient online purchasing is, the higher the probability of consumers falling into online purchase fraud.

Other than convenience, consumers choose online shopping because they are attracted by well-designed websites. Based on the study from Darwish, Zarka & Aloul (2012), some fraudsters use high-quality visual content, such as animated pictures and flash media, to fool unsuspecting viewers into falling for their deception. Thus, according to their study, there is a positive relationship between a well-designed website and fraud.

When it comes to online shopping, one important common behaviour that the majority of people have is they read previous reviews before purchasing the things they are interested in. This is because online reviews are an important and inescapable part of the e-commerce process (Wu, Ngai, Wu & Wu, 2020). Based on the research from Wang, Xie, Liu & Yu (2011), there is a positive relationship between fake reviews and online fraud. This is because spammers have turned their attention to the review system, which is frequently employed or encouraged by businesses to create false evaluations in order to promote their products and services and/or divert customers away from their competitors. Additionally, the e-commerce network environment has a lot of faulty services and hostile feedback behaviour **(**Wang, 2022**)**. Based on Amorim et al. (2017), the less negative feedback an item has received in the past, the more reliable it is and the lower the risk. Consumers trust e-commerce sellers when there is less negative feedback to the particular sellers. The seller uses product reviews as an essential source of information for consumers to gain confidence and make informed purchasing decisions. Therefore, the positive correlation between fake reviews and online purchase fraud when consumers cannot identify fake reviews from sellers (Lackermair, Kailer, & Kanmaz, 2013).

2.1.3 E-commerce Technology

Electronic commerce makes use of several technologies, including mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, Electronic Data Interchange (EDI), inventory management systems, and automated data collection systems. A large part of today's e-commerce transactions take place online. However, e-mail, mobile devices, social media, and telephones may also play a role by providing payment gateway points (Rahman, 2014).

Although many online platforms have implemented defensive technology to combat virus risks, e-commerce technology is critical for online shopping activity. The trustworthiness of the technology that underpins an e-commerce transaction is crucial for consumer confidence. The more customers rely on online services, the more they regard it as a trusted relationship, the higher the trusted premium that best practice companies command and the greater the corresponding erosion of trust for those with poor IT operations. Customers may lose faith in e-commerce due to a lack of technical dependability. Technology may serve as a guide for clients seeking confirmation of their trust or suspicion of e-commerce websites (Corbitt, Thanasankit & Yi, 2003).

Online retailers must have sufficient cyber security since cyber-attacks may result in the loss of money, data, or even the company's survival. To steal sensitive data from companies, cybercriminals employ cutting-edge methods. Security technologies include concepts, regulations, and hardware that work together to reduce danger, identify vulnerabilities, and plan for when and how to react to potential threat (Government of Canada, 2021).

Based on Jain and Raman (2022), the security risk associated with digital financial services has been defined as digital fraud and identity theft. If

sensitive information is intercepted, it endangers consumer confidence and participation in digital financial services. When consumers trust the security of e-commerce technology, fraudsters may take advantage of the technology's flaws to deceive consumers. Therefore, there is a positive relationship between e-commerce technology and online purchase fraud according to Online Trust Model

According to Wopperer (2002), ignoring the security of technology will lead to an increase in online purchase fraud. This is because it allows cyber hackers to easily find and exploit weak links in business websites to easily obtain customer card information and other personal financial information. Programming errors, unintentional security gaps, and improper encryption methods in the technology can all expose systems to significant levels of risk. The more secure of the e-commerce technology, the less the incidence of online purchase fraud. Chawla & Kumar (2021) states that data security is perhaps the greatest threat to e-commerce. The markets are subject to so many breaches that it seems like everyone is hacked, making it difficult to ensure that the technology is secure and safe. Therefore, online purchase fraud and e-commerce technology are negatively correlated. This is due to the insecurity and unsafety of technology, which has led to an increase in online purchase fraud.

2.1.4 The Virtual Quality of Network

The idea of network virtualization suggests combining network resources from both software and hardware into a single network complex or a collection of network functions and objects. This kind of virtualization, which is regarded as external, can be used to virtually incorporate distant physical items into a single network structure. In this instance, virtualization can take the form of network equipment including routers, switches, multiplexers, and network interfaces. Virtual private networks (VPNs) and virtual local area networks can both be created using a similar set of

virtualized network resources (VLANs). A VPN can replicate a direct connection, securely connect remote clients to a work or home network, and link many corporate networks into a single domain zone. To separate traffic within the company LAN, utilise VLAN. Virtual channels are established on the physical network, which are then followed by packets from various user groups (Ageyev, Bondarenko, Radivilova & Alfroukh, 2018).

The network creates a virtual environment for human contact in which individuals may communicate anonymously and experience a world distinct from the actual one. Simultaneously, online transaction partners have produced fake photos, allowing individuals to hide their true identities in order to avoid committing fraud or evading discovery and punishment (Liu & Zhang, 2007). Additionally, online merchants rely heavily on their electronic storefronts to attract and engage with consumers. Online merchants may focus on how to design websites that consumers consider trustworthy, and then defraud consumers through the virtual quality of network. The faked website incorporates harmful manipulations aimed to raise users' trust, lessen their perception of danger, and eventually improve the possibility that they will make a purchase (Grazioli & Jarvenpaa, 2000).

Lee, Ariff, Zakuan, Sulaiman, and Saman (2016) emphasize that online vendors develop high-quality website design in order to boost their online visibility and increase the likelihood of online shoppers accessing and purchasing their products. In order to be truly effective online retailers, the websites of online vendors must be of higher quality. This will increase the chances of online shopping fraud when the authenticity of the website is not as good as the seller designed it. Moreover, Shahzad (2015) claimed that 77% of respondents were motivated to buy via a decent and high-quality website design, while 76% of online shoppers were ready to purchase through a secure and user-friendly website design. This finding shows that a quality website design is important for attracting customers to visit the online shop. Simultaneously, customers evaluate an online store's overall service quality based on their experience using the website (Rita, Oliveira, & Farisa, 2019). Therefore, some online stores may use high-quality website designs to

deceive buyers and give false or misleading information to buyers. The virtual quality of network and online purchase fraud are positively correlated, since the higher the quality of website design, the higher the probability of online purchase fraud.

The perceived quality of a website design is the experienced level of quality that users perceive based on the website's overall performance. The better the website's maturity, the higher its perceived quality; conversely, the greater the website's lack of practical experience may lead to fraud events and poor judgement. When users believe a site to be of poorer quality, the risk of cyber-fraud increases, as does the amount of money lost. When consumers perceive a better quality site, more maturity, and the accompanying trust, emotions and self-esteem, they feel a bigger feeling of loss when defrauded, and the non-monetary fraud loss is greater (Zhang, Tsai, Lin, Cheng, & Lu, 2018). The virtual quality of network and online purchase fraud are negatively correlated, since the poorer the quality of website design, the higher the probability of online purchase fraud.

There is a significance relationship between web fictitious quality virtual quality of network and online purchase fraud, as authentic high-quality website designs lead to a reduction in fraud.

2.1.5 E-commerce Law

The protection of e-commerce consumers' rights and benefits has become more important in the contemporary day due to the development of information technology. Malaysia's e-commerce and internet enterprises are governed by a variety of distinct rules and regulations. Significant to Malaysian e-commerce are the following: Electronic Commerce Act 2006 (ECA), Personal Data Protection Act 2010 (PDPA), Consumer Protection Act 1999 (CPA), Consumer Protection (Electronic Trade Transactions) Regulations 2012 (ETT Regulations), Trade Descriptions Act 2011 (TDA),

Communications and Multimedia Act 1998 (CMA), and others (*Malaysia - eCommerce*, n.d.).

The Malaysian Communications and Multimedia Commission (MCMC) has the authority to handle consumer complaints when the case is relating to licensees misconduct. The licensees include network infrastructure providers, network services providers, application service providers, and content applications service providers. A consumer forum has been established by MCMC and two codes have been issued which are a General Code that applies to all licensees, and a sub-code that applies to Internet Service Providers (Sothirachagan, 2020). As there are some authorised regulators such as MCMC, the consumer will be more confident with online purchases but there are still some fraud cases happening as the consumers let their guard down.

According to Alqahtani, Al-Badi & Mayhew (2012), cyber-law is crucial in e-Commerce. Without e-commerce law, there are no special organisations or institutes to defend consumer rights and to enforce control and censorship over this type of business. There is no well-known corporation or government initiative to punish a dishonest business. This was one of the reasons for not adopting e-commerce in Saudi Arabia. The study shows that without strict e-commerce laws, online purchase fraud will get worse.

Inadequacies in India's Consumer Protection Act 1986 and other related laws increase fear and lack of trust among internet customers, as well as increase the chances of online shopping fraud (Chawla & Kumar, 2021). There should be a strengthening of rules and legislation to safeguard consumer rights and give online consumers with data privacy, secure transactions, and a sense of confidence in online shopping. Furthermore, judicial interventions and directives ensure the security of internet customers. In research from Pinto, Mottola, Marchetti, Savarino & Tantillot (2019), it is crucial to ensure the authenticity of products by enacting corresponding e-commerce specific laws, regulations and by-laws. Strengthened laws can reduce online purchase fraud and this contribute to

the negative relationship between e-commerce law and online purchase fraud.

2.1.6 Hours Spent Online

According to the study by Pratt, Holtfreter, & Reisig (2010), the findings demonstrate that spending time online and making purchases from websites increases the risk of being targeted by fraud. The result shows that hours spent online had a positive and statistically significant influence on Internet fraud targeting ($p < 0.05$, one-tailed test).

Hours spent online is considered as a variable contributing to Internet fraud. The average number of hours individuals spend online each week, whether at home or at work, was used to calculate time spent online (Reisig, Pratt & Holtfreter, 2009). Based on the research outcome, the participants with higher victimization risk adopted online habits that reduced their risk of being targeted by cybercriminals. In order to reduce perceived risk, these individuals spend much less hours per week online and make significantly fewer online purchases. Thus, the study makes an explanation which is that people who perceive themselves to be at higher danger will change their routine to avoid becoming victims. Internet users who believe there is a high risk of their credit card information being stolen in cyberspace might lessen their risk by adopting a lower-risk online routine, such as spending less time online.

In research from Reep-van Den Bergh and Junger (2018), the chance of being a victim of internet fraud rises with more hours of internet usage.

2.2 Relevant Theory

2.2.1 Online Trust Model

According to Beldad, de Jong & Steehouder (2010), they define online trust as an attitude of confident expectancy in an online environment of danger that one's weaknesses will not be abused. When buying online, a consumer, as a trustor, finds himself or herself in a dangerous situation in which he or she uses the Internet to convey his or her demands to an e-vendor and submits personal information. He or she selects a payment method and expects the website to be a secure platform for the transaction, as well as the seller to fulfill the purchase request in an honest and professional manner.

Findings from Corbitt et al. (2003) imply that individuals are more likely to make online purchases if they sense a higher level of confidence in e-commerce and have more expertise using the Internet. The amount of perceived market orientation, site quality, technological trustworthiness, and user's online experience are likely to impact customer trust. People with a better perception of site quality seem to have a higher perception of e-market commerce's orientation and credibility. Additionally, those with a greater degree of faith in e-commerce are more inclined to engage in e-commerce.

Online trust plays an important role in e-commerce because one of the most severe barriers to consumers engaging in e-commerce, which involves transactions in which financial and personal information is transmitted to merchants via the Internet, has been recognized as a lack of confidence (Wang & Emurian, 2005). Trust mechanisms provide the assumption that a seller would behave in the customer's best interest, hence encouraging the consumer to be sensitive to the seller's actions (Grazioli & Jarvenpaa, 2000). Building consumer trust on the Internet is a difficulty for online merchants and a research area that is becoming increasingly concentrated and essential. Thus, consumer trust is said to be utmost important in order to complete an online transaction between buyers and sellers. As online buyers and online sellers are separated in terms of time and location (Riegelsberger, Sasse &

McCarthy, 2005), and the shoppers cannot touch, smell, taste, or try tangible products (Chen & Dibb, 2010), these situations can lead to online fraud.

Research model in the study from Liu & Zhang (2007):

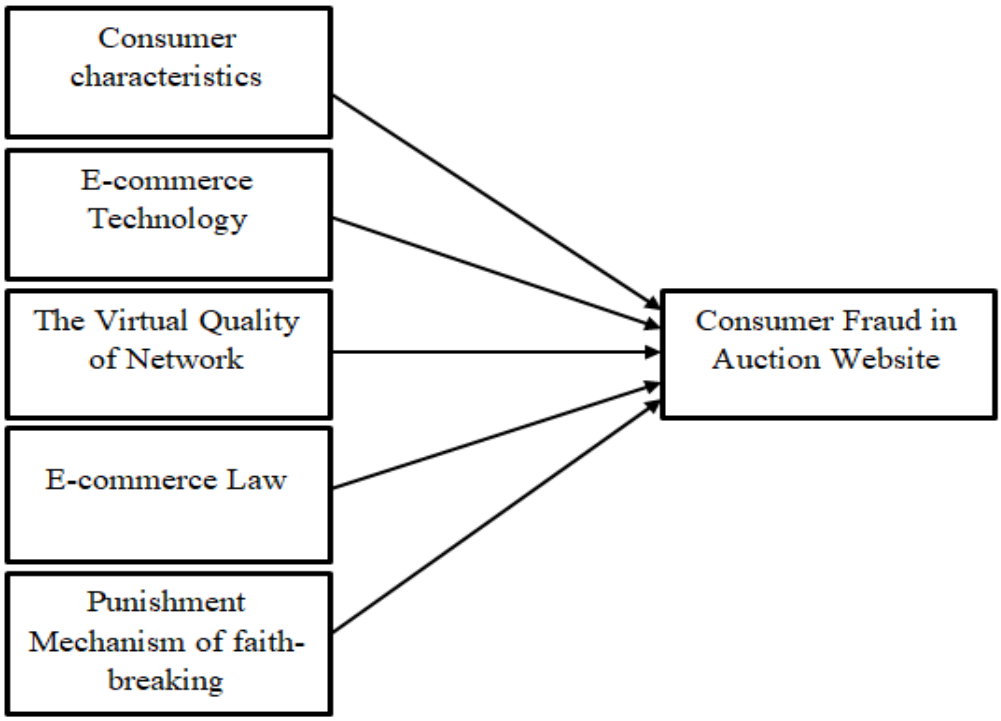


Figure 2.1: Research model in the study from Liu & Zhang (2007)

Based on the research model by Liu and Zhang (2007), their end results found that consumer characteristics, e-commerce technology, the virtual quality of network, e-commerce law, and punishment mechanism of faith-breaking have a significant impact on consumer fraud in auction websites.

According to the SPSS result analysis, rotated component matrix shows that the variables have factor loadings greater than 0.5, which are about 0.7, indicating that they are highly connected with auction website fraud. In short, this study was selected as a reference theoretical model because it investigates the factors that influence consumer fraud in auction website, which is similar to our dependent variable, online purchase fraud.

2.2.2 Routine Activity Theory (RAT)

The routine activity theory is a well-known theory that is applied to internet consumer fraud victimization. It includes a likely offender, a suitable target, and the absence of a capable guardian. A crime can be committed if these three requirements are met, as it is the convergence of their physical and temporal proximity that provides the potential for a crime to occur. An ordinary person can be easily persuaded to commit a crime, according to the theory of routine activities, which holds that criminal behaviour does not require deep psychological reasons for the conduct. Victimization is the main focus of the theory instead.

According to the theory, online fraud risks are concentrated among those who expose themselves to fraudsters via certain online activities, such as shopping (Wilsem, 2011). Reisig and Holtfreter (2013) expressed that the risk of being a victim of shopping fraud rises when people do things that do not require a lot of guardianship, like making online purchases, which exposes them to more motivated offenders. Consistent with RAT's predictions, technical advancements, which is the Internet, have increased offenders' possibilities to contact prospective fraud targets, and victim complaints of online fraud continue to grow. Nowadays, online shopping is one of the most popular internet activities. As a result, the Internet creates an atmosphere that makes it extremely easy for fraudsters to discover potential targets. Target accessibility and visibility are supposed to function as discriminating features to criminals who choose to victimise in such an environment of many criminal options on the Internet. The ability to track down Internet fraudsters is determined by people's online behaviours. Empirical studies found that persons who expose themselves to criminals by making online purchases and spending time on the Internet are more likely to be targeted for Internet fraud. The more available and visible individuals are to fraudsters via their online actions, the more likely they are to become victims of online consumer fraud (Wilsem, 2011).

Research model in the study from Pratt et al. (2010):

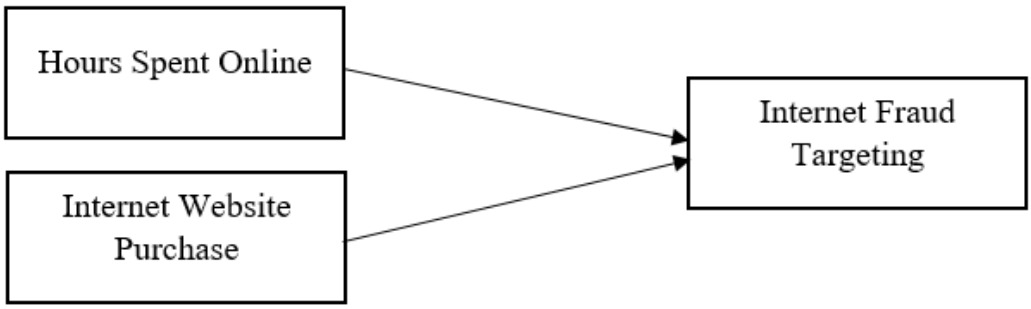


Figure 2.2: Research model in the study from Pratt et al. (2010)

Hours spent online as the first variable, indicates the weekly average of the amount of time spent online to engage in visiting or buying products via Internet. The next variable, Internet website purchase used to determine if respondents had made a purchase from an Internet website.

This theory was chosen for our research because it is a famous explanation of victimization as well as the dependent variable is quite related to what we are investigating, namely online purchase fraud.

2.3 Proposed Theoretical / Conceptual Framework

From the research of Liu and Zhang (2007) and Pratt et al. (2010), we discover that online purchase fraud is significantly influenced by the factors such as consumer characteristics, e-commerce technology, the virtual quality of network, e-commerce law, punishment mechanism of faith-breaking, hours spent online, and internet website purchase. By adjusting and combining these two studies to develop our research framework, we finalize our independent variables as consumer online shopping behaviour, e-commerce technology, the virtual quality of network, e-commerce law, and hours spent online. The term of "consumer online shopping behaviour" is used for the purpose of our research. The reason for eliminating the variable of punishment mechanism of faith-breaking is that it is quite similar or related to the variable of e-commerce law. According to the research from Liu and Zhang (2007), the presence of punishment mechanism is to protect user's security effectively. This is somehow same as the existence of e-commerce law, which is to

protect the right and benefits of e-commerce consumers. For the variable of internet website purchase, it determined only whether participants had made any purchases from an online website (Pratt et al., 2010). In this case, we would like to choose hours spent online rather than the variable of internet website purchases because it demonstrates how spending time online affects fraud in a more direct way.

As shown in the Figure 2.3, the proposed dependent variable is online purchase fraud, while the independent variables are consumer online shopping behaviour, e-commerce technology, the virtual quality of network, e-commerce law, and hours spent online.

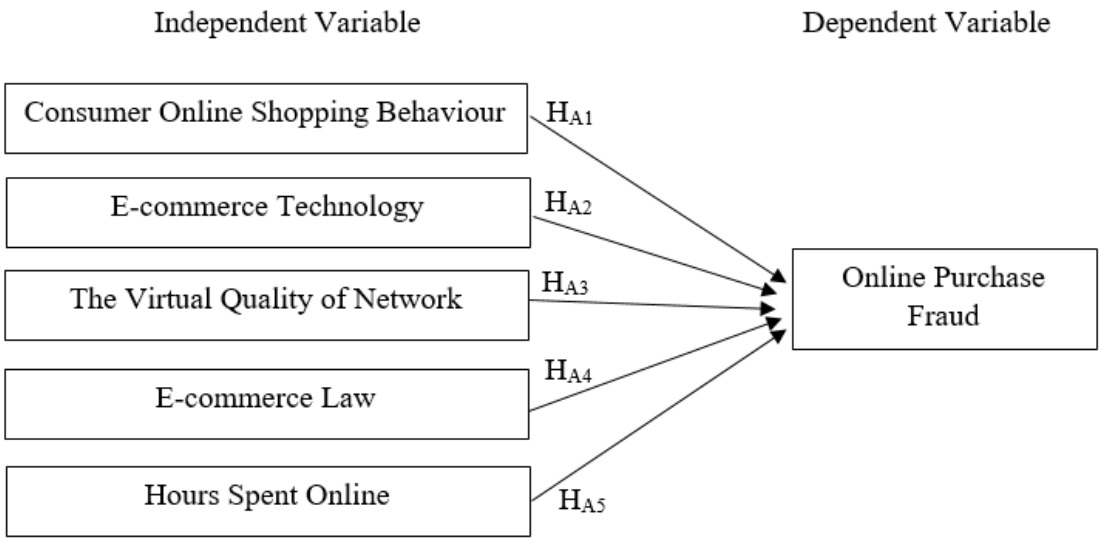


Figure 2.3: Proposed Model of the Factors Contributing to Online Purchase Fraud

In which:

H_{A1}: There is a significance relationship between consumer online purchase behaviour and online purchase fraud.

H_{A2}: There is a significance relationship between e-commerce technology and online purchase fraud.

H_{A3}: There is a significance relationship between the virtual quality of network and online purchase fraud.

H_{A4}: There is a significance relationship between e-commerce law and online purchase fraud.

H_{A5}: There is a significance relationship between hours spent online and online purchase fraud.

2.4 Hypothesis Development

2.4.1 Consumer online shopping behaviour influences online purchase fraud

Consumer online shopping behaviour influenced by the convenience of online purchase, well-designed of websites, and behaviour of reading previous reviews. There is a positive connections exist between the convenience of online purchase (Katawetawaraks and Wang, 2011; Seiders, 2007; and Kumar & Kashyap, 2018), well-designed of websites (Darwish et al., 2012), and reading fake reviews (Wu et al., 2020, and Wang et al., 2011) with online purchase fraud.

H_{01}: There is no significant relationship between consumer online shopping behaviour and online purchase fraud.
H_{A1}: There is significant relationship between consumer online shopping behaviour and online purchase fraud.

2.4.2 E-commerce technology influences online purchase fraud

Corbitt et al. (2003) indicates that consumers would lose trust in e-commerce with poor IT security. Jain and Raman (2022) shows the positive relationship between e-commerce technology and online purchase fraud according to Online Trust Model. This is due to the more trust in the security of e-commerce technology (whether it is secure or not), the more likely it is for fraudsters to take advantage of the technology's flaws to deceive consumers. However, Wopperer (2002) and Chawla & Kumar (2021)

explain the negative relationship between e-commerce technology and online purchase fraud, which is the lower the security of e-commerce technology, the higher the probability of online purchase fraud.

H_{01}: There is no significant relationship between e-commerce technology and online purchase fraud.
H_{A1}: There is significant relationship between e-commerce technology and online purchase fraud.

2.4.3 The virtual quality of network influences online purchase fraud

The relationship between the virtual quality of network and online purchase fraud is ambiguous. Lee et al. (2016), Shahzad (2015), and Rita et al. (2019) state that more consumers are more willing to buy in stores with high quality design. Some sellers may develop high-quality website design to raise the consumers' trust, leading to online purchase fraud. However, Zhang et al. (2018) shows the negative relationship between the virtual quality of network and online purchase fraud. The lower the quality of website design, the higher the probability of online purchase fraud.

H_{01}: There is no significant relationship between the virtual quality of network and online purchase fraud.
H_{A1}: There is significant relationship between the virtual quality of network and online purchase fraud.

2.4.4 E-commerce law influences online purchase fraud

There is a negative connection exists between e-commerce law and online purchase fraud. Alqahtani et al. (2012), Chawla & Kumar (2021), and Pinto et al. (2019) indicate that e-commerce laws are important to protect

consumers from online purchase fraud. The stronger the e-commerce laws, the less fraudulent online purchase is.

H_{01}: There is no significant relationship between e-commerce law and online purchase fraud.
H_{A1}: There is significant relationship between e-commerce law and online purchase fraud.

2.4.5 Hours spent online influences online purchase fraud

There is a positive relationship between hours spent online and online purchase fraud (Pratt et al., 2010 and Reep-van Den Bergh & Junger, 2018). The more hours spent online, the higher risk of being a victim of online purchase fraud.

H_{01}: There is no significant relationship between hours spent online and online purchase fraud.
H_{A1}: There is significant relationship between hours spent online and online purchase fraud.

2.5 Conclusion

In this chapter, the relationship between the independent variables and the dependent variable has been clearly stated. We have specified the literature review to give a related concept, methodologies, and findings that are based on our research topic and align with our research objectives. There are two relevant theories have been chosen in our research. Testable hypotheses have been formulated in this chapter in order to continue to determine the viability of the idea that will be discussed in Chapter 3.

CHAPTER 3: METHODOLOGY

3.0 Introduction

This chapter's purpose is to examine the research methodology and discover the relationship between the variables. This study is being conducted in terms of research design, data collection methods, sampling design, research instrument, proposed data analysis tool, and constructs measurement. The whole of the research procedure will be detailed here. The research technique will include detail the data analysis process.

3.1 Research design

Research design is the framework of methodologies and strategies a researcher will use in a study. It enables researchers to focus on research methodologies that are adequate for the selected topic and construct their research for favourable results. In order to identify which model to use for the research, a researcher must acknowledge the types of research design. There are different types of research design, such as descriptive, experimental, correlational, diagnostic and explanatory research design. The research design could also be classified into two categories, which are quantitative research design and qualitative research design.

In this research, descriptive research design is more preferable. According to Dulock (1993), descriptive research design is to accurately reflect or account for the features of a certain person, group, or scenario; theses research is conducted to learn more about a topic, provide a better description of it, record how often it happens, and classify it into relevant categories.

Besides, quantitative research will be used in this study since it can be measured correctly. Quantitative research refers to a variety of approaches dealing with the systematic research of social issues via the use of statistical or numerical data

(Watson, 2015). Thus, quantitative research entails measurement and implies that the topic under investigation can be quantified. It intends to analyze data for patterns and correlations, as well as to validate the measurements performed. This full range is covered by quantitative research. For all methods of measurement, the same requirements are used to evaluate, compute, and analyze data.

3.2 Data Collection Method

Data collection method is a technique to gather the information for the research to solve the research problem, hypothesis, and estimate the result (Dudovskiy, 2022). Data collection methods can be classified into two types which are primary and secondary data collection methods. Primary or secondary data may be used to gather the essential data (Sekaran & Bougie, 2010). In order to investigate the factors contributing to online purchase fraud in digital economy in Malaysia, this study obtain primary data.

3.2.1 Primary Data

According to Kabir (2016), primary data is information gathered from firsthand experience. For instance, interview, survey, experiments, observation etc. Primary data is more objective, credible, and accurate since it has not yet been presented. As primary data has not been modified or amended by humans, its reliability is greater than secondary data (Kabir, 2016).

The primary data collection method is used for this study via questionnaire. The questionnaire is prepared with seven sections from Section A to Section G. In order to get information from the questionnaire, it is created with demographic questions as well as behavioral questions with Likert scale. A total of 38 questions have been prepared for the questionnaire. Moreover, the questionnaire will be created through Google form to conduct online surveys. The questionnaires are sent out to certain groups of people in order

to acquire primary data. Google Form is a great tool for distributing and collecting questionnaires since it is easier and takes less time than traditional methods of data collection like in-person interviews (Razif, Misiran, Sapiri & Yusof, 2020). As compared to filling out a paper questionnaire, taking part in an online survey might be more convenient for respondents (Punter, Ciolkowski, Freimut & John, 2003). Also, the data collected from online questionnaires are more reliable, and the response rate is higher.

3.3 Sampling Design

Sampling design is an essential component of research. Since it is not always possible to monitor all members of a population, samples are taken to get a better knowledge of it. The objective is to acquire samples that accurately reflect the population. Due to time and financial limitations, the sampling effort must be precise. To define the characteristics of highly variable populations, more samples are required than for less variable populations. In this study, sampling design includes target population, frame and location sampling, technique of sampling, and size of sampling (Wills, Roecker & Avello 2020).

3.3.1 Target Population

The target population is the group of people on whom the initiative will perform research and develop findings (Lavrakas, 2008). The target population for this study is Malaysian citizens who are 18 years old and above including Malay, Chinese, and Indian. The purpose is to target Malaysians who are at 18 years old and above because according to the Age of Majority Act 1971 which come into force throughout Malaysia on 30th April 1971, the age of majority in Malaysia is 18 years old (Singh & Lui, 2021).

3.3.2 Frame and Location Sampling

Sample frame is the collection of resources from which the sample is chosen (Turner, 2003). In this study, Malaysians 18 years old and above are capable of allocating their money to any financial activity on their own. According to the Guardianship of Infants Act 1961, the assets of the youngster shall be managed and handled by guardians. Thus, Malaysians who are under 18 years old are excluded from our research.

Sample location refers to the particular location where a geographical sample was collected (Turner, 2003). For this study, the sampling location will include West Malaysia and East Malaysia. There are total 13 states (Johor, Kedah, Kelantan, Malacca, Negeri Sembilan, Pahang, Penang, Perak, Perlis, Selangor, Terengganu, Sabah and Sarawak) and 3 federal territories (Kuala Lumpur, Putrajaya, Labuan).

3.3.3 Technique of Sampling

Technique of sampling can be classified into two categories, which are probability sampling and non-probability sampling (Albaity & Rahman, 2019). Probability sampling is defined as every respondent has an equal chance to be selected in the sample. Non-probability refers to every respondent in the population not having an equal probability of being chosen. Since the target population of this study is from West Malaysia which are 18 years old and above, thus the respondents do not have equal chances to be chosen, and the technique of sampling used is non-probability sampling.

In addition, non-probability sampling methods can be separated as convenience sampling, purposive or judgement sampling, snowball sampling and quota sampling. As mentioned before the requirement of target population, judgement sampling will be adopted in this study. According to Menoe (2020), if a study uses judgement sampling, the researcher will select respondents who are most suitable to the research

questions. Thus, based on the criteria of the study, Malaysia citizen who use online shopping and 18 years old or above will be chosen to answer the questionnaire.

3.3.4 Size of Sampling

The sample size refers to the total number of respondents involved in a research, and the number is always classified by demographics such as age, gender, and location so that the total sample reflects the whole population. One of the most significant aspects of statistical analysis is choosing the suitable sample size. If the sample size is too small, the findings will be invalid and will not appropriately reflect the actuality of the population being studied. In order to prevent this issue, the Yamane formula (1967) will be adopted (Israel,1992).

$$n = \frac{N}{1 + N(e^2)}$$

Where:

N = Population size

e = Acceptable sampling error

n = Sample size

Based on the formula above, the confidence level is 95% and the p-value will be 0.05. According to the Department of Statistics Malaysia (2021), West Malaysia's population in 2021 is roughly 25.9 million. Thus, substitute all the information above into the formula.

$$n = \frac{25{,}900{,}000}{1 + 25{,}900{,}000(0.05^2)}$$

$$n = 399.999$$

$$n \approx 400$$

The result shows the sample size is 399.999 people. In order to collect authentic data, the sample size is rounded up to 400 respondents, which means that there are a minimum of 400 respondents is required.

3.4 Research Instrument

3.4.1 Questionnaire Survey

Section A: Demographic Information

1. Do you shop online?

Yes	
No	

2. Gender

Male	
Female	

3. Age

18-24 years old	
25-39 years old	
40-60 years old	
61 years old and above	

4. Nationality

Malaysian	
Non-Malaysian (Please specify country below)	
Others	

5. Ethnic

Malay	
Chinese	
India	
Others (please specify)	

6. State

Johor	
Kedah	
Kelantan	
Malacca	
Negeri Sembilan	
Pahang	
Penang	
Perak	
Perlis	
Sabah	
Sarawak	
Selangor	
Terengganu	
Federal Territory of Kuala Lumpur	
Federal Territory of Putrajaya	
Federal Territory of Labuan	

7. Education qualification

Secondary school	
Foundation or Diploma	
Bachelor Degree	
Master Degree and above	

8. Employment status

Self-employed	
Employed	
Unemployed	

9. Monthly Allowance or Salary

Below RM1,000	
RM1,000-RM2,000	
RM2,001-RM3,000	

RM3,001-RM5,000	
RM5,001-RM10,000	
RM10,001 and above	

10. How often do you shop online?

More than once a month	
Once a month	
At least once in six months	
At least once a year	

11. Which online platform do you prefer?

Shopee	
Lazada	
Taobao	
Facebook live	
Shop page via Instagram	
Internet website	
Others	

Section B: Consumer Online Shopping Behaviour

Consumer Online Shopping Behaviour		**Original Content**	**Source**
1	I choose online products based on the convenience of purchase.	Consumer benefit perceptions (purchase convenience) influences the attitude of consumer toward online shopping.	Wu (2003)
2	I buy product from a well-designed online website.	Some fake sellers may decorate an online website that sells fake	Carpineto & Romano (2017)

		brands products to entice consumers to buy them.	
3	I read reviews before buying a product online.	Online reviews are an important and inescapable part of the e-commerce process.	Wu et al. (2020)
4	I choose fashion products online based on my lifestyles.	Consumer lifestyles (fashion) influences the attitude of consumer toward online shopping.	Wu (2003)

Section C: E-commerce Technology

E-commerce Technology		**Original Content**	**Source**
1	E-commerce systems are good in maintaining data accuracy.	E-commerce technologies are effective in keeping the accurate value of data.	Corbitt et al. (2003)
2	An order cannot be denied once it has been placed. (Eg. After the buyer places an order, the seller cannot reject the order)	An individual cannot reasonably claim not to have taken an action online while they actually have. For example, once an order is placed, the buyer/seller cannot deny placing such an order.	
3	I think that most business websites know enough about technology to handle online transactions. (Eg. Business involve security	I believe that most commercial web sites have the necessary technology knowledge to carry out the on-line transaction.	

	technology to ensure the transaction safety)		
4	My financial information will be abused when I make online payments.	I worry about the abuse of my financial information when I use digital finance.	Jain & Raman (2022)
5	I feel that my personal information provided to retailers has been disclosed without my consent.	I feel that my personal information given to retailer may be compromised to third party.	Shahzad (2015)

Section D: The Virtual Quality of Network

The Virtual Quality of Network		**Original Content**	**Source**
1	Most e-commerce platforms provide enough information to evaluate a product.	E-commerce web sites usually provide sufficient information to evaluate the product.	Corbitt et al. (2003)
2	I only shop online if the items are visually appealing.	I buy from online stores only if they are visually appealing and have a well-organized appearance.	Shahzad (2015)
3	I only shop online if the stores appear to be well-organized.	I buy from online stores only if they are visually appealing and have a well-organized appearance.	
4	I only buy from internet retailers if the information is simple to	I buy from online stores only if the site content is	

	understand. (Eg. If product information is confusing or difficult to determine, I would search another option)	easy for me to understand and the information provided is relevant.	

Section E: E-commerce Law

E-commerce Law		**Original Content**	**Source**
1	Shopping online is risky because there is no strict cyber law to punish fraudsters. (Eg. privacy risk, quality risk etc.).	Shopping online is risky because of a lack of strict cyber laws in place to punish frauds and hackers.	Shahzad (2015)
2	Internet user's privacy is severely violated.	The privacy of Internet users is greatly violated.	Liu & Zhang (2007)
3	Despite all of today's security measures, internet shopping platforms are still not sufficiently protected.	Despite all the safety precautions in place today, Internet and e-mails are not safeguarded enough.	
4	As a consumer, my personal information can be disclosed by the seller without my consent.	Companies can disclose personal information if they deem it necessary.	

Section F: Hours Spent Online

Hours Spent Online		**Original Content**	**Source**
1	I used to go online to access the internet or the world wide web.	Ever go online to access to Internet or World Wide Web or send and receive email?	Pratt et al. (2010)

2	I spend more than 8 hours on the Internet per week.	How many hours each week would you say you spend on the Internet?	
3	There are risks when I spend time online. (Eg. social risk, financial risk etc.)	Spending time online and making purchases from websites increases the risk of being targeted by fraud.	
4	Spending more time online will increase the chance of risky situation. (Eg. social risk, financial risk etc.)	Amount of time spent online, which in turn increases likelihood of exposure to risky situations	Reyns (2011)
5	Spend time online without proper supervision will increase opportunities for crime. (Eg. In order to avoid crime, it is acceptable to be supervised when spending time online)	Criminal opportunities emerge when motivated offenders converge in time and space with suitable targets in environments lacking capable guardianship.	

Section G: Online Purchase Fraud

Online Purchase Fraud		**Original Content**	**Source**
1	I can identify the latest online purchase fraud. (Eg. Fake online shopping app, fake advertisement etc.)	There ever was a time you felt you were the subject of a consumer fraud attempt?	Pratt et al. (2010)

2	I might not receive the products/services after I made online purchase.	You bought what you thought was a good deal, but you never received the goods/service or the goods/services turned out to be fake or non-existent.	*Survey on scams and fraud experienced by consumers - final report*. (2020)
3	I used to receive a fake product that I ordered online.		
4	I used to buy a product/service at a certain price but later being charge more.	You ordered free or relatively cheap products or services, but it turned out you had been tricked into a costly monthly subscription.	
5	I used to buy tickets for an event, concert or travel but it turned out the tickets were not genuine.	You bought tickets for an event, concert or travel but it turned out the tickets were not genuine and/or you never received them.	

Table: 3.1: Source of Questionnaire

3.4.2 Questionnaire Design

A cover page outlining the study's topic and a short justification for the purpose of conducting the survey are listed in research questionnaires, which is to investigate the factors of online purchase fraud in Malaysia. At the bottom of the cover page, instructions are provided to assist respondents fill out the survey. The following page is Personal Data Protection Statement (PDPA), on which respondents grant permission and approval for the research to use the information they gave in the survey for academic reasons. Following that, there are a total of 38 questions distributed across Sections A through G. Section A contains questions on the respondents' demographic

information, such as the gender, age, ethnic, state, educational qualifications, monthly income, and so on. The subtopics from Section B to Section G are the acknowledgement, consumer online shopping behaviour, e-commerce technology, the virtual quality of network, e-commerce law, hours spent online, and online purchase fraud (dependent variable). For the questions from Section B to Section G, the 5-point Likert scale is adopted to keep track of the respondents' level of response to the questions. For example, “1 = Strongly Disagree”, “2 = Disagree”, “3 = Neutral”, “4 = Agree”, and “5 = Strongly Agree”.

3.4.3 Pilot Test

A pilot study is a pre-testing of the main study conducted with the purpose of improving the quality and efficiency of the research (Teijlingen & Hundley, 2002). The objective of pilot test is to enhance the viability of the study, reduce error, and assess the practicability of the questionnaire before the final survey questions are sent to actual respondent in order to gather actual and useful data (Albaity & Rahman, 2019). After getting the results from the pilot test, the researchers will be able to figure out what are the concerns of the survey and how to fix them. They will also be able to figure out which questions will be used in the real survey.

The previous researcher suggested using a sample size of 50 respondents for the pre-test (Su, Swanson & Chen, 2016). The pilot test for our study is conducted from 15 June 2022 to 21 June 2022, which is about one week. 50 sets of questionnaires were sent to 50 respondents which come from different state in Malaysia. Lastly, after collected primary data from 50 respondents, it will be measure using SPSS to examine for any discrepancies and ensure the questionnaire's accuracy and reliability.

3.5 Proposed Data Analysis Tool

According to Arora (2021), Data analysis is the systematic use of statistical and logical methods to explain the scope of the data, modularize the information structure, compress the data representation, demonstrate through pictures, tables, and graphs, and analyze statistical tendencies, probability data, and extract useful conclusions. In this research, SPSS Statistical Software will be used to analyze the data collected from the questionnaire. It helps this study to do data analysis, such as Reliability Test, Multicollinearity Test and Multiple Regression Analysis.

3.5.1 Descriptive Analysis

Descriptive analysis is the technique of summarizing or describing a data set using statistical methods (Bush, 2020). Descriptive analysis is also defined as descriptive analytics or descriptive statistics. Descriptive analysis can be classified into two types, which are measure of central tendency and measure of variability. However, measures of central tendency are usually to be used, such as mean, median, and mode (Hayes, 2022). The measurement in this study will include mean, standard deviation, frequency and percentage. furthermore, all the variables data will be converted and showed in table, pie chart and bar chart.

3.5.2 Scale Measurement

3.5.2.1 Reliability Test

The reliability test determines the validity and reliability of a scale through a series of tests. According to Livingston, Carlson, Bridgeman, Golub-Smith and Stone (2018), the reliability of test results throughout several testing dates, various test versions, or various raters evaluating the participants' response is referred to as reliability test. The reliability of scale may be attribute to the freedom of random measurement error (Pallant, 2020). The reliability of scale can be measured in two ways, which are test-

retest reliability and internal consistency. In this study we are going to use the internal consistency indicator and it is measured using Cronbach's coefficient alpha.

Table 3.2: "Cronbach's Alpha" Rule of Thumb

Cronbach's Alpha	Level of Reliability
$\alpha < 0.6$	Poor Reliability
$0.6 \leq \alpha \leq 0.7$	Fair Reliability
$0.7 \leq \alpha \leq 0.8$	Good Reliability
$0.8 \leq \alpha \leq 0.9$	Excellent Reliability

Source: Sekaran & Bougie (2016)

The table shows Cronbach's Alpha and level of reliability. Cronbach's Alpha determine the average correlation between the scale's component. Form values between 0 to 1, higher values reflecting more reliability. Different types of scales need various levels of reliability, according to Sekaran & Bougie (2016), a minimum value for level of reliability is 0.6. the level of reliability which less than 0.6 is consider poor reliability; 0.7 to 0.8 is good reliability and 0.8 to 0.9 is excellent.

3.5.2.2 Multicollinearity Test

According to Ali, Ali and Adan (2013), multicollinearity test is the condition whereby two independent variables have a strong correlation with one another. The variance inflation factor (VIF) is a tool used to measure multicollinearity test. The tolerance value and variance inflation factor (VIF) are compared to the needed value in order to perform multicollinearity test (Pawirosumarto, Sarjana & Muchtar, 2017). Multicollinearity do not exists between the variables if the value of VIF falls between 1 to 5 (Shrestha, 2020). A tolerance close to 1 implies little multicollinearity, whereas a

tolerance close to 0 indicates that multicollinearity could cause a concern (Senaviratna & Cooray, 2019).

3.5.2.3 Multiple Linear Regression Analysis

According to Aldrich (2018), multiple linear regression is applied when there are numerous independent variables and one dependent variable. The focus of multiple regression is on how the changes in independent variables affected dependent variables. Since there are five independent variables and one dependent variable, this analytic method may be used in this research.

The model is evaluating based on the Model Summary Table, and Coefficient Table. R-square and F-test are showed in the Model Summary Table. R-square indicates the total amount of variance in dependent variable that can be accounted for by all independent variables (Pallant, 2020). Using the F-test, we may determine if changes of model in the dependent variable, it can be explained significantly or not. The model can be defined as significant if the p-value of F-test is less than 10% (Pallant, 2020).

Model below shows the equation of multiple linear regression:

$$OPF_i = \beta_0 + \beta_1\, BEHAVIOR_i + \beta_2\, TECH_i + \beta_3\, LAW_i + \beta_4\, HOURS_i + u_i$$

Where, OPF_i = Online Purchase Fraud
$BEHAVIOR_i$ = Consumer Online Shopping Behaviour
$TECH_i$ = E-commerce Technology
LAW_i = E-commerce Law
$HOURS_i$ = Hours Spent Online
u_i = Error Term

This equation will be used in the Multiple Linear Regression Analysis for this study. The equation is stated as how does the independent variables on the right, affecting the dependent variable on the left, which is identical with the hypothesis in Chapter 2.

3.6 Construct Measurement

Steven's scale of measurement contains four categories which are nominal, ordinal, interval, and ratio. For the following study, only three of them will be used in the questionnaire which are nominal, interval, and ratio.

3.6.1 Nominal Scale

The nominal scale divides observations into categories depending on their equivalence. The numbers assigned to the categories are merely labels. Gender, eye colour, and race are examples of nominal scale data.

3.6.2 Ordinal Scale

Observations on the ordinal scale are sorted in order of magnitude. The numbers allocated to groups convey a "more than" relationship, but no indication of how much greater. Only the order is indicated by the numbers. Letter grades, rankings, and achievement are examples of ordinal scale measures (low, medium, high).

3.6.3 Interval Scale

Numbers are also used in interval scale data to indicate order and to represent a meaningful relative distance between places on the scale. There is no absolute zero on interval scales. The IQ standardized test is an example of an interval scale.

3.6.4 Ratio scale

A ratio scale, like a number scale, employs numbers to indicate order and represents a meaningful relative distance between the scale's points. There is an absolute zero on a ratio scale. Age and years of experience are two examples of ratio metrics.

Table 3.3: Summary of Construct Measurement of Survey Question

Section		**Factor**	**Measurement scale**	**Likert Scale**
A	Q1	Do you shop online	Nominal	-
	Q2	Gender	Nominal	-
	Q3	Age	Ratio	-
	Q4	Nationality	Nominal	
	Q5	Ethnic	Nominal	-
	Q6	State	Nominal	-
	Q7	Educational qualification	Nominal	-
	Q8	Employment status	Nominal	-
	Q9	Monthly allowance or salary	Ratio	-
	Q10	How often do you shop online?	Ratio	-
	Q11	Which online platform do you prefer?		-
B		Consumer Online Shopping Behaviour	Interval	1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree
C		E-commerce Technology	Interval	
D		The Virtual Quality of Network	Interval	
E		E-Commerce Law	Interval	
F		Hours Spent Online	Interval	
G		Online Purchase Fraud	Interval	

3.7 Conclusion

In conclusion, this chapter discussed how the research methodology has been conducted. All the process will be conducted in this research and used the SPSS software for analysis the data.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

The purpose for our research in this chapter is to carry out, analysis, summarize and interpret the data of the survey via google form online. After data collection, analysis will be done by using SPSS system. The result of the responses will be summarized and separate into the descriptive analysis, inferential analysis and multiple regression analysis in order to interpret our research data from the collected data.

4.1 Descriptive Analysis

Descriptive statistics is a data transformation that identifies and defines the characteristics of variables (Zikmund, Babin, Carr, & Griffin, 2009). It means giving information in a clear and fair manner. A descriptive coefficient is used to give an overview of a set of data that may represent the entire population or just a sample of it. In our research, there is eleven questions involved in the demographic part. All the variables data will be converted and shown in the pie chart, table and bar chart.

4.1.1 Demographic Profile of Respondents

Eleven demographic characteristics of interviewees will be discussed in this analysis, including: 1) do you shop online; 2) gender; 3) age group; 4) nationality; 5) ethnic; 6) state; 7) education qualification; 8) employment status 9) allowance or salary; 10) frequency of shop online; 11) preference of online shopping platform. The data are from Section A of the

questionnaire survey and the results of all descriptive analysis will be discussed in the following subsections.

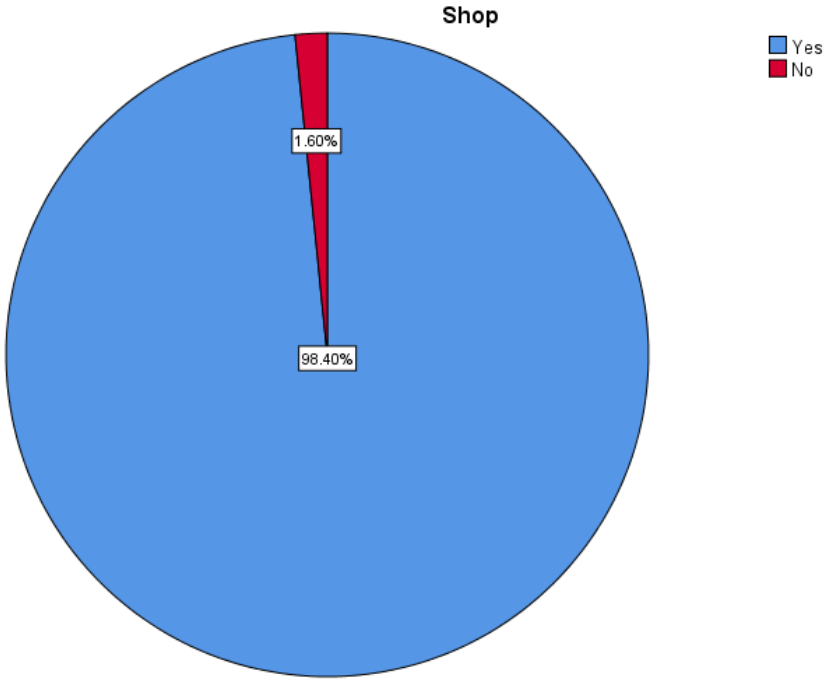
4.1.1.1 Do you shop online?

Table 4.1: Do you shop online

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	492	98.4	98.4	98.4
	No	8	1.6	1.6	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.1: Do you shop online



Source: Developed from SPSS system

As shown in Table 4.1 and Figure 4.1, they show 492 respondents have shopped online and 8 respondents have never shopped online. There are 98.4% of respondents have shopped online and 1.6% of respondents have

never shopped online. The result indicated that most people are shopping online.

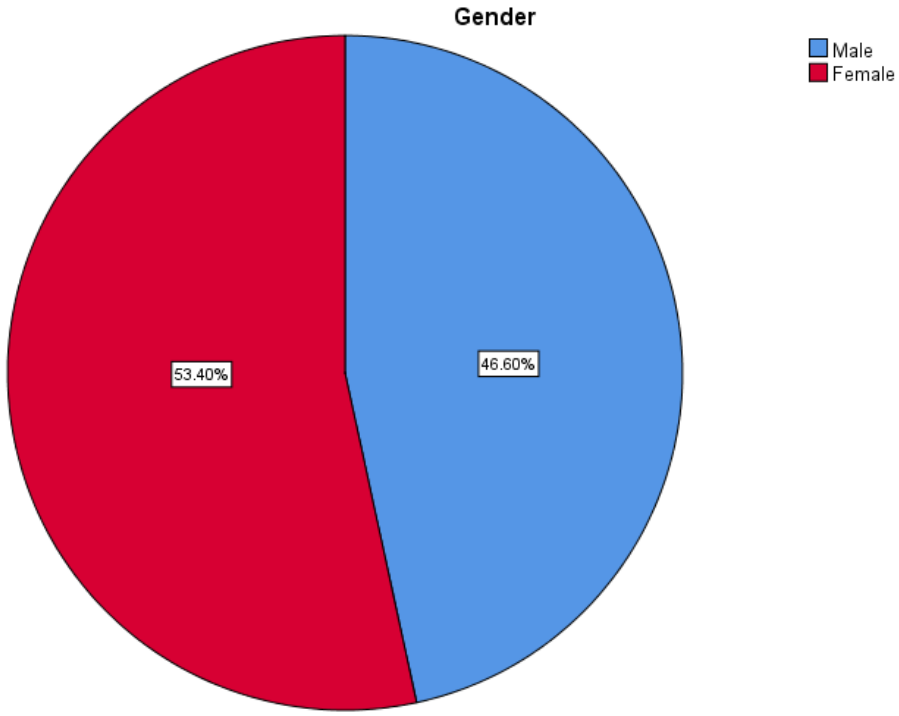
4.1.1.2 Gender

Table 4.2: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	233	46.6	46.6	46.6
	Female	267	53.4	53.4	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.2: Gender



Source: Developed from SPSS system

Table 4.2 and Figure 4.2 show that there are 233 male respondents and 267 female respondents in a total of 500 questionnaires collected from

respondents. Males are 46.6 % and females are 53.4%. The data table provided above shows that the number of female respondents is slightly higher than male respondents.

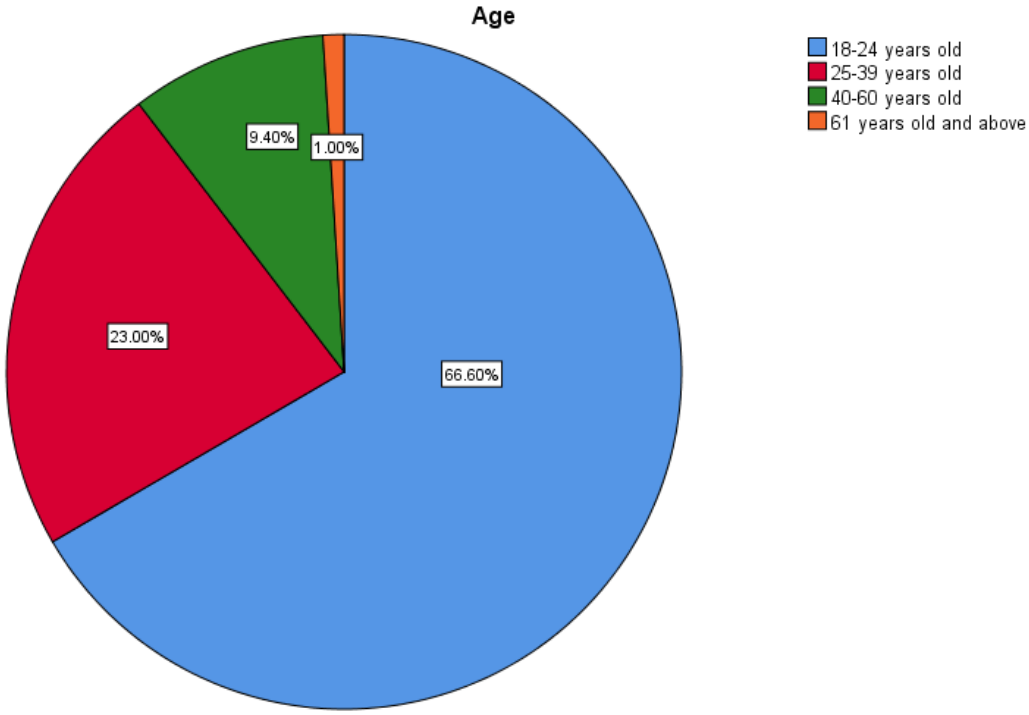
4.1.1.3 Age

Table 4.3: Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24 years old	333	66.6	66.6	66.6
	25-39 years old	115	23.0	23.0	89.6
	40-60 years old	47	9.4	9.4	99.0
	61 years old and above	5	1.0	1.0	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.3: Age



Source: Developed from SPSS system

Based on Table 4.3 and Figure 4.3, they indicate the number and percentage of respondents from various age groups that filled out the questionnaire for this research. According to the above result, this study included respondents from four different age ranges. Among the 500 respondents, 333respondents (66.6%) are aged between 18 to 24 years old which accounts the largest group for this research, followed by respondents who aged 25 to 39 years old have 115 respondents (23%). There were 47 respondents (9.4%) which were between 40 to 60 years old. Lastly, the oldest group of responders, with age of 61 and above, made up just 1% of the total.

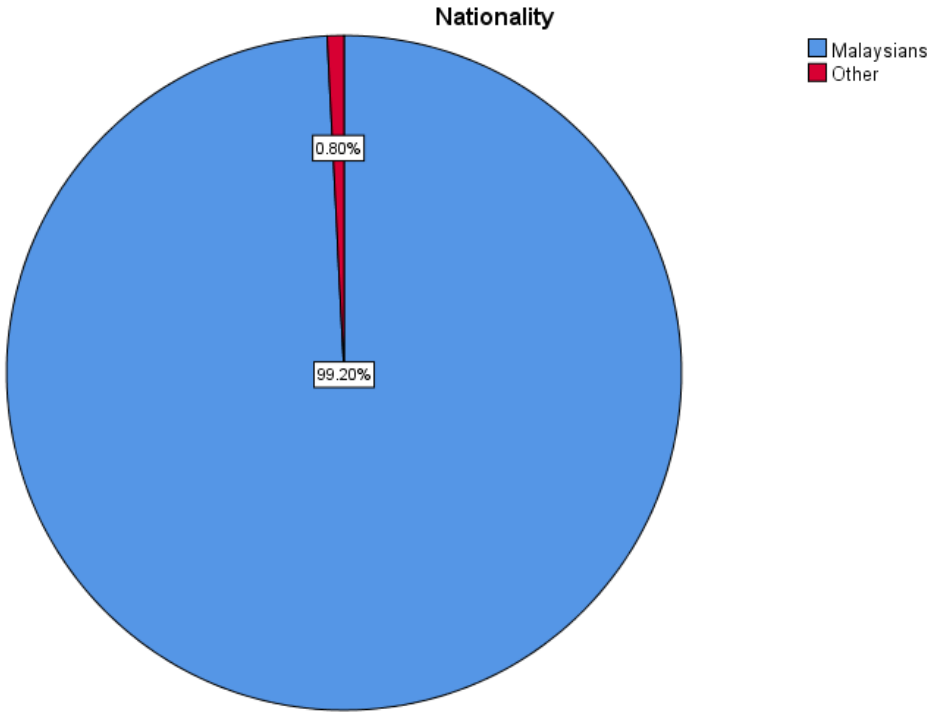
4.1.1.4 Nationality

Table 4.4: Nationality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Malaysians	496	99.2	99.2	99.2
	Other	4	0.8	0.8	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.4: Nationality



Source: Developed from SPSS system

Based on Figure 4.4 that developed with Table 4.4, 496 respondents out of the total of 500 respondents were Malaysian (99.2%), 4 respondents were other nationalities (0.8%) such as Indonesia, China, and Singapore.

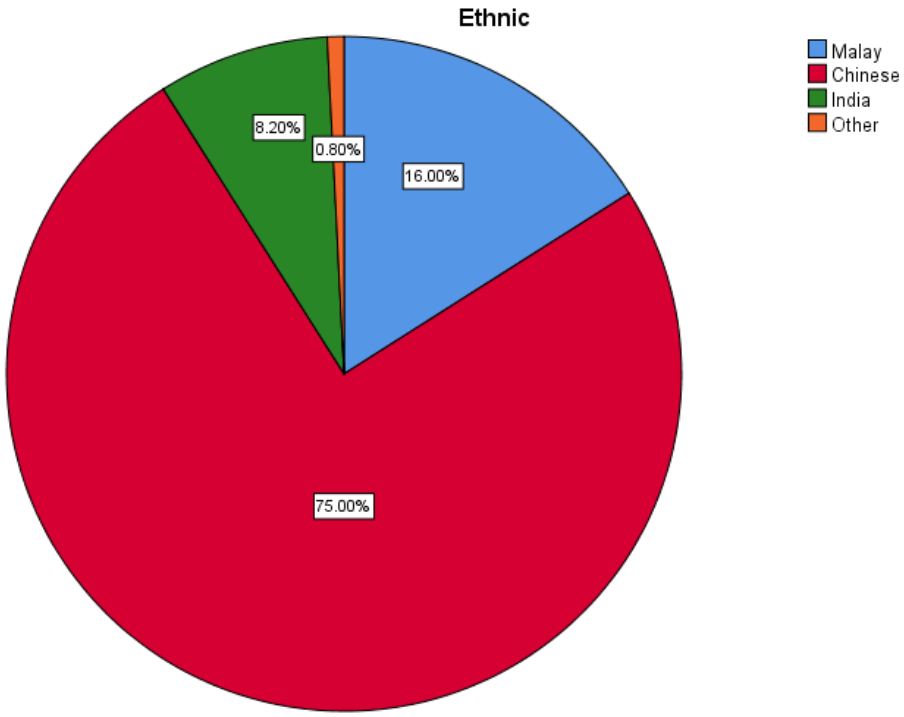
4.1.1.5 Ethnic

Table 4.5: Ethnic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Malay	80	16.0	16.0	16.0
	Chinese	375	75.0	75.0	91.0
	India	41	8.2	8.2	99.2
	Other	4	0.8	0.8	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.5: Ethnic



Source: Developed from SPSS system

Table 4.5 and Figure 4.5 show the percentage of respondents from various ethnic groups who participated in the online questionnaires. According to the data shown above, 375 of the total 500 respondents (75%) are Chinese, 80 Malay respondents (16%), 41 Indian respondents (8.2%) as well as 4 respondents (0.8%) are Bumiputera Sarawak, Siam, Indonesian and Eurasian. Based on the results above, most of the respondents of this research are Chinese respondents. Due to the respondents of the survey being mainly from urban centres in the Malaysia Peninsular west coast states/territory of Johor, Kuala Lumpur, Selangor, Perak and Penang and those having better IT infrastructure, many of the respondents are from Malaysian Chinese ethnic background.

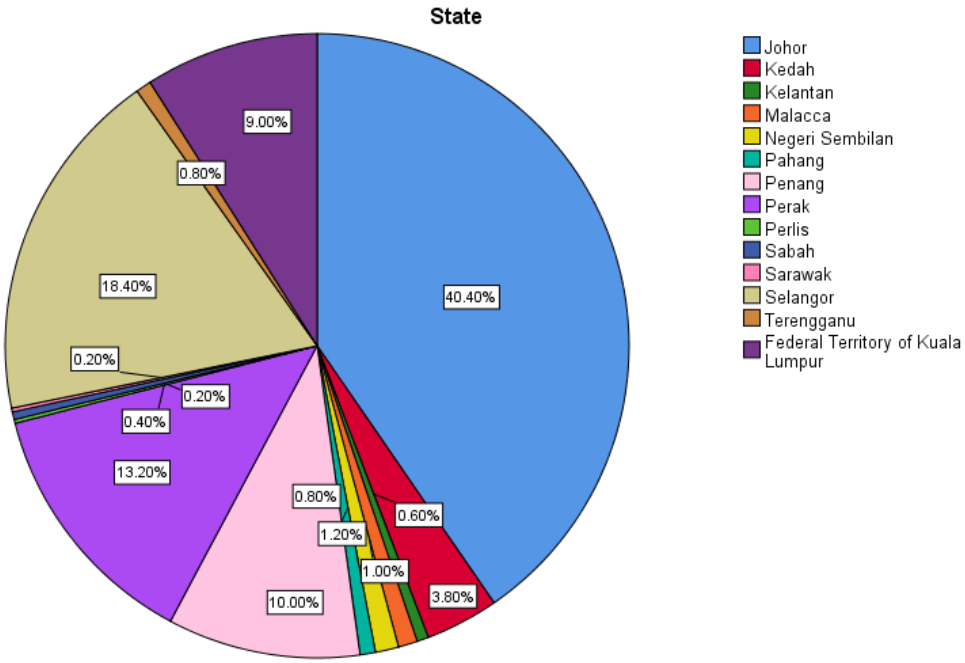
4.1.1.6 State

Table 4.6: State

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Johor	202	40.4	40.4	40.4
	Kedah	19	3.8	3.8	44.2
	Kelantan	3	0.6	0.6	44.8
	Malacca	5	1.0	1.0	45.8
	Negeri Sembilan	6	1.2	1.2	47.0
	Pahang	4	0.8	0.8	47.8
	Penang	50	10.0	10.0	57.8
	Perak	66	13.2	13.2	71.0
	Perlis	1	0.2	0.2	71.2
	Sabah	2	0.4	0.4	71.6
	Sarawak	1	0.2	0.2	71.8
	Selangor	92	18.4	18.4	90.2
	Terengganu	4	0.8	0.8	91.0
	Federal Territory of Kuala Lumpur	45	9.0	9.0	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.6: State



Source: Developed from SPSS system

Table 4.6 and Figure 4.6 show the percentage of respondents from various states in Malaysia who participated in the online questionnaires. From the data shown above, we may infer that 202 of the 500 respondents are located in Johor (40.4%), 92 respondents from Selangor (18.4%), 66 respondents from Perak (13.2%), 50 respondents from Penang (10%), 45 respondents from Federal Territory of Kuala Lumpur (9%), 19 respondents from Kedah (3.8%), 6 respondents from Negeri Sembilan (1.2%), 5 respondents from Malacca (1%), 4 respondents from Terengganu and Pahang respectively (0.8% for each), 3 respondents from Kelantan (0.6%), 2 respondents from Sabah (0.4%), and 1 respondents from Sarawak and Perlis respectively (0.2% for each). About 90% of respondents are from Johor, Kuala Lumpur, Selangor, Perak and Penang.

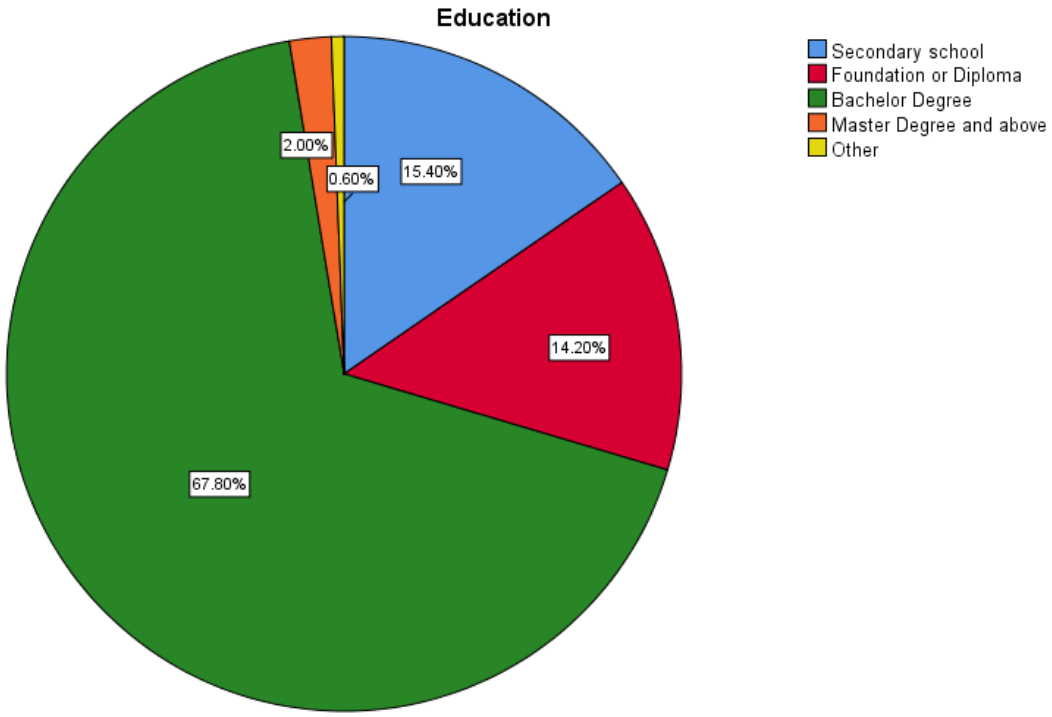
4.1.1.7 Education Qualification

Table 4.7: Education Qualification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary school	77	15.4	15.4	15.4
	Foundation or Diploma	71	14.2	14.2	29.6
	Bachelor Degree	339	67.8	67.8	97.4
	Master Degree and above	10	2.0	2.0	99.4
	Other	3	0.6	0.6	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.7: Education Qualification



Source: Developed from SPSS system

Above table and figure show the education qualification for the total of 500 respondents. The majority of respondents, which is 339 respondents (67.8 %) have a Bachelor's Degree, followed by 77 of respondents with Secondary School level (15.4%), 71 respondents with Foundation or Diploma (14.2%), 10 respondents with Master's Degree and above (2%), and 3 respondents

(0.6%) with other qualifications such as STPM and Professional certification.

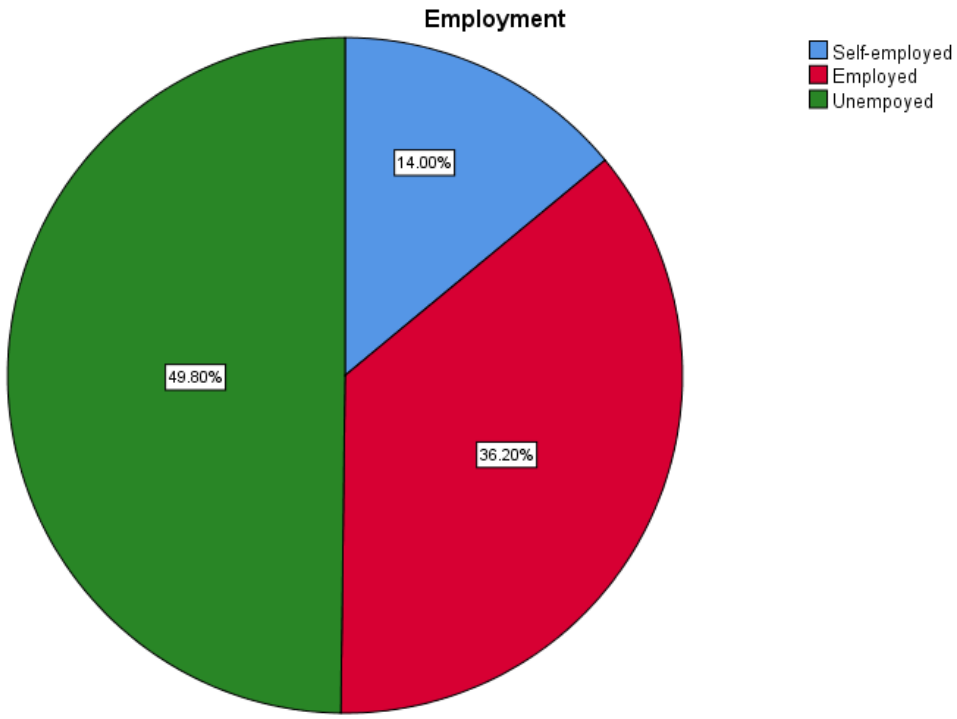
4.1.1.8 Employment Status

Table 4.8: Employment Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Self-employed	70	14.0	14.0	14.0
	Employed	181	36.2	36.2	50.2
	Unemployed	249	49.8	49.8	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.8: Employment Status



Source: Developed from SPSS system

Table 4.8 and Figure 4.8 show the employment status of respondents who participated in the questionnaires. Based on the results, there are 249 respondents who are unemployed (49.8%), 181 respondents who are employed (36.2%), and 70 respondents who are self-employed (14%).

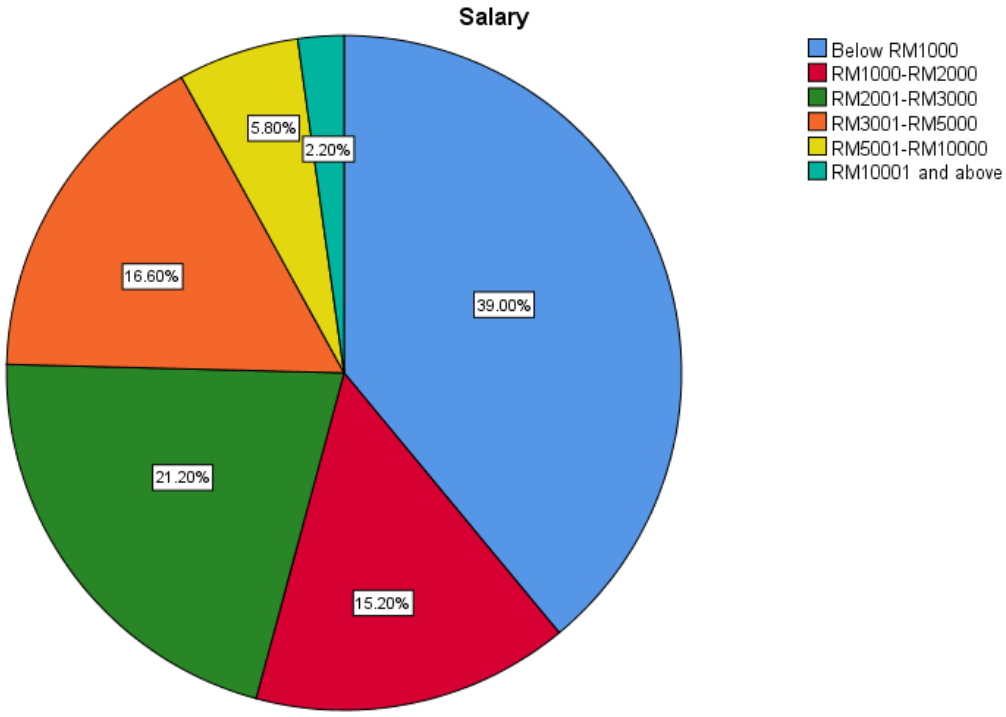
4.1.1.9 Allowance or Salary

Table 4.9: Allowance or Salary

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below RM1000	195	39.0	39.0	39.0
	RM1000-RM2000	76	15.2	15.2	54.2
	RM2001-RM3000	106	21.2	21.2	75.4
	RM3001-RM5000	83	16.6	16.6	92.0
	RM5001-RM10000	29	5.8	5.8	97.8
	RM10001 and above	11	2.2	2.2	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.9: Allowance or Salary



Source: Developed from SPSS system

As shown in Table 4.9 and Figure 4.9, there are 195 respondents who have monthly allowance or salary below RM1,000 (39%), 106 respondents (21.2%) who earn between RM2,001 and RM3,000, 83 respondents earn between RM3,001 and RM5,000 (16.6%), 76 respondents who earn between RM1,000 and RM2,000 (15.2%), 29 respondents who earn between RM5,001 and RM10,000 (5.8%) and 11 respondents who earn RM10,001 and above (2.2%).

4.1.1.10 Frequency of shop online

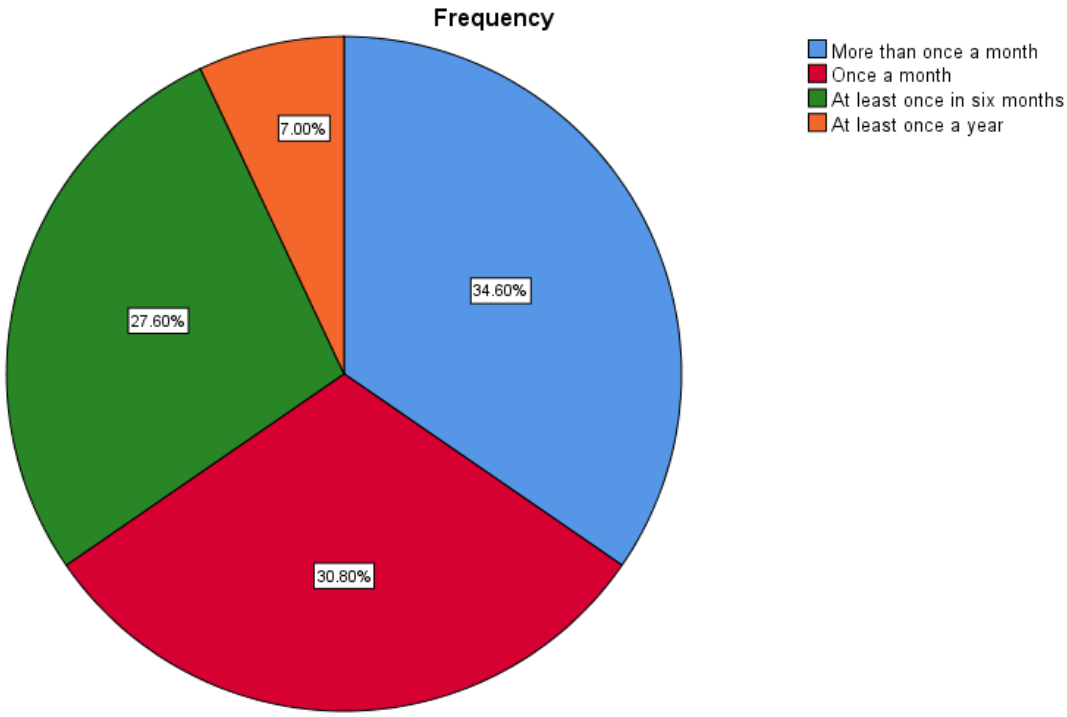
Table 4.10: Frequency of shop online

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	More than once a month	173	34.6	34.6	34.6
	Once a month	154	30.8	30.8	65.4
	At least once in six months	138	27.6	27.6	93.0

	At least once a year	35	7.0	7.0	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.10: Frequency of shop online



Source: Developed from SPSS system

Above show the frequency of shopping online of respondents. Based on the results, there are 173 respondents who shop online more than once a month (34.6%), 154 respondents who shop online once a month (30.8%), 138 respondents who shop online at least once in six months (27.6%), and 35 respondents who shop online at least once a year (7.0%).

4.1.1.11 Preference of online shopping platform

Table 4.11 Preference of online shopping platform

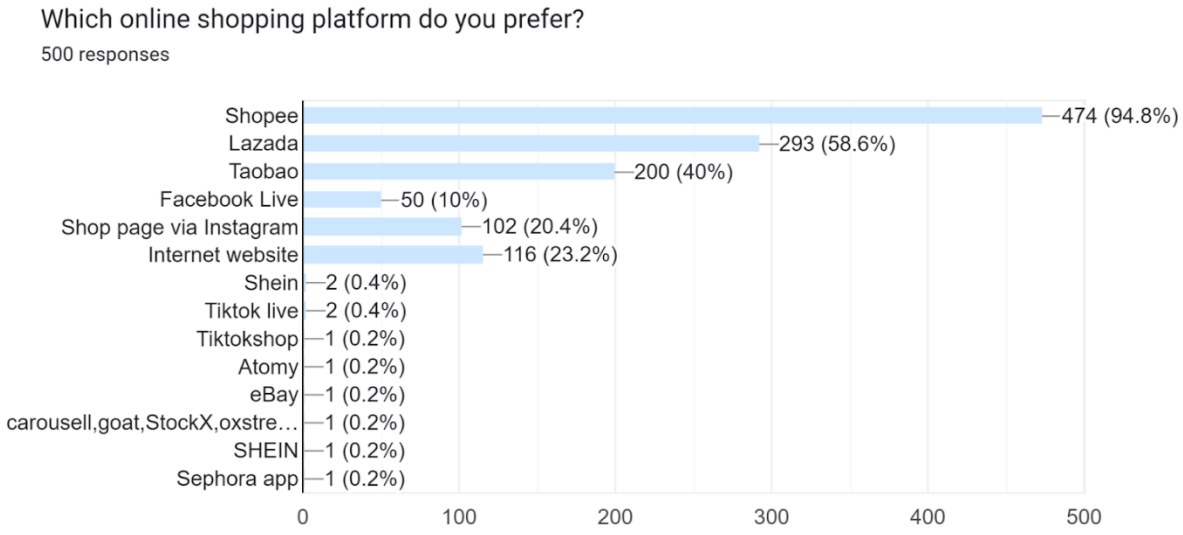
	Responses		
	N	Percent	Percent of Cases

Platform[a]	Shopee	474	38.0%	94.8%
	Lazada	294	23.6%	58.8%
	Taobao	200	16.1%	40.0%
	Facebook	50	4.0%	10.0%
	Instagram	102	8.2%	20.4%
	Website	116	9.3%	23.2%
	Other	10	0.8%	2.0%
Total		1246	100.0%	249.2%

a. Dichotomy group tabulated at value 1.

Source: Developed from SPSS system

Figure 4.11 Online shopping platform



Source: Developed from Google Form

Above show the online shopping platform preferred by respondents. Based on the results, there are 474 respondents who prefer Shopee (38%), 294 respondents who prefer Lazada (23.6%), 200 respondents who prefer Taobao (16.1%), 50 respondents who prefer Facebook Live (4.0%), 102

respondents who prefer shop page via Instagram (8.2%), 116 respondents who prefer Internet website (9.3%), and 10 respondents who prefer other online shopping platform (0.8%) such as Shein, Tiktok Live, Atomy and so on.

4.1.2 Central Tendencies Measurement of Construct

4.1.2.1 Consumer Online Shopping Behaviour

Table 4.12 Consumer Online Shopping Behaviour

No.	Statement	Mean	Standard Deviation	Mean Ranking
COSB1	I choose online products based on the convenience of purchase.	4.4472	0.68684	2
COSB2	I buy product from a well-designed online website.	4.2154	0.84086	3
COSB3	I read reviews before buying a product online.	4.5894	0.70359	1
COSB4	I choose fashion products online based on my lifestyles.	4.2012	0.89475	4

Table 4.12 shows how the respondents responded to 4 questions regarding consumer online shopping behaviour. The COSB3 whit the highest mean (4.5894), and its standard deviation of 0.70359 is the third highest. COSB1 has the lowest standard deviation (0.68684) and the second highest mean (4.4472). As for standard deviation, COSB2 ranks second, at 0.84086, and has the third-highest mean value, at 4.2154. The standard deviation is the highest (0.89475) for COSB4, yet its mean value is the lowest (4.2012).

4.1.2.2 E-commerce Technology

Table 4.13 E-commerce Technology

No.	Statement	Mean	Standard Deviation	Mean Ranking
ECT1	E-commerce systems are good in maintaining data accuracy.	4.0041	0.90032	1
ECT2	An order cannot be denied once it has been placed. (Eg. After the buyer places an order, the seller cannot reject the order)	3.5427	1.22608	4
ECT3	I think that most business websites know enough about technology to handle online transactions. (Eg. Business involve security technology to ensure the transaction safety)	3.9289	0.96845	2
ECT4	My financial information will be abused when I make online payments.	3.3537	1.07220	5
ECT5	I feel that my personal information provided to retailers has been disclosed without my consent.	3.6654	0.65214	3

According to the Table 4.13, there are 5 statements used in questionnaire to question respondents about the virtual quality of network. ECT1 has the highest value of mean of 4.0041, with standard deviation of 0.90032. The second highest is ECT3 with average of 3.9289 and standard deviation of 0.96845. Then, ECT5 is the third highest average score which is 3.6654, with the lowest standard deviation, 0.65214. The following is ECT2 which has mean value of 3.5427 and the highest standard deviation of 1.22608. Lastly, the lowest mean value is ECT4, which has mean value of 3.3537 and standard deviation value of 1.07220

4.1.2.3 The Virtual Quality of Network

Table 4.14 The Virtual Quality of Network

No.	Statement	Mean	Standard Deviation	Mean Ranking
VQN 1	Most e-commerce platforms provide enough information to evaluate a product.	3.8923	0.88584	4
VQN 2	I only shop online if the items are visually appealing.	3.9228	1.0021	3
VQN 3	I only shop online if the stores appear to be well-organized.	4.2033	0.86299	1
VQN 4	I only buy from internet retailers if the information is simple to understand. (Eg. If product information is confusing or difficult to determine, I would search another option.)	4.1565	0.89003	2

According to the Table 4.14, there are 4 statements were used in questionnaire to question respondents about the virtual quality of network. Mean is 4.2033 for VQN3, and the standard deviation is 0.86299, which are both the greatest and lowest respectively. The second highest mean and standard deviation, which are 4.1565 and 0.89003 respectively, belongs to VQN4. Then, in contrast to its third-highest mean score (3.9228), VQN2 has the biggest standard deviation (1.0021). VQN1 has the third largest standard deviation (0.88584) and the lowest mean (3.8923).

4.1.2.4 E-commerce Law

Table 4.15 E-commerce Law

No.	Statement	Mean	Standard Deviation	Mean Ranking
ECL1	Shopping online is risky because there is no strict cyber law to punish fraudsters. (Eg. Privacy risk, quality risk etc.)	1.9045	0.89637	4

ECL2	Internet user's privacy is severely violated.	2.2683	0.90775	2
ECL3	Despite all of today's security measures, internet shopping platforms are still not sufficiently protected.	1.9675	0.83639	3
ECL4	As a consumer, my personal information can be disclosed by the seller without my consent.	2.6199	1.31103	1

There are 4 statements were used in questionnaire to question respondents about e-commerce law as shown in Table 4.15. ECL4 have the highest mean and standard deviation with the value of 2.6199 and 1.31103 respectively. The second highest mean and standard deviation value is ECL2 with 2.2683 and 0.90775 each. The mean of ECL3 is 1.9675, which is third highest, and its standard deviation is 0.83639, which is the lowest. Lastly, the lowest mean is ECL1 with 1.9045 and it has third highest standard deviation value with 0.89637.

4.1.2.5 Hours Spent Online

Table 4.16 Hours Spent Online

No.	Statement	Mean	Standard Deviation	Mean Ranking
HSO 1	I used to go online to access the internet or the world wide web.	4.25	0.82508	1
HSO 2	I spend more than 8 hours on the Internet per week.	4.0915	1.14426	2
HSO 3	There are risks when I spend time online. (Eg. Social risk, financial risk etc.)	3.9573	1.01326	3
HSO 4	Spending more time online will increase the chance of risky situation. (Eg. Social risk, financial risk etc.)	3.7886	1.085	5

HSO 5	Spend time online without proper supervision will increase opportunities for crime. (Eg. In order to avoid crime, it is acceptable to be supervised when spending time online)	3.8516	1.05082	4

Based on Table 4.16 it clearly shown the respondents responded to 5 questions regarding hours spent online. The standard deviation is lowest for HSO1, yet it has the highest mean, which is 4.25 and 0.82508 respectively. HSO2's mean value of 4.0915 ranks second highest, while its standard deviation of 1.14426 ranks highest. The third highest mean and the fourth highest standard deviation is HSO3 with 3.9573 and 1.01326. HSO5 have the fourth highest mean of 3.8516 but third highest standard deviation of 1.05082. The lowest mean is HSO4 with 3.7886 but the second highest standard deviation of 1.085.

4.1.2.6 Online Purchase Fraud

Table 4.17 Online Purchase Fraud

No.	Statement	Mean	Standard Deviation	Mean Ranking
OPF1	I can identify the latest online purchase fraud. (Eg. Fake online shopping app, fake advertisement etc.)	3.8211	0.99721	1
OPF2	I might not receive the products/services after I made online purchase.	3.5386	1.10568	2
OPF3	I used to receive a fake product that I ordered online.	3.0183	1.39305	4
OPF4	I used to buy tickets for an event, concert or travel but it turned out the tickets were not genuine.	2.7622	1.47565	5
OPF5	I used to buy a product/service at a certain price but later being charge more.	3.0996	1.36595	3

Table 4.17 clearly shown the respondents responded to 5 questions regarding the dependent variable which is online purchase fraud. Standard deviation is lowest at 0.99721 for OPF1, while mean is greatest at 3.8211. OPF2 has the fourth greatest standard deviation (1.10568) and the second highest mean (3.5386). OPF5 have the third highest mean and standard deviation with 3.0996 and 1.36595 respectively. The fourth highest average score is OPF3 with 3.0996 but the second highest standard deviation with 1.39305. The lowest mean is OPF4 with 2.7622 but the highest standard deviation with 1.47565.

4.2 Scale Measurement

In this research project, SPSS software has been used to test reliability in order to evaluate the dependent variable which is online purchase fraud and independent variable which are consumer online shopping behavior, e-commerce technology, the virtual quality of network, e-commerce law and hours spent online. The reliability test involves 500 participants.

4.2.1 Reliability Test

Cronbach’s alpha has been used on reliability test in order to guarantee that the measurements include no errors and that all of the questionnaire's variables exhibit internal consistency. It is expressed between 0 and 1. When there is high reliability, the Cronbach's alpha value is close to 1. According to Sekaran & Bougie (2016), a minimum value for level of reliability is 0.6. the level of reliability which less than 0.6 is consider poor reliability; 0.7 to 0.8 is good reliability and 0.8 to 0.9 is excellent.

Table 4.18: Reliability Analysis Outcome

Variables	Topic	Number of items	Cronbach's Alpha	Results of reliability
Dependent variable	Online Purchase Fraud	5	0.774	Good
Independent variables	Consumer Online Shopping Behavior	4	0.648	Fair
Independent variables	E-commerce Technology	5	0.720	Good
Independent variables	The Virtual Quality of Network	4	0.653	Fair
Independent variables	E-commerce Law	4	0.623	Fair
Independent variables	Hours spent online	5	0.724	Good

Source: Data generated by SPSS Statistics, Version 25.0

Table 4.18 consists of the reliability result for all the variables. According to Sekaran & Bougie (2016), the level of reliability must be at least 0.6. The threshold for trustworthiness is set at 0.60. The reliability level goes from low (less than 0.6) through fair (0.6 to 0.7), good (0.7 to 0.8), and excellent (0.8 to 0.9).

Cronbach's alpha for each of the variables is more than 0.60. It also showed the level of internal consistency respectively for all the variables. The Cronbach's Alpha values for consumer online shopping behaviour, the virtual quality of network, and e-commerce law are 0.648, 0.653, and 0.623 respectively. Since their Cronbach's Alpha values are between 0.6 and 0.7, they are considered to have fair reliability. The Cronbach's Alpha for the dependent variable online purchase fraud was 0.774, 0.724 for the independent variable, hours spent online, and 0.720 for e-commerce technology. The value of Cronbach's Alpha for the three variables are greater than 0.7, which mean the three variables in this study are good reliability.

Table 4.19: Reliability Analysis Outcome (Combined)

Variables	Cronbach's Alpha
Online Purchase Fraud, Consumers Online Purchase Behavior, E-commerce Technology, The Virtual Quality of Network, E-commerce Law, and Hours Spent Online	0.773

Source: Data generated by SPSS Statistics, Version 25.0

Table 4.2.2 shows the Cronbach's alpha of combined 5 independent variables and dependent variable. The Cronbach's alpha of the combined variables is 0.773, which shows good reliability.

4.3 Multicollinearity Test

Table 4.20: Multicollinearity Test

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.173	.320		.540	.589		
	Consumer Online Shopping Behaviour	-.198	.077	-.117	-2.582	.010	.680	1.470

	E-commerce Technology	**.473**	**.065**	**.344**	**7.285**	**.000**	**.627**	**1.595**
	The Virtual Quality of Network	**-.030**	**.073**	**-.021**	**-.414**	**.679**	**.558**	**1.793**
	E-commerce Law	**.313**	**.058**	**.232**	**5.436**	**.000**	**.766**	**1.305**
	Hours Spent Online	**.280**	**.059**	**.214**	**4.754**	**.000**	**.686**	**1.457**

a. Dependent Variable: OPF

Source: Data generated by SPSS Statistics, Version 25.0

Table 4.20 had showed the multicollinearity test for our study. If the variance inflation factor (VIF) is greater than 5 to 10 or the tolerance is less than 0.1 to 0.2, there is multicollinearity (Kim, 2019). In this case, since the value of VIF of all variables are below 4 and the tolerance are above 0.25, multicollinearity does not exist in our study.

4.4 Inferential Analysis

4.4.1 Multiple Linear Regression

Table 4.21 Model Summary

Model Summary			
R Square	Adjusted R Square	F-test	Probability of F test
0.321	0.314	46.049	0.000

Source: Data generated by SPSS Statistics, Version 25.0

Table 4.21 shows that the R square is 0.321, which indicates that the five independent variables can explain 32.1% of the variation in online purchase fraud. In this research, the F-value is 46.049 and the p-value is less than the significant level of 0.001. In this research, the F-value is 46.049 and the p-value is less than the significant level of 0.001. As a result, the model is appropriate for our research.

Table 4.22 Coefficients of variables

Variables	Coefficient	T-test	Probability for t-test
(Constant)	0.173	0.540	0.589
Consumer Online Shopping Behaviour	-0.198	-2.582	0.010
E-commerce Technology	0.473	7.285	0.000
The Virtual Quality of Network	-0.030	-0.414	0.679
E-commerce Law	0.313	5.436	0.000
Hours Spent Online	0.280	4.754	0.000

Source: Data generated by SPSS Statistics, Version 25.0

Table 4.22 shows the p-value is lesser than 0.05 for consumer online shopping behaviour, e-commerce technology, e-commerce law and hours spent online. As a result, the independent factors were shown to be significant in estimating online purchase fraud in Malaysia. The p-value for the virtual quality of network is greater than 0.05 which indicates insignificance. Upon that, the linear equation is developed.:

Online Purchase Fraud = 0.173 - 0.198 Consumer Online Shopping Behaviour + 0.473 E-commerce technology + 0.313 E-commerce Law + 0.280 Hours Spent Online

The linear equation above showed that there is a negative relationship between online purchase fraud and consumer online shopping behaviour. This can be explained that for every increase in consumer online shopping behaviour, online purchase fraud will decrease by 19.8%. There is a positive relationship between online purchase fraud and e-commerce technology, e-commerce law and hours spent online. This can be explained that for every increase in e-commerce technology, e-commerce law and hour spent online, online purchase fraud will increase by 47.3%, 31.3% and 28.0%.

4.5 Conclusion

In sum, we had completed the descriptive analysis, reliability test, multicollinearity test, and multiple linear regression analysis in chapter 4. For the descriptive analysis, we are using a pie chart and table to show the summary of our results of the questionnaire that we collected from our respondents. For reliability test, we test the reliability of all variables using Cronbach's Alpha in SPSS. Also, we had done the multicollinearity test by testing the VIF and tolerance value of the variables using SPSS. We had also used multiple linear regression analysis via SPSS in order to look for the relationship between the dependent variable and independent variable. The P-value, R value, R square value, and Beta value were generated in

the multiple linear regression analysis. The outcome we have used in Chapter 4 will use to conclude and discuss in Chapter 5.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATION

5.0 Introduction

The data generated by SPSS in Chapter 4 will be summarized in Chapter 5 and followed by implication, limitation as well as recommendation. At last, a general conclusion will be discussed.

5.1 Statistical Analysis Summary

The target population for this study is Malaysian citizens who are 18 years old and above including Malay, Chinese, and Indian. Consumer online shopping behaviour, e-commerce technology, e-commerce law, and hours spent online have a significant relationship with online purchase fraud while the virtual quality of network has a negative and insignificant relationship with online purchase fraud. The result revealed that consumer online shopping behaviour, e-commerce technology, e-commerce law, and hours spent online are strong predictors of online purchase fraud while the virtual quality of network is not significant in measuring online purchase fraud.

Table 5.1 Summary of the Statistical Finding (Independent Variable)

Independent Variable	t-value	Coefficient	P-value	Result
Consumer Online Shopping Behaviour	-2.582	-0.198	0.010	Significant
E-commerce Technology	7.285	0.473	0.000	Significant

The Virtual Quality of Network	-0.414	-0.030	0.679	Insignificant
E-commerce Law	5.436	0.313	0.000	Significant
Hours Spent Online	4.754	0.280	0.000	Significant

5.2 Discussions of Major Findings

The aim of this study is to examine the factors contributing to online purchase fraud in Malaysia. This section outlines the study's key findings.

5.2.1 Consumer Online Shopping Behaviour and Online Purchase Fraud

This study's findings showed a negative and statistically significant relationship between online purchase fraud and consumer online shopping behaviours in Malaysia as the coefficient value is -0.198 and the p-value (0.010) is lower than 0.05. Therefore, the alternative hypothesis is acknowledging in this research. Consumer online shopping behaviour such as make online purchase based on convenience of purchase, well-designed online website, and reading reviews before purchase online helps in reducing online purchase fraud. The results show that Malaysian consumers are good at filtering fake reviews and buying cautiously on authentic websites. The more cautious consumers are in online purchasing, the fewer online purchase fraud cases.

5.2.2 E-commerce Technology and Online Purchase Fraud

The outcome from Chapter 4 shows a significant relationship between e-commerce technology and online purchase fraud because the p-value

(<0.000) is less than 0.05. Therefore, the alternative hypothesis is acknowledged in this study. The coefficient value of 0.473 indicates that there is a positive relationship between e-commerce technology and online purchase fraud. According to Online Trust Model, the more trust in the security of e-commerce technology (whether it is secure or not) by consumers, the more likely it is for fraudsters to take advantage of the technology's flaws to deceive consumers, so the chance of being victims of online purchase fraud rise.

5.2.3 The Virtual Quality of Network and Online Purchase Fraud

SPSS outcome indicates that there is an insignificant relationship between the virtual quality of network and online purchase fraud as the p-value (0.679) is greater than 0.05. This means that the virtual quality of network is not the main factor that contributing to online purchase fraud. Hence, the alternative hypothesis is not recognized in this study. The coefficient -0.414 indicates that there is a negative relationship between the virtual quality of network and online purchase fraud. This result is similar to the findings of Zhang et al (2008), which suggesting that the lower the quality of website design, the higher the probability of online purchase fraud.

5.2.4 E-commerce Law and Online Purchase Fraud

Based on the outcome in Chapter 4, it shows that there is a significant relationship between e-commerce law and online purchase fraud as the p-value (< 0.000) is lower than 0.05. Therefore, the alternative hypothesis is recognized in this study. The coefficient of 0.313 indicates that e-commerce law has a positive relationship with online purchase fraud. According to Md Pauzi, Zaini, & Azni (2021), although the government has passed several laws to safeguard the interests of consumers, these laws are ineffective if

customers are unaware of their legal rights and do not arm themselves with the required knowledge. It seems that most customers are unaware of the important things to consider before making a purchase while working with internet retailers. Additionally, individuals are ignorant of their legal options and rights in the event that they fall prey to online fraud. As a result, there is a positive relationship between e-commerce law and online purchase fraud.

5.2.5 Hours Spent Online and Online Purchase Fraud

The outcome in Chapter 4 shows that there is a significant relationship between hours spent online and online purchase fraud as the p-value (<0.000) is lower than 0.05. Therefore, the alternative hypothesis is recognized in this study. The coefficient of 0.280 indicates that hours spent online have a positive relationship with online purchase fraud. This suits the previous study from Pratt et al. (2010), and Reep-van Den Bergh & Junger (2018) in Chapter 2, suggesting that time spent online is contributing to Internet fraud.

5.3 Implication of Study

The practical and theoretical implications of this study will be discussed in this section. The implication of this study will explain the actions that can be taken by the government, parents, society, as well as the consumer itself, in order to avoid online purchase fraud based on the results acquired from Chapter 4.

5.3.1 Practical Implication

The research shows a negative and significant influence between consumer online shopping behaviour and online purchase fraud. The result indicates that good customers' online purchase behaviour such as purchase based on convenience of purchase, well-designed online website, and reading

reviews before purchase online could help in reducing online purchase fraud. Thus, the government should give awareness to everyone to be a smart consumer while shopping online to avoid fraud. For example, the government could spread the information through social media, advertisement, newspaper and also radio, by telling them to shop with the trusted sites, and not click on the link in social media, email or message; instead, straight away buy on a trusted platform like Shopee or Lazada. Also, as a smart consumer, read the review of the goods before purchasing it.

Next, e-commerce technology is positive and significant to online purchase fraud. Nowadays, e-commerce technology is getting more advance and transformative. There are many online shopping platforms introduce their own e-wallet, like ShopeePay, GrabPay, and Lazada Wallet. The purpose of these e-wallet is give convenient to users to pay for goods that they would like to purchase without requiring bank cards or cash. In this case, most of the users would like to link their bank card to the e-wallet account, for the purpose of top-up e-wallet in a more convenient way without using online banking transactions and this incident give opportunity to the hackers to steal all the money in e-wallet. Therefore, government should hold a campaign to raise people's awareness. The campaign can educate Malaysian citizens to protect their own privacy on social media and do not link cards as well as auto reload function on e-wallet. Social media is a treasure for cybercriminals to gather private data and utilise it to guess password make customised phishing emails, and develop other online frauds. They can also hack into an e-wallet and steal all the money in both the e-wallet and bank account.

Furthermore, virtual quality of network shows a negative and insignificant to online purchase fraud. Yet, in many cases, customers' impressions of a website and even their online shopping behaviour will be influenced by the website's perceived features. the government should encourage consumer to purchase goods and services on authorised platform with authorised sellers provided by the platform. Also, there are a lot of cases regarding the users click on the link received from SMS and caused money in their bank has

been stolen. Thus, the government should give awareness to the consumer through advertisement or social media to remind them not to click into the any links received from SMS, WhatsApp or any social media.

Besides, the e-commerce law also shows positive and significant to online purchase fraud. There have been many consumer protection laws approved by the government, but it was meaningless if consumers do not aware of their rights and do not protect themselves with legislation while facing fraud, the law is useless. Hence, consumers should take initiative to learn more about their legal rights, particularly their right to a fair decision, which includes their right to be heard in a consumer's forum and their right to get indemnity from the defaulting party. Also, in order to prevent more consumer to become victims of fraud in online shopping, MPTN and Ministry of Domestic Trade and Consumer Affairs (KDPNHEP) would collaborate to solve consumer concerns (Md Pauzi, Zaini & Azni, 2021).

Lastly, the hours spent online is positive and significant to online purchase fraud. People nowadays spend most of their time on social media, online shopping, games and many more. The more time they spend shopping online, the higher chances they might get into fraud. Parents and guardians play an important role in educating their children about online purchase fraud since they are young. Parents can educate their children the awareness of online purchase fraud by giving them an overview of online purchase fraud, and showing some examples of scam that target kids. Other than parents, education in school also important. The school educator can raise awareness through conducting an “online purchase fraud month”. Throughout the month, the school can hold some campaigns related to the topic such as, talk, essay competition, and poster design competition.

5.3.2 Theoretical Implication

Online Trust Model proposed that the variables, e-commerce technology, the virtual quality of network, and e-commerce law have positive impact on consumer fraud. From the findings, this theory can be used in the research since e-commerce technology, and e-commerce law have a positive relationship with online purchase fraud. However, the virtual quality of the network has a negative relationship with online purchase fraud and it is insignificant in explaining the relationship. This result indicates that the virtual quality of the network is not the main factor that contribute to online purchase fraud that is considered by consumers when they make online purchases. Another variable, consumer online shopping behaviour is used under Online Trust Model in the research to examine the relationship between the behaviour and online purchase fraud. The result shows the negative relationship between consumer online shopping behaviour and online purchase fraud and it is significant. This means that if consumers are cautious when shopping online, there will be less fraud. In conclusion, more specific variables should be used to improve the model when determining factors for online purchase fraud.

Next, Routine Activity Theory (RAT) is used in the research to explain the internet consumer fraud victimisation. In this research, the independent variable, which is hours spent online is used and the result is significant and positive relationship between hours spent online and online purchase fraud. This means that the more hours spent online, the greater the risk and leads to fraud. RAT can clearly explain the factor contributing to online purchase fraud.

5.4 Limitation of the Study

5.4.1 Limitation of Respondents' Demography

The primary data collection is used for this study via questionnaire. Qualitative data and quantitative data are the two overarching classifications

that are used to further categorise the entirety of the data collected and analysed. Survey questionnaire is classified as quantitative data and a systematic questionnaire with closed-ended questions is an integral part of the quantitative research process. It leads to the constrained results that are stated in the research proposal. As a result, the findings cannot necessarily be taken as a broad representation of what actually took place. In addition, the researcher chooses which responses are available, so respondents have a limited number of possibilities to choose from (Chetty, 2016).

5.5 Recommendation for Future Studies

As the quantitative data collection method brought limitation to this study, adding qualitative data collection method is much recommended. The obtaining of qualitative data is an essential component of monitoring and evaluation since it enables future researchers to acquire a more nuanced understanding of a specific issue as well as a more human viewpoint on that issue. To gather qualitative data, future researchers may conduct some interviews with relevant questions. Interviews are simple to conduct and yield accurate findings in a short amount of time. The open-ended questions should be prepared for respondents to get the responses in their own words (Clements, 2021).

5.6 Conclusion

The purpose of this research is to analyse the factors contributing to online purchase fraud in Malaysia. SPSS Statistical Software analyses all the information gathered from the questionnaire through online surveys. The result indicates that the hypothesis for H_{A1}, H_{A2}, H_{A4}, H_{A5} is supported, while only H_{A3} is not supported. However, all the independent variables are significant with online purchase fraud, except the virtual quality of network. In fact, the findings and implications of the study are obtained and properly discussed. Definitely, the study's thesis limitations are examined, and solid recommendations are given as references for future

researchers. In a nutshell, this study might provide future researchers some frame on the factor contributing to online purchase fraud in Malaysia and also assist them in selecting respondents.

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Appendices

Appendix 1: Ethical Approval

UNIVERSITI TUNKU ABDUL RAHMAN DU012(A)
Wholly owned by UTAR Education Foundation Co. No. 578227-M

Re: U/SERC/104/2022

13 May 2022

Ms Thavamalar a/p Ganapathy
Head, Department of Economics
Faculty of Business and Finance
Universiti Tunku Abdul Rahman
Jalan Universiti, Bandar Baru Barat
31900 Kampar, Perak.

Dear Ms Thavamalar,

Ethical Approval For Research Project/Protocol

We refer to your application for ethical approval for your students' research project from Bachelor of Economics (Hons) Financial Economics programme enrolled in course UBEZ3026. We are pleased to inform you that the application has been approved under Expedited Review.

The details of the research projects are as follows:

No.	Research Title	Student's Name	Supervisor's Name	Approval Validity
1.	Factors Influencing Consumer Buying Behavior in a Post-Pandemic Malaysia	1. Perlita Marilyn a/p M.Louis 2. Tai Cheng Yit	Mr Thurai Murugan Nathan	13 May 2022 – 12 May 2023
2.	The Effect of Covid-19 Changes on Digitalization and Purchasing Behavior in Kampar	1. Sharvinthiran a/l Ravinthiran 2. Lee Vern Jun 3. Ho Hui Jian 4. Wong Yi Wei	Dr Au Yong Hui Nee	
3.	Factor of Online Purchase Fraud in Malaysia	1. Chau Yuet Jing 2. Chong Zheng Chao 3. Chun Hui Xuan 4. Lai Shu Mei		
4.	Cryptocurrency Adoption in Malaysia from the Perspective of Young Investors: Students' Perception	1. Chok Ho Yi 2. Chong Wat Son 3. Lam Siew Leong 4. Ng Wing Yee	Ms Koey Ying Yin	

The conduct of this research is subject to the following:

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

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

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

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

Kampar Campus : Jalan Universiti, Bandar Barat, 31900 Kampar, Perak Darul Ridzuan, Malaysia
Tel: (605) 468 8888 Fax: (605) 466 1313
Sungai Long Campus : Jalan Sungai Long, Bandar Sungai Long, Cheras, 43000 Kajang, Selangor Darul Ehsan, Malaysia
Tel: (603) 9086 0288 Fax: (603) 9019 8868
Website: www.utar.edu.my

Should the students collect personal data of participants in their studies, please have the participants sign the attached Personal Data Protection Statement for records.

Thank you.

Yours sincerely,

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

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

Appendix 2: Survey Question

Factors Contributing to Online Purchase Fraud in Malaysia

Dear Respondents,

We are 2022 final year undergraduate students of Bachelor of Economics (Hons) Financial Economics from University Tunku Abdul Rahman (UTAR), Perak. The purpose of this research is to investigate the factor of online purchase fraud in Malaysia. Feel free to contact our project supervisor, Dr. Au Yong Hui Nee (auyonghn@utar.edu.my) if you need further information. Thank you for your precious time and participation.

Yours sincerely,

Chau Yuet Jing	18ABB04275	chauyuetjing@1utar.my
Chong Zheng Chao	18ABB04946	zchao0521@1utar.my
Chun Hui Xuan	19ABB06055	huixuan99@1utar.my
Lai Shu Mei	19ABB06393	laishumei@1utar.my

PERSONAL DATA PROTECTION NOTICE

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

1. Personal data refers to any information which may directly or indirectly identify a person which could include sensitive personal data and expression of opinion. Among others it includes:
   a) Name
   b) Identity card
   c) Place of Birth
   d) Address
   e) Education History
   f) Employment History
   g) Medical History
   h) Blood type
   i) Race
   j) Religion
   k) Photo
   l) Personal Information and Associated Research Data

2. The purposes for which your personal data may be used are inclusive but not limited to:
   a) For assessment of any application to UTAR
   b) For processing any benefits and services
   c) For communication purposes
   d) For advertorial and news
   e) For general administration and record purposes
   f) For enhancing the value of education
   g) For educational and related purposes consequential to UTAR
   h) For replying any responds to complaints and enquiries
   i) For the purpose of our corporate governance
   j) For the purposes of conducting research/ collaboration

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

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

5. UTAR is committed in ensuring the confidentiality, protection, security and accuracy of your personal information made available to us and it has been our ongoing strict policy to ensure that your personal information is accurate, complete, not misleading and updated. UTAR would also ensure that your personal data shall not be used for political and commercial purposes.

Consent:

6. By submitting or providing your personal data to UTAR, you had consented and agreed for your personal data to be used in accordance to the terms and conditions in the Notice and our relevant policy.

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

8. You may access and update your personal data by writing to us at zchao0521@1utar.my.

Acknowledgement of Notice

[ ] I have been notified and that I hereby understood, consented and agreed per UTAR above notice.

Section A: Demographic Information

1. Do you shop online?

Yes	
No	

2. Gender

Male	
Female	

3. Age

18-24 years old	
25-39 years old	
40-60 years old	
61 years old and above	

4. Nationality

Malaysian	
Non-Malaysian (Please specify country below)	
Others	

5. Ethnic

Malay	
Chinese	
India	
Others (please specify)	

6. State

Johor	
Kedah	
Kelantan	
Malacca	
Negeri Sembilan	
Pahang	
Penang	
Perak	
Perlis	
Sabah	
Sarawak	
Selangor	
Terengganu	
Federal Territory of Kuala Lumpur	
Federal Territory of Putrajaya	
Federal Territory of Labuan	

7. Education qualification

Secondary school	

Foundation or Diploma	
Bachelor Degree	
Master Degree and above	

8. Employment status

Self-employed	
Employed	
Unemployed	

9. Monthly income

Below RM1,000	
RM1,000-RM2,000	
RM2,001-RM3,000	
RM3,001-RM5,000	
RM5,001-RM10,000	
RM10,001 and above	

10. How often do you shop online?

More than once a month	
Once a month	
At least once in six months	
At least once a year	

11. Which online platform do you prefer?

Shopee	

Lazada	
Taobao	
Facebook live	
Shop page via Instagram	
Internet website	
Others	

Independent Variables

Section B: Consumer Online Shopping Behaviour

Please read the question carefully and select your answer. For your understanding, (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree.

Consumer Online Shopping Behaviour		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	I choose online products based on the convenience of purchase.	1	2	3	4	5
2	I buy product from a well-designed online website.	1	2	3	4	5
3	I read reviews before buying a product online.	1	2	3	4	5

4	I choose fashion products online based on my lifestyles.	1	2	3	4	5

Section C: E-commerce Technology

Please read the question carefully and select your answer. For your understanding, (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree.

E-commerce Technology		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	E-commerce systems are good in maintaining data accuracy.	1	2	3	4	5
2	An order cannot be denied once it has been placed. (Eg. After the buyer places an order, the seller cannot reject the order)	1	2	3	4	5
3	I think that most business websites know enough about technology to handle online transactions. (Eg. Business involve security technology to ensure the transaction safety)	1	2	3	4	5

4	My financial information will be abused when I make online payments.					
5	I feel that my personal information provided to retailers has been disclosed without my consent.	1	2	3	4	5

Section D: The Virtual Quality of Network

Please read the question carefully and select your answer. For your understanding, (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree.

The Virtual Quality of Network		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Most e-commerce platforms provide enough information to evaluate a product.	1	2	3	4	5
2	I only shop online if the items are visually appealing.	1	2	3	4	5
3	I only shop online if the stores appear to be well-organized.	1	2	3	4	5

4	I only buy from internet retailers if the information is simple to understand. (Eg. If product information is confusing or difficult to determine, I would search another option)	1	2	3	4	5

Section E: E-commerce Law

Please read the question carefully and select your answer. For your understanding, (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree.

E-commerce Law		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Shopping online is risky because there is no strict cyber law to punish fraudsters. (Eg. privacy risk, quality risk etc.).	1	2	3	4	5
2	Internet user's privacy is severely violated.	1	2	3	4	5
3	Despite all of today's security measures, internet shopping platforms are still not sufficiently protected.	1	2	3	4	5

4	As a consumer, my personal information can be disclosed by the seller without my consent.	1	2	3	4	5

Section F: Hours Spent Online

Please read the question carefully and select your answer. For your understanding, (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree.

Hours Spent Online		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	I used to go online to access the internet or the world wide web.	1	2	3	4	5
2	I spend more than 8 hours on the Internet per week.	1	2	3	4	5
3	There are risks when I spend time online. (Eg. social risk, financial risk etc.)	1	2	3	4	5
4	Spending more time online will increase the chance of risky situation. (Eg. social risk, financial risk etc.)	1	2	3	4	5

5	Spend time online without proper supervision will increase opportunities for crime. (Eg. In order to avoid crime, it is acceptable to be supervised when spending time online)	1	2	3	4	5

Dependent Variables

Section G: Online Purchase Fraud

Please read the question carefully and select your answer. For your understanding, (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree.

Online Purchase Fraud		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	I can identify the latest online purchase fraud. (Eg. Fake online shopping app, fake advertisement etc.)	1	2	3	4	5
2	I might not receive the products/services after I made online purchase.	1	2	3	4	5
3	I used to receive a fake product that I ordered online.	1	2	3	4	5

4	I used to buy a product/service at a certain price but later being charge more.	1	2	3	4	5
5	I used to buy tickets for an event, concert or travel but it turned out the tickets were not genuine.	1	2	3	4	5

Appendix 3: SPSS Full Result

Appendix 3.1: Reliability test of Consumer Online Shopping Behaviour:

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	492	98.4
	Excluded[a]	8	1.6
	Total	500	100.0

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

Reliability Statistics

Cronbach's Alpha	N of Items
.648	4

Appendix 3.2: Reliability test of E-commerce Technology:

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	492	98.4
	Excluded[a]	8	1.6
	Total	500	100.0

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

Reliability Statistics

Cronbach's Alpha	N of Items
.720	5

Appendix 3.3: Reliability test of The Virtual Quality of Network:

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	492	98.4
	Excluded[a]	8	1.6
	Total	500	100.0

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

Reliability Statistics

Cronbach's Alpha	N of Items
.653	4

Appendix 3.4: Reliability test of E-commerce Law:

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	492	98.4
	Excluded[a]	8	1.6
	Total	500	100.0

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

Reliability Statistics

Cronbach's Alpha	N of Items
.623	4

Appendix 3.5: Reliability test of Hours Spent Online:

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	492	98.4
	Excluded[a]	8	1.6
	Total	500	100.0

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

Reliability Statistics

Cronbach's Alpha	N of Items
.724	5

Appendix 3.6: Reliability test of Online Purchase Fraud:

Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	492	98.4
	Excluded[a]	8	1.6
	Total	500	100.0

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

Reliability Statistics

Cronbach's Alpha	N of Items
.774	5

Appendix 3.7: Multicollinearity Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.173	.320		.540	.589		
	Consumer Online Shopping Behavior	-.198	.077	-.117	-2.582	.010	.680	1.470
	E-commerce Technology	.473	.065	.344	7.285	.000	.627	1.595
	The Virtual Quality of Network	-.030	.073	-.021	-.414	.679	.558	1.793
	E-commerce Law	.313	.058	.232	5.436	.000	.766	1.305
	Hours Spent Online	.280	.059	.214	4.754	.000	.686	1.457

a. Dependent Variable: Online Purchase Fraud

Appendix 3.8: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.567[a]	.321	.314	.76881

a. Predictors: (Constant), HSO, CC, ECL1345ori, ECT12345ori, VQN

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	136.090	5	27.218	46.049	.000[b]
	Residual	287.258	486	.591		
	Total	423.348	491			

a. Dependent Variable: OPF

b. Predictors: (Constant), HSO, CC, ECL1345ori, ECT12345ori, VQN

Appendix 3.9: Multiple Linear Regression

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.173	.320		.540	.589
	Consumer Online Shopping Behavior	-.198	.077	-.117	-2.582	.010
	E-commerce Technology	.473	.065	.344	7.285	.000
	The Virtual Quality of Network	-.030	.073	-.021	-.414	.679
	E-commerce Law	.313	.058	.232	5.436	.000
	Hours Spent Online	.280	.059	.214	4.754	.000

a. Dependent Variable: OPF

(APPENDIX C)

UNIVERSITI TUNKU ABDUL RAHMAN
FACULTY OF BUSINESS AND FINANCE
UNDERGRADUATE FINAL YEAR PROJECT [FYP]

FYP Progress Report Form

Title of FYP :	**Group No:**
Factors Contributing to Online Purchase Fraud in Malaysia	22J06

Students		**Supervisor**
Name	**ID No**	
Chau Yuet Jing	18ABB04275	Dr. Au Yong Hui Nee
Chong Zheng Chao	18ABB04946	
Chun Hui Xuan	19ABB06055	
Lai Shu Mei	19ABB06393	

Meeting No.	**Date**	**Work "milestones" / meeting report**	**Student's Signature**	**Supervisor's Signature**
		E.g. Progression of Chapter 1 – Research Overview		
1	7th March 2022	Progression of Chapter 1		
2	12th March 2022	Progression of Chapter 1 & 2		
3	18th April 2022	Progression of Chapter 1 & 2		
4	6th May 2022	Progression of Chapter 3		
5	1st August 2022	Progression of Chapter 1, 2 & 3 – Finalize Progression of Chapter 4 – Survey Questionnaire		

6	16th August 2022	Progression of Chapter 4 & 5		
7	17th August 2022	Progression of Chapter 4 & 5		
8	18th August 2022	Progression of Chapter 4 & 5		

(APPENDIX I)

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FACULTY OF BUSINESS AND FINANCE

UNIVERSITI TUNKU ABDUL RAHMAN

Date: 16th September 2022

SUBMISSION OF FINAL YEAR PROJECT /DISSERTATION/THESIS

It is hereby certified that Chau Yuet Jing (ID No: 18ABB04275) has completed this final year project entitled "Factors Contributing to Online Purchase Fraud in Malaysia" under the supervision of Dr. Au Yong Hui Nee from the Department of Economics, Faculty of Business and Finance.

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Yours truly,

Yuet Jing

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(*Chau Yuet Jing)*

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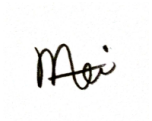

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(*Lai Shu Mei)*

FACTOR CONTRIBUTING TO ONLINE PURCHASE FRAUD IN MALAYSIA

by Yuet Jing Chau

Submission date: 16-Sep-2022 12:47PM (UTC+0800)
Submission ID: 1900859523
File name: 06_Factor_Contributing_to_Online_Purchase_Fraud_in_Malaysia.docx (760.39K)
Word count: 17127
Character count: 94022

CHAPTER 1: RESEARCH OVERVIEW

1. Introduction

This research paper will explore the factors contributing to online purchase fraud such as consumer online shopping behaviour, e-commerce technology, the virtual quality of the network, e-commerce law and hours spent online. The connection between the dependent variable and independent variables will be studied to achieve this research's goal. This research is conducted with the aim to evaluate the factors contributing to online purchase fraud in Malaysia. In this chapter, we will provide an introduction of our research, including research background, problem statement, research objective, research question, hypothesis of study and significance of the study. Structure of the chapter will highlight the point of each chapter.

1. Research Background

The digital economy is defined as an economic activity that is conducted via the use of electronic communication and digital technology to offer products and services. There are three main components of the digital economy which were mentioned by Thomas Mesenbourg, namely e-business infrastructure, e-business and e-commerce. E-business infrastructure is all about technical means, software products, telecommunications, networks and human capital. E-business is a way of doing business, which is the procedure that the organization implements by using information and communications technology (Urunov et al., 2021).

With the development of digitization and technology, e-commerce emerges and grows gradually as well as helps the growth of the economy. E-commerce refers to electronic transactions, which may be defined as the purchasing and selling of items

and services as well as the transmission of cash, money, data, and information pertaining to commercial transactions over the internet and information and communication technology (ICT). Essentially, e-commerce enables the purchase and sale of actual goods and services online, facilitating economic transactions for all types of enterprises and customers. They will be able to sell and buy at any time and from any location. E-commerce is beneficial for lowering production costs, boosting productivity, enhancing corporate communication, assuring the quality of goods and services, and generally improving company performance. It contributes to the development of fresh ideas and provides an innovative means of doing business. As a consequence, e-commerce has a profound and pervasive effect on businesses (Meher & Burhan, 2020).

The introduction of e-commerce facilities has made shopping easy and convenient for people. Online sellers and shoppers are increasing every day, especially during Covid-19 pandemic. Individuals have the option of purchasing millions of products through internet shopping with a variety of options in models, colours, and sizes of items. These items may be picked from the comfort of their own home utilising a computer or a smartphone equipped with an internet connection. The online merchants provide door-to-door delivery through their own or third-party courier services, as well as installation and after-sales services. These help consumers to save a lot of time, money, and energy without having to physically go to the shops. Online merchants accept payment through a variety of methods, including debit cards, credit cards, internet banking and cash on delivery. However, although online shopping platforms have a strong security system in place, certain hackers and unethical individuals can commit fraud by swindling money from bank accounts, credit cards, debit cards, shipping faulty items, stealing bank account details, and others (Rukmani & Jegan, 2019).

Typically, the word 'fraud' refers to theft, corruption, conspiracy, embezzlement, money laundering, bribery, and extortion. Fraud is defined as the dishonest use of deceit to achieve an advantage for oneself and/or to cause a loss for others (*Fraud risk management - CIMA,* 2009). According to the government of Malaysia's Official Portal illustrates that computer-related crimes are cyber fraud,

telecommunication scams, online dating fraud, e-shopping fraud, e-finance fraud, property violations, and intellectual fraud.

Online shopping fraud involves 2 parties, scammers and consumers. The consumers deal with fake online sellers through fake websites or could be attracted by fake advertisements on registered legitimate online purchase platforms. Scammers can take advantage of the anonymity of the internet to mislead naive customers. Fake sellers are familiar with advanced technology and they are able to build websites which resemble genuine online purchase platforms. The website may consist of complex designs and layout, with possibly stolen logos and even a domain name that is nearly identical to the business they are imitating. Fake online purchase platforms usually have very low prices on luxury goods such as branded clothing, jewellery, and electronic devices. There are a few online shopping scam case examples in which the consumers paid for the products but received non-authentic goods or never received the goods that they ordered. The consumers may also pay for goods by using online banking transfer or credit card payment, but do not receive goods from the sellers (Online Shopping Scam, n.d.). The payment methods available could also be a gateway for scammers to commit fraud. Methods such as online banking transfer and credit card are putting consumers at risk when they insert the information into the fake website when checking out, thus allowing hackers to access their bank accounts.

0. Research Problem

In this modern era, the digital economy is trending as it brings convenience to both consumers and suppliers. Therefore, more and more enterprises are involved in the digital economy and making everything can be purchased online. It is undeniable that the contribution of the digital economy to a country's economy is pivotal. However, in some cases, some criminals take the opportunity to commit fraud, causing damage to the national economy.

Fraud is a critical issue which brings a lot of impacts to human, reputational, financial, security and business. People who have insufficient awareness of fraud will easily become the target. Fraud will cause long-term mental trauma for victims as the increase of disadvantage from the impact. Fraud has the ability to affect any entity. Other than people losing the trust in government and industries, international and economic reputation will be affected too. Besides, the defence and security of a country can be jeopardised by fraud. It can also harm a nation's standing in the eyes of the rest of the world. According to international estimates, governments typically lose between 0.5% and 5.0% of their budgets to fraud and related losses. Some of the most common forms of fraud go unnoticed, and it is difficult to identify them. It is possible to uncover and more precisely estimate fraud losses through measurement exercises (Ipsos, 2020).

Consumer confidence in online purchase was significantly influenced by the long-term impact of a brand. The consumer will put the blame on the retailer and would not do online purchases again in a shop where the retailer's account was compromised. As the rapid development of e-Commerce can lead to a rise in e-Commerce fraud, all related bodies have the responsibility to prevent the possibility of fraud cases happening on consumers. One of the example id the two-factor authentication is the most effective tool on fraud prevention. However, it was identified as the most detrimental factor to decreasing income for merchants in a few countries such as the United Kingdom, France, United States and Germany. These will be the challenges for those merchants who want to provide better services as well as a safer experience for consumers ("*The impact of eCommerce fraud on retailers and shoppers"*, 2021).

The online retail industry in China accounts for about half of all global business and makes China the world's leading e-commerce market. Based on the study from Zhang et al. (2013), while China is expanding its e-commerce market at a rapid speed, trust fraud has become the biggest obstacle to China's online business. According to Taobao's research, during the period from October 17, 2008 to May 17, 2009, the largest percentage of detected fraud transactions amounted for about 47 percent of all graded transactions, while the lowest number was nearly 9 percent. In fact, many intentional and unintentional factors can influence the writing of

reviews. For instance, a seller's account might be used to write nice reviews and promote themselves, or it could be used to create nasty reviews to target competitors. As a result, many victims suffered trust fraud on Taobao, China's largest e-commerce platform.

According to Bernama (2022), there were 51,631 documented occurrences of online fraud in Malaysia, totalling more than RM1.61 billion in damages from 2019 to 2021 and the highest was 18,857 cases for online purchases. Basyir (2021) indicates that since 2017, Malaysians have lost RM2.23 billion as a result of cyber-crime frauds. Based on the police figures, there were 67,552 cyber-crime instances registered between 2017 till June 20, 2021. Of this figure, 23,011 occurrences of e-commerce frauds were reported, making them the most prevalent, followed by illegal loans with 21,008 cases and investment frauds with 6,273 cases. Moreover, based on the industry survey conducted by Li et al. (2013), 92 percent of online consumers check the comments of previous customers before making purchasing decisions. Trust fraud in the online purchase can occur easily because buyers in an online marketplace rely significantly on reviews left by past customers (Wu et al., 2015). Therefore, online purchases fraud will be focused in this study.

People in Malaysia are increasingly turning to online shopping since the Covid-19 pandemic outbreak in 2020. In addition, the pandemic and also the government's drive toward a digital economy have quickened the consumer shift from shopping in a mall to online. Further, Malaysians are pleased that they still can consume necessities, but the number of cyber fraud cases is increasing tremendously. Incredibly, Malaysians lose an average of RM 100,000 a day to cyber fraudsters, with each case costing an average of RM 6,200, and a total loss of RM35,882,385 as a result of a 70% increase in online retail fraud cases compared to 2013. (Kong, 2020).

There are also fraud cases that revolves around concert tickets, now namely the concert ticket scam. There is a lot of dissatisfaction among Shawn Mendes's local fans whom bought tickets on the “Carousell” app and found out they were counterfeits. These fraud cases happens when consumers redirect their buying experience to alternative options, which in this case were caused by the original

website's ticket being sold pout. Scammers offered the victims their MyKad number to reassure them that they are dealing with a certified and safe merchant, which in a lot of cases successfully tricked consumers into trusting them (Landau, 2019).

Another frightening example would be online flight ticket sales, which could potentially be a good trap for scammers for consumers. It has been found that fake online flight tickets were making their rounds on the internet in a new method, costing an estimated RM233,954 in losses. The Malaysian police have received 20 different reports of incidences of fraud, all of which are currently being investigated. The victims had across advertisements for flight tickets by Apsan Travel and Tour Sdn Bhd on a social media. The price offered which were significantly lower than the normal rate in market successfully attract victims (Zolkepli, 2022). Throughout this research, we can better understand why people could get scammed from online shopping and the characteristics of people who got cheated through online shopping.

It can be observed that E-commerce scams have resulted in the bad experience of online shopping and cause huge loss to the economy. The main problem is that consumers may have insufficient awareness of online shopping. Consequently, fraudsters will exploit consumers' weaknesses to defraud them. Therefore, in this study, the factors that affect online purchase fraud are of concern.

0. Research Objectives and Questions

1. General Objective

This study is to examine the factors contributing to online purchase fraud in Malaysia.

0. Specific Objective

1. To examine the relationship between consumer online shopping behaviour and online purchase fraud in Malaysia.
2. To examine the relationship between e-commerce technology and online purchase fraud in Malaysia.
3. To examine the relationship between the virtual quality of the network and online purchase fraud in Malaysia.
4. To examine the relationship between e-commerce law and online purchase fraud in Malaysia.
5. To examine the relationship between hours spent online and online purchase fraud in Malaysia.

0. Research Question

Data gathered in Malaysia will be used to answer some relevant research topics:

1. Is there a significance relationship between consumer online shopping behaviour with online purchase fraud?
2. Is there a significance relationship between e-commerce technology with online purchase fraud?
3. Is there a significance relationship between the virtual quality of network with online purchase fraud?
4. Is there a significance relationship between e-commerce law with online purchase fraud?

5. Is there a significance relationship between hours spent online with online purchase fraud?

0. Research Significance

The public may have limited knowledge of fraud cases and how they work, and how to avoid them. This study could help raise the government's attention on the weakness of e-commerce law and the punishment mechanism for faith-breaking. It also opens the governing sector and policy makers' eyes as to how ill-equipped are the citizens in fending off online fraud cases. Through this study, enforcement and improvement can be made on e-commerce governing laws.

Besides, consumers can be more aware on online purchases if consumers' awareness on online fraud cases is inculcated. Online purchase is the norm nowadays for a portion of consumers in Malaysia as online purchase platforms have more choices and the prices are cheaper than physical shops. If consumers are properly equipped with the right knowledge in spotting and fending off online fraud cases, it reduces the amount of online fraud significantly.

This research may also be able to indirectly influence businesses or entities. Government takes control by improving or enforcing the e-commerce laws, thus, helping businesses of entities increase income and profit. These can be due to an increase of consumers confidence when spending online knowing that online platforms are safe and secure. The consumers' awareness and knowledge on the possibilities of online fraud cases can also help increase their purchasing confidence.

0. Structure of Study

There are a total of five chapters in this study. Chapter one is an overview of our research, which includes research background, research problem, research objective and research questions, research significance, as well as structure of study. In Chapter two, literature review of this research paper will be discussed. The relationship between dependent variables (Online purchase fraud), and five independent variables (Consumer online shopping behaviour, E-commerce technology, Virtual quality of network, E-commerce law, and Hours spent online) will be discussed in this chapter. Theoretical framework consists of concepts with definitions and references that are related to previous scholar literature and theory that may be used in this study. In addition, Chapter three will present methodology. Research design, data collection methods, sampling design, research instrument, proposed data analysis tools and construct measurement will be explained in this chapter. Next, data analysis will be interpreted in Chapter four. In this chapter, data analysis once the survey data has been gathered. It utilises the data to run numerous tests to demonstrate the link between the independent and dependent variables, as well as to do inferential analysis. Lastly, this study comes to an end in Chapter five. It included the main conclusions of the study, as well as its implications, limitations, and some recommendations for further research on the topic.

1.6 Conclusion

Throughout this chapter, factors contributing to online purchase fraud in Malaysia had been discussed and followed by the problem statement of the fraud. Researchers had been presented with research objectives, research question and the significance of study in this chapter. The literature review of previous research studies will be better explained in Chapter 2.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

This chapter will discusses the dependent variable and the independent variables. We will review the past studies and examine the five independent factors (consumer online shopping behaviour, e-commerce technology, the virtual quality of network, e-commerce law, and hours spent online) and the dependent variable (online purchase fraud). The detailed information on each variable will be shown below.

1.1 Review of Variables

With the rapid development of the global digital economy in recent years, an increasing number of people are opting to shop online. In Malaysia, Shopee and Lazada are the two most popular online shopping platforms (Kiew, Abu Hassan, & Abu Hassan, 2021). However, online shopping frauds are on the rise, which is causing concern among online customers. Hence, this chapter aims to determine each and every relationship of the determinants with online purchase fraud in Malaysia to obtain a deeper understanding of the factors contributing to online purchase fraud.

1.1.1 Online Purchase Fraud (Dependent Variable)

Consumers are increasingly purchasing things online as a result of increased Internet access. People complete the transaction in a non-face-to-face manner when purchasing goods or services virtually. Before making a purchase, a customer is unable to physically inspect the quality of the item in question or to ensure the confidentiality and safety of passing sensitive personal and financial information (such as credit card data) over the Internet to an unknown third party (Lee & Turban, 2001). In this case, the risk of online purchase fraud will increase because everyone does not know

the identity of the other party. The increased risk of fraud for online transactions may be attributed to information asymmetry. Under asymmetric information, sellers have much more knowledge about the object being offered than purchasers (Akerlof, 1970; Mishra, Heide, & Cort, 1998). This greatly increases the likelihood of fraud (Dekleva, 2000).

Online shopping fraud includes confiscating goods, receiving the wrong item, purchasing an item or service at a certain price and then getting charged more than that, and so on (*Survey on scams and fraud experienced by consumers - final report*, 2020). Furthermore, online vendors may accept payment but deliver the incorrect goods or fail to deliver at all; a shop may delay product delivery or refuse to exchange a damaged product (Peštek, Resić & Nožica, 2011). This variable is designed to identify people who have experienced online purchase fraud or determine victims while shopping online.

1.1.2 Consumer Online Shopping Behaviour

Online consumer behaviour refers to the process through which customers make purchasing choices in e-commerce. The actions themselves, such as recognising a problem or choosing to make a purchase, are based on expectations and needs that are always changing (Wenzl, 2021). Consumer willingness to pay for goods and services online is influenced by personal preferences. According to the research from Wu (2003), consumer's online shopping behaviour influence consumer attitudes and online purchase decisions significantly.

Katawetawaraks and Wang (2011) claims that consumers prefer shopping online because they believe that shopping over the internet is more convenient. Convenience influences crucial marketing outcomes, such as purchasing behaviour and consumer rating (Seiders, Voss, Godfrey, & Grewal, 2007). As consumers devote less effort and time to online shopping,

their need for convenience has risen, and as a result, online shopping has lately gained greater attention (Kumar & Kashyap, 2018). When consumers have too much trust in the convenience of online shopping, they will be careless when purchasing online, and thus easily fall into online shopping fraud. This shows that the more convenient online purchasing is, the higher the probability of consumers falling into online purchase fraud.

Other than convenience, consumers choose online shopping because they are attracted by well-designed websites. Based on the study from Darwish, Zarka & Aloul (2012), some fraudsters use high-quality visual content, such as animated pictures and flash media, to fool unsuspecting viewers into falling for their deception. Thus, according to their study, there is a positive relationship between a well-designed website and fraud.

When it comes to online shopping, one important common behaviour that the majority of people have is they read previous reviews before purchasing the things they are interested in. This is because online reviews are an important and inescapable part of the e-commerce process (Wu, Ngai, Wu & Wu, 2020). Based on the research from Wang, Xie, Liu & Yu (2011), there is a positive relationship between fake reviews and online fraud. This is because spammers have turned their attention to the review system, which is frequently employed or encouraged by businesses to create false evaluations in order to promote their products and services and/or divert customers away from their competitors. Additionally, the e-commerce network environment has a lot of faulty services and hostile feedback behaviour (Wang, 2022). Based on Amorim et al. (2017), the less negative feedback an item has received in the past, the more reliable it is and the lower the risk. Consumers trust e-commerce sellers when there is less negative feedback to the particular sellers. The seller uses product reviews as an essential source of information for consumers to gain confidence and make informed purchasing decisions. Therefore, the positive correlation between fake reviews and online purchase fraud when consumers cannot identify fake reviews from sellers (Lackermair, Kailer, & Kanmaz, 2013).

1.1.3 E-commerce Technology

Electronic commerce makes use of several technologies, including mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, Electronic Data Interchange (EDI), inventory management systems, and automated data collection systems. A large part of today's e-commerce transactions take place online. However, e-mail, mobile devices, social media, and telephones may also play a role by providing payment gateway points (Rahman, 2014).

Although many online platforms have implemented defensive technology to combat virus risks, e-commerce technology is critical for online shopping activity. The trustworthiness of the technology that underpins an e-commerce transaction is crucial for consumer confidence. The more customers rely on online services, the more they regard it as a trusted relationship, the higher the trusted premium that best practice companies command and the greater the corresponding erosion of trust for those with poor IT operations. Customers may lose faith in e-commerce due to a lack of technical dependability. Technology may serve as a guide for clients seeking confirmation of their trust or suspicion of e-commerce websites (Corbitt, Thanasankit & Yi, 2003).

Online retailers must have sufficient cyber security since cyber-attacks may result in the loss of money, data, or even the company's survival. To steal sensitive data from companies, cybercriminals employ cutting-edge methods. Security technologies include concepts, regulations, and hardware that work together to reduce danger, identify vulnerabilities, and plan for when and how to react to potential threat (Government of Canada, 2021).

Based on Jain and Raman (2022), the security risk associated with digital financial services has been defined as digital fraud and identity theft. If sensitive information is intercepted, it endangers consumer confidence and

participation in digital financial services. When consumers trust the security of e-commerce technology, fraudsters may take advantage of the technology's flaws to deceive consumers. Therefore, there is a positive relationship between e-commerce technology and online purchase fraud according to Online Trust Model

According to Wopperer (2002), ignoring the security of technology will lead to an increase in online purchase fraud. This is because it allows cyber hackers to easily find and exploit weak links in business websites to easily obtain customer card information and other personal financial information. Programming errors, unintentional security gaps, and improper encryption methods in the technology can all expose systems to significant levels of risk. The more secure of the e-commerce technology, the less the incidence of online purchase fraud. Chawla & Kumar (2021) states that data security is perhaps the greatest threat to e-commerce. The markets are subject to so many breaches that it seems like everyone is hacked, making it difficult to ensure that the technology is secure and safe. Therefore, online purchase fraud and e-commerce technology are negatively correlated. This is due to the insecurity and unsafety of technology, which has led to an increase in online purchase fraud.

1.1.4 The Virtual Quality of Network

The idea of network virtualization suggests combining network resources from both software and hardware into a single network complex or a collection of network functions and objects. This kind of virtualization, which is regarded as external, can be used to virtually incorporate distant physical items into a single network structure. In this instance, virtualization can take the form of network equipment including routers, switches, multiplexers, and network interfaces. Virtual private networks (VPNs) and virtual local area networks can both be created using a similar set of virtualized network resources (VLANs). A VPN can replicate a direct

connection, securely connect remote clients to a work or home network, and link many corporate networks into a single domain zone. To separate traffic within the company LAN, utilise VLAN. Virtual channels are established on the physical network, which are then followed by packets from various user groups (Ageyev, Bondarenko, Radivilova & Alfroukh, 2018).

The network creates a virtual environment for human contact in which individuals may communicate anonymously and experience a world distinct from the actual one. Simultaneously, online transaction partners have produced fake photos, allowing individuals to hide their true identities in order to avoid committing fraud or evading discovery and punishment (Liu & Zhang, 2007). Additionally, online merchants rely heavily on their electronic storefronts to attract and engage with consumers. Online merchants may focus on how to design websites that consumers consider trustworthy, and then defraud consumers through the virtual quality of network. The faked website incorporates harmful manipulations aimed to raise users' trust, lessen their perception of danger, and eventually improve the possibility that they will make a purchase (Grazioli & Jarvenpaa, 2000).

Lee, Ariff, Zakuan, Sulaiman, and Saman (2016) emphasize that online vendors develop high-quality website design in order to boost their online visibility and increase the likelihood of online shoppers accessing and purchasing their products. In order to be truly effective online retailers, the websites of online vendors must be of higher quality. This will increase the chances of online shopping fraud when the authenticity of the website is not as good as the seller designed it. Moreover, Shahzad (2015) claimed that 77% of respondents were motivated to buy via a decent and high-quality website design, while 76% of online shoppers were ready to purchase through a secure and user-friendly website design. This finding shows that a quality website design is important for attracting customers to visit the online shop. Simultaneously, customers evaluate an online store's overall service quality based on their experience using the website (Rita, Oliveira, & Farisa, 2019). Therefore, some online stores may use high-quality website designs to deceive buyers and give false or misleading information to

buyers. The virtual quality of network and online purchase fraud are positively correlated, since the higher the quality of website design, the higher the probability of online purchase fraud.

The perceived quality of a website design is the experienced level of quality that users perceive based on the website's overall performance. The better the website's maturity, the higher its perceived quality; conversely, the greater the website's lack of practical experience may lead to fraud events and poor judgement. When users believe a site to be of poorer quality, the risk of cyber-fraud increases, as does the amount of money lost. When consumers perceive a better quality site, more maturity, and the accompanying trust, emotions and self-esteem, they feel a bigger feeling of loss when defrauded, and the non-monetary fraud loss is greater (Zhang, Tsai, Lin, Cheng, & Lu, 2018). The virtual quality of network and online purchase fraud are negatively correlated, since the poorer the quality of website design, the higher the probability of online purchase fraud.

There is a significance relationship between web fictitious quality virtual quality of network and online purchase fraud, as authentic high-quality website designs lead to a reduction in fraud.

1.1.5 E-commerce Law

The protection of e-commerce consumers' rights and benefits has become more important in the contemporary day due to the development of information technology. Malaysia's e-commerce and internet enterprises are governed by a variety of distinct rules and regulations. Significant to Malaysian e-commerce are the following: Electronic Commerce Act 2006 (ECA), Personal Data Protection Act 2010 (PDPA), Consumer Protection Act 1999 (CPA), Consumer Protection (Electronic Trade Transactions) Regulations 2012 (ETT Regulations), Trade Descriptions Act 2011 (TDA),

Communications and Multimedia Act 1998 (CMA), and others (*Malaysia - eCommerce*, n.d.).

The Malaysian Communications and Multimedia Commission (MCMC) has the authority to handle consumer complaints when the case is relating to licensees misconduct. The licensees include network infrastructure providers, network services providers, application service providers, and content applications service providers. A consumer forum has been established by MCMC and two codes have been issued which are a General Code that applies to all licensees, and a sub-code that applies to Internet Service Providers (Sothirachagan, 2020). As there are some authorised regulators such as MCMC, the consumer will be more confident with online purchases but there are still some fraud cases happening as the consumers let their guard down.

According to Alqahtani, Al-Badi & Mayhew (2012), cyber-law is crucial in e-Commerce. Without e-commerce law, there are no special organisations or institutes to defend consumer rights and to enforce control and censorship over this type of business. There is no well-known corporation or government initiative to punish a dishonest business. This was one of the reasons for not adopting e-commerce in Saudi Arabia. The study shows that without strict e-commerce laws, online purchase fraud will get worse.

Inadequacies in India's Consumer Protection Act 1986 and other related laws increase fear and lack of trust among internet customers, as well as increase the chances of online shopping fraud (Chawla & Kumar, 2021). There should be a strengthening of rules and legislation to safeguard consumer rights and give online consumers with data privacy, secure transactions, and a sense of confidence in online shopping. Furthermore, judicial interventions and directives ensure the security of internet customers. In research from Pinto, Mottola, Marchetti, Savarino & Tantillot (2019), it is crucial to ensure the authenticity of products by enacting corresponding e-commerce specific laws, regulations and by-laws. Strengthened laws can reduce online purchase fraud and this contribute to

the negative relationship between e-commerce law and online purchase fraud.

1.1.6 Hours Spent Online

According to the study by Pratt, Holtfreter, & Reisig (2010), the findings demonstrate that spending time online and making purchases from websites increases the risk of being targeted by fraud. The result shows that hours spent online had a positive and statistically significant influence on Internet fraud targeting ($p < 0.05$, one-tailed test).

Hours spent online is considered as a variable contributing to Internet fraud. The average number of hours individuals spend online each week, whether at home or at work, was used to calculate time spent online (Reisig, Pratt & Holtfreter, 2009). Based on the research outcome, the participants with higher victimization risk adopted online habits that reduced their risk of being targeted by cybercriminals. In order to reduce perceived risk, these individuals spend much less hours per week online and make significantly fewer online purchases. Thus, the study makes an explanation which is that people who perceive themselves to be at higher danger will change their routine to avoid becoming victims. Internet users who believe there is a high risk of their credit card information being stolen in cyberspace might lessen their risk by adopting a lower-risk online routine, such as spending less time online.

In research from Reep-van Den Bergh and Junger (2018), the chance of being a victim of internet fraud rises with more hours of internet usage.

1.2 Relevant Theory

1.2.1 Online Trust Model

According to Beldad, de Jong & Steehouder (2010), they define online trust as an attitude of confident expectancy in an online environment of danger that one's weaknesses will not be abused. When buying online, a consumer, as a trustor, finds himself or herself in a dangerous situation in which he or she uses the Internet to convey his or her demands to an e-vendor and submits personal information. He or she selects a payment method and expects the website to be a secure platform for the transaction, as well as the seller to fulfill the purchase request in an honest and professional manner.

Findings from Corbitt et al. (2003) imply that individuals are more likely to make online purchases if they sense a higher level of confidence in e-commerce and have more expertise using the Internet. The amount of perceived market orientation, site quality, technological trustworthiness, and user's online experience are likely to impact customer trust. People with a better perception of site quality seem to have a higher perception of e-market commerce's orientation and credibility. Additionally, those with a greater degree of faith in e-commerce are more inclined to engage in e-commerce.

Online trust plays an important role in e-commerce because one of the most severe barriers to consumers engaging in e-commerce, which involves transactions in which financial and personal information is transmitted to merchants via the Internet, has been recognized as a lack of confidence (Wang & Emurian, 2005). Trust mechanisms provide the assumption that a seller would behave in the customer's best interest, hence encouraging the consumer to be sensitive to the seller's actions (Grazioli & Jarvenpaa, 2000). Building consumer trust on the Internet is a difficulty for online merchants and a research area that is becoming increasingly concentrated and essential. Thus, consumer trust is said to be utmost important in order to complete an online transaction between buyers and sellers. As online buyers and online

sellers are separated in terms of time and location (Riegelsberger, Sasse & McCarthy, 2005), and the shoppers cannot touch, smell, taste, or try tangible products (Chen & Dibb, 2010), these situations can lead to online fraud.

Research model in the study from Liu & Zhang (2007):

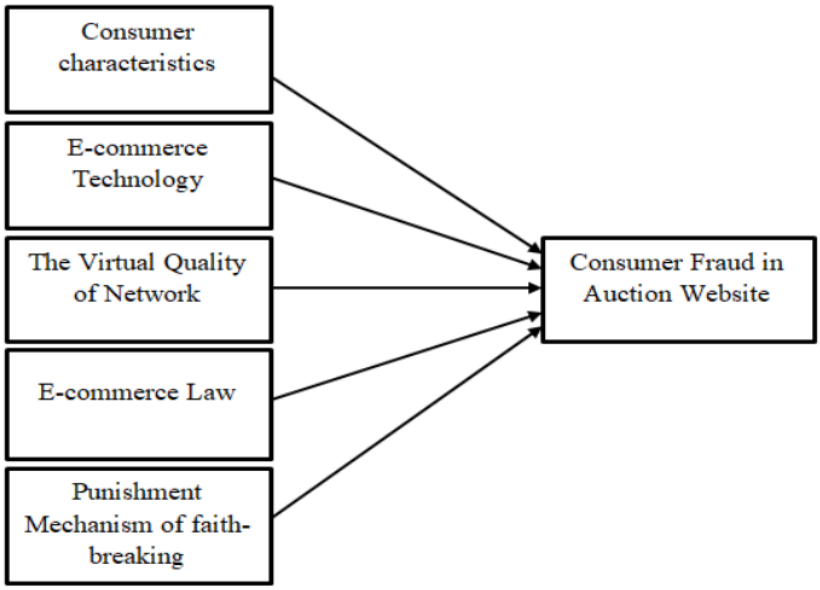


Figure 2.1: Research model in the study from Liu & Zhang (2007)

Based on the research model by Liu and Zhang (2007), their end results found that consumer characteristics, e-commerce technology, the virtual quality of network, e-commerce law, and punishment mechanism of faith-breaking have a significant impact on consumer fraud in auction websites.

According to the SPSS result analysis, rotated component matrix shows that the variables have factor loadings greater than 0.5, which are about 0.7, indicating that they are highly connected with auction website fraud. In short, this study was selected as a reference theoretical model because it investigates the factors that influence consumer fraud in auction website, which is similar to our dependent variable, online purchase fraud.

1.2.2 Routine Activity Theory (RAT)

The routine activity theory is a well-known theory that is applied to internet consumer fraud victimization. It includes a likely offender, a suitable target, and the absence of a capable guardian. A crime can be committed if these three requirements are met, as it is the convergence of their physical and temporal proximity that provides the potential for a crime to occur. An ordinary person can be easily persuaded to commit a crime, according to the theory of routine activities, which holds that criminal behaviour does not require deep psychological reasons for the conduct. Victimization is the main focus of the theory instead.

According to the theory, online fraud risks are concentrated among those who expose themselves to fraudsters via certain online activities, such as shopping (Wilsem, 2011). Reisig and Holtfreter (2013) expressed that the risk of being a victim of shopping fraud rises when people do things that do not require a lot of guardianship, like making online purchases, which exposes them to more motivated offenders. Consistent with RAT's predictions, technical advancements, which is the Internet, have increased offenders' possibilities to contact prospective fraud targets, and victim complaints of online fraud continue to grow. Nowadays, online shopping is one of the most popular internet activities. As a result, the Internet creates an atmosphere that makes it extremely easy for fraudsters to discover potential targets. Target accessibility and visibility are supposed to function as discriminating features to criminals who choose to victimise in such an environment of many criminal options on the Internet. The ability to track down Internet fraudsters is determined by people's online behaviours. Empirical studies found that persons who expose themselves to criminals by making online purchases and spending time on the Internet are more likely to be targeted for Internet fraud. The more available and visible individuals are to fraudsters via their online actions, the more likely they are to become victims of online consumer fraud (Wilsem, 2011).

Research model in the study from Pratt et al. (2010):

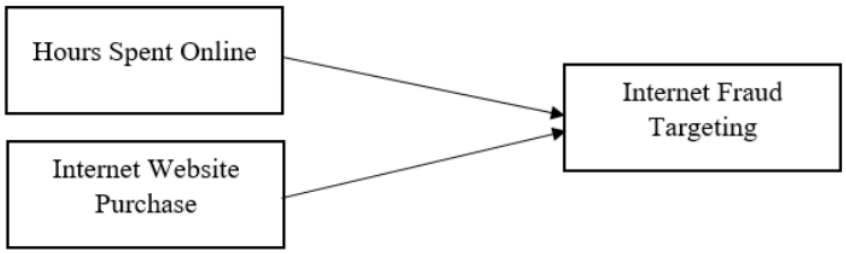


Figure 2.2: Research model in the study from Pratt et al. (2010)

Hours spent online as the first variable, indicates the weekly average of the amount of time spent online to engage in visiting or buying products via Internet. The next variable, Internet website purchase used to determine if respondents had made a purchase from an Internet website.

This theory was chosen for our research because it is a famous explanation of victimization as well as the dependent variable is quite related to what we are investigating, namely online purchase fraud.

1.3 Proposed Theoretical / Conceptual Framework

From the research of Liu and Zhang (2007) and Pratt et al. (2010), we discover that online purchase fraud is significantly influenced by the factors such as consumer characteristics, e-commerce technology, the virtual quality of network, e-commerce law, punishment mechanism of faith-breaking, hours spent online, and internet website purchase. By adjusting and combining these two studies to develop our research framework, we finalize our independent variables as consumer online shopping behaviour, e-commerce technology, the virtual quality of network, e-commerce law, and hours spent online. The term of "consumer online shopping behaviour" is used for the purpose of our research. The reason for eliminating the variable of punishment mechanism of faith-breaking is that it is quite similar or related to the variable of e-commerce law. According to the research from Liu and Zhang (2007), the presence of punishment mechanism is to protect user's security

effectively. This is somehow same as the existence of e-commerce law, which is to protect the right and benefits of e-commerce consumers. For the variable of internet website purchase, it determined only whether participants had made any purchases from an online website (Pratt et al., 2010). In this case, we would like to choose hours spent online rather than the variable of internet website purchases because it demonstrates how spending time online affects fraud in a more direct way.

As shown in the Figure 2.3, the proposed dependent variable is online purchase fraud, while the independent variables are consumer online shopping behaviour, e-commerce technology, the virtual quality of network, e-commerce law, and hours spent online.

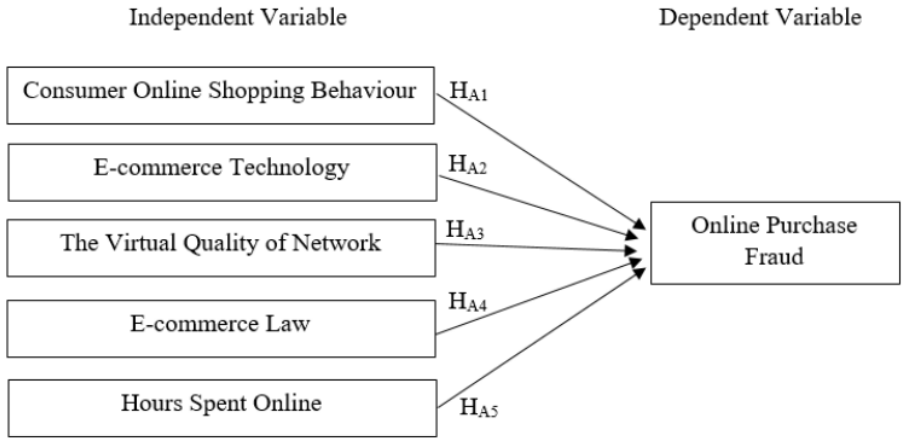


Figure 2.3: Proposed Model of the Factors Contributing to Online Purchase Fraud

In which:

H_{A1}: There is a significance relationship between consumer online purchase behaviour and online purchase fraud.

H_{A2}: There is a significance relationship between e-commerce technology and online purchase fraud.

H_{A3}: There is a significance relationship between the virtual quality of network and online purchase fraud.

H_{A4}: There is a significance relationship between e-commerce law and online purchase fraud.

H_{A5}: There is a significance relationship between hours spent online and online purchase fraud.

1.4 Hypothesis Development

1.4.1 Consumer online shopping behaviour influences online purchase fraud

Consumer online shopping behaviour influenced by the convenience of online purchase, well-designed of websites, and behaviour of reading previous reviews. There is a positive connections exist between the convenience of online purchase (Katawetawaraks and Wang, 2011; Seiders, 2007; and Kumar & Kashyap, 2018), well-designed of websites (Darwish et al., 2012), and reading fake reviews (Wu et al., 2020, and Wang et al., 2011) with online purchase fraud.

H_{01}: There is no significant relationship between consumer online shopping behaviour and online purchase fraud.
H_{A1}: There is significant relationship between consumer online shopping behaviour and online purchase fraud.

1.4.2 E-commerce technology influences online purchase fraud

Corbitt et al. (2003) indicates that consumers would lose trust in e-commerce with poor IT security. Jain and Raman (2022) shows the positive relationship between e-commerce technology and online purchase fraud according to Online Trust Model. This is due to the more trust in the security of e-commerce technology (whether it is secure or not), the more likely it is for fraudsters to take advantage of the technology's flaws to deceive

consumers. However, Wopperer (2002) and Chawla & Kumar (2021) explain the negative relationship between e-commerce technology and online purchase fraud, which is the lower the security of e-commerce technology, the higher the probability of online purchase fraud.

H_{01}: There is no significant relationship between e-commerce technology and online purchase fraud.
H_{A1}: There is significant relationship between e-commerce technology and online purchase fraud.

1.4.3 The virtual quality of network influences online purchase fraud

The relationship between the virtual quality of network and online purchase fraud is ambiguous. Lee et al. (2016), Shahzad (2015), and Rita et al. (2019) state that more consumers are more willing to buy in stores with high quality design. Some sellers may develop high-quality website design to raise the consumers' trust, leading to online purchase fraud. However, Zhang et al. (2018) shows the negative relationship between the virtual quality of network and online purchase fraud. The lower the quality of website design, the higher the probability of online purchase fraud.

H_{01}: There is no significant relationship between the virtual quality of network and online purchase fraud.
H_{A1}: There is significant relationship between the virtual quality of network and online purchase fraud.

1.4.4 E-commerce law influences online purchase fraud

There is a negative connection exists between e-commerce law and online purchase fraud. Alqahtani et al. (2012), Chawla & Kumar (2021), and Pinto

et al. (2019) indicate that e-commerce laws are important to protect consumers from online purchase fraud. The stronger the e-commerce laws, the less fraudulent online purchase is.

H_{01}: There is no significant relationship between e-commerce law and online purchase fraud.
H_{A1}: There is significant relationship between e-commerce law and online purchase fraud.

1.4.5 Hours spent online influences online purchase fraud

There is a positive relationship between hours spent online and online purchase fraud (Pratt et al., 2010 and Reep-van Den Bergh & Junger, 2018). The more hours spent online, the higher risk of being a victim of online purchase fraud.

H_{01}: There is no significant relationship between hours spent online and online purchase fraud.
H_{A1}: There is significant relationship between hours spent online and online purchase fraud.

1.5 Conclusion

In this chapter, the relationship between the independent variables and the dependent variable has been clearly stated. We have specified the literature review to give a related concept, methodologies, and findings that are based on our research topic and align with our research objectives. There are two relevant theories have been chosen in our research. Testable hypotheses have been formulated in this chapter in order to continue to determine the viability of the idea that will be discussed in Chapter 3.

CHAPTER 3: METHODOLOGY

1.0 Introduction

This chapter's purpose is to examine the research methodology and discover the relationship between the variables. This study is being conducted in terms of research design, data collection methods, sampling design, research instrument, proposed data analysis tool, and constructs measurement. The whole of the research procedure will be detailed here. The research technique will include detail the data analysis process.

1.1 Research design

Research design is the framework of methodologies and strategies a researcher will use in a study. It enables researchers to focus on research methodologies that are adequate for the selected topic and construct their research for favorable results. In order to identify which model to use for the research, a researcher must acknowledge the types of research design. There are different types of research design, such as descriptive, experimental, correlational, diagnostic and explanatory research design. The research design could also be classified into two categories, which are quantitative research design and qualitative research design.

In this research, descriptive research design is more preferable. According to Dulock (1993), descriptive research design is to accurately reflect or account for the features of a certain person, group, or scenario; theses research is conducted to learn more about a topic, provide a better description of it, record how often it happens, and classify it into relevant categories.

Besides, quantitative research will be used in this study since it can be measured correctly. Quantitative research refers to a variety of approaches dealing with the

systematic research of social issues via the use of statistical or numerical data (Watson, 2015). Thus, quantitative research entails measurement and implies that the topic under investigation can be quantified. It intends to analyze data for patterns and correlations, as well as to validate the measurements performed. This full range is covered by quantitative research. For all methods of measurement, the same requirements are used to evaluate, compute, and analyze data.

1.2 Data Collection Method

Data collection method is a technique to gather the information for the research to solve the research problem, hypothesis, and estimate the result (Dudovskiy, 2022). Data collection methods can be classified into two types which are primary and secondary data collection methods. Primary or secondary data may be used to gather the essential data (Sekaran & Bougie, 2010). In order to investigate the factors contributing to online purchase fraud in digital economy in Malaysia, this study obtain primary data.

1.2.1 Primary Data

According to Kabir (2016), primary data is information gathered from firsthand experience. For instance, interview, survey, experiments, observation etc. Primary data is more objective, credible, and accurate since it has not yet been presented. As primary data has not been modified or amended by humans, its reliability is greater than secondary data (Kabir, 2016).

The primary data collection method is used for this study via questionnaire. The questionnaire is prepared with seven sections from Section A to Section G. In order to get information from the questionnaire, it is created with demographic questions as well as behavioral questions with Likert scale. A total of 38 questions have been prepared for the questionnaire. Moreover, the questionnaire will be created through Google form to conduct online

surveys. The questionnaires are sent out to certain groups of people in order to acquire primary data. Google Form is a great tool for distributing and collecting questionnaires since it is easier and takes less time than traditional methods of data collection like in-person interviews (Razif, Misiran, Sapiri & Yusof, 2020). As compared to filling out a paper questionnaire, taking part in an online survey might be more convenient for respondents (Punter, Ciolkowski, Freimut & John, 2003). Also, the data collected from online questionnaires are more reliable, and the response rate is higher.

1.3 Sampling Design

Sampling design is an essential component of research. Since it is not always possible to monitor all members of a population, samples are taken to get a better knowledge of it. The objective is to acquire samples that accurately reflect the population. Due to time and financial limitations, the sampling effort must be precise. To define the characteristics of highly variable populations, more samples are required than for less variable populations. In this study, sampling design includes target population, frame and location sampling, technique of sampling, and size of sampling (Wills, Roecker & Avello 2020).

1.3.1 Target Population

The target population is the group of people on whom the initiative will perform research and develop findings (Lavrakas, 2008). The target population for this study is Malaysian citizens who are 18 years old and above including Malay, Chinese, and Indian. The purpose is to target Malaysians who are at 18 years old and above because according to the Age of Majority Act 1971 which come into force throughout Malaysia on 30th April 1971, the age of majority in Malaysia is 18 years old (Singh & Lui, 2021).

1.3.2 Frame and Location Sampling

Sample frame is the collection of resources from which the sample is chosen (Turner, 2003). In this study, Malaysians 18 years old and above are capable of allocating their money to any financial activity on their own. According to the Guardianship of Infants Act 1961, the assets of the youngster shall be managed and handled by guardians. Thus, Malaysians who are under 18 years old are excluded from our research.

Sample location refers to the particular location where a geographical sample was collected (Turner, 2003). For this study, the sampling location will include West Malaysia and East Malaysia. There are total 13 states (Johor, Kedah, Kelantan, Malacca, Negeri Sembilan, Pahang, Penang, Perak, Perlis, Selangor, Terengganu, Sabah and Sarawak) and 3 federal territories (Kuala Lumpur, Putrajaya, Labuan).

1.3.3 Technique of Sampling

Technique of sampling can be classified into two categories, which are probability sampling and non-probability sampling (Albaity & Rahman, 2019). Probability sampling is defined as every respondent has an equal chance to be selected in the sample. Non-probability refers to every respondent in the population not having an equal probability of being chosen. Since the target population of this study is from West Malaysia which are 18 years old and above, thus the respondent do not have equal chances to be chosen, and the technique of sampling used is non-probability sampling.

In addition, non-probability sampling methods can be separated as convenience sampling, purposive or judgement sampling, snowball sampling and quota sampling. As mentioned before the requirement of target population, judgement sampling will be adopted in this study.

According to Menoe (2020), if a study uses judgement sampling, the researcher will select respondents who are most suitable to the research questions. Thus, based on the criteria of the study, Malaysia citizen who use online shopping and 18 years old or above will be chosen to answer the questionnaire.

1.3.4 Size of Sampling

The sample size refers to the total number of respondents involved in a research, and the number is always classified by demographics such as age, gender, and location so that the total sample reflects the whole population. One of the most significant aspects of statistical analysis is choosing the suitable sample size. If the sample size is too small, the findings will be invalid and will not appropriately reflect the actuality of the population being studied. In order to prevent this issue, the Yamane formula (1967) will be adopted (Israel,1992).

$$n = \frac{N}{1 + N(e^2)}$$

Where:

N = Population size

e = Acceptable sampling error

n = Sample size

Based on the formula above, the confidence level is 95% and the p-value will be 0.05. According to the Department of Statistics Malaysia (2021), West Malaysia's population in 2021 is roughly 25.9 million. Thus, substitute all the information above into the formula.

$$n = \frac{25{,}900{,}000}{1 + 25{,}900{,}000(0.05^2)}$$
$$n = 399.999$$
$$n \approx 400$$

The result shows the sample size is 399.999 people. In order to collect authentic data, the sample size is rounded up to 400 respondents, which means that there are a minimum of 400 respondents is required.

1.4 Research Instrument

1.4.1 Questionnaire Survey

Section A: Demographic Information

1. Do you shop online?

Yes	
No	

2. Gender

Male	
Female	

3. Age

18-24 years old	
25-39 years old	
40-60 years old	
61 years old and above	

4. Nationality

Malaysian	
Non-Malaysian (Please specify country below)	
Others	

5. Ethnic

Malay	
Chinese	
India	
Others (please specify)	

6. State

Johor	
Kedah	
Kelantan	
Malacca	
Negeri Sembilan	
Pahang	
Penang	
Perak	
Perlis	
Sabah	
Sarawak	
Selangor	
Terengganu	
Federal Territory of Kuala Lumpur	
Federal Territory of Putrajaya	
Federal Territory of Labuan	

7. Education qualification

Secondary school	
Foundation or Diploma	
Bachelor Degree	
Master Degree and above	

8. Employment status

Self-employed	
Employed	
Unemployed	

9. Monthly Allowance or Salary

Below RM1,000	
RM1,000-RM2,000	

RM2,001-RM3,000	
RM3,001-RM5,000	
RM5,001-RM10,000	
RM10,001 and above	

10. How often do you shop online?

More than once a month	
Once a month	
At least once in six months	
At least once a year	

11. Which online platform do you prefer?

Shopee	
Lazada	
Taobao	
Facebook live	
Shop page via Instagram	
Internet website	
Others	

Section B: Consumer Online Shopping Behaviour

Consumer Online Shopping Behaviour		**Original Content**	**Source**
1	I choose online products based on the convenience of purchase.	Consumer benefit perceptions (purchase convenience) influences the attitude of consumer toward online shopping.	Wu (2003)

2	I buy product from a well-designed online website.	Some fake sellers may decorate an online website that sells fake brands products to entice consumers to buy them.	Carpineto & Romano (2017)
3	I read reviews before buying a product online.	Online reviews are an important and inescapable part of the e-commerce process.	Wu et al. (2020)
4	I choose fashion products online based on my lifestyles.	Consumer lifestyles (fashion) influences the attitude of consumer toward online shopping.	Wu (2003)

Section C: E-commerce Technology

E-commerce Technology		**Original Content**	**Source**
1	E-commerce systems are good in maintaining data accuracy.	E-commerce technologies are effective in keeping the accurate value of data.	Corbitt et al. (2003)
2	An order cannot be denied once it has been placed. (Eg. After the buyer places an order, the seller cannot reject the order)	An individual cannot reasonably claim not to have taken an action online while they actually have. For example, once an order is placed, the buyer/seller cannot deny placing such an order.	
3	I think that most business websites know enough about technology to handle online transactions. (Eg.	I believe that most commercial web sites have the necessary technology knowledge to	

	Business involve security technology to ensure the transaction safety)	carry out the on-line transaction.	
4	My financial information will be abused when I make online payments.	I worry about the abuse of my financial information when I use digital finance.	Jain & Raman (2022)
5	I feel that my personal information provided to retailers has been disclosed without my consent.	I feel that my personal information given to retailer may be compromised to third party.	Shahzad (2015)

Section D: The Virtual Quality of Network

The Virtual Quality of Network		**Original Content**	**Source**
1	Most e-commerce platforms provide enough information to evaluate a product.	E-commerce web sites usually provide sufficient information to evaluate the product.	Corbitt et al. (2003)
2	I only shop online if the items are visually appealing.	I buy from online stores only if they are visually appealing and have a well-organized appearance.	Shahzad (2015)
3	I only shop online if the stores appear to be well-organized.	I buy from online stores only if they are visually appealing and have a well-organized appearance.	

4	I only buy from internet retailers if the information is simple to understand. (Eg. If product information is confusing or difficult to determine, I would search another option)	I buy from online stores only if the site content is easy for me to understand and the information provided is relevant.	

Section E: E-commerce Law

E-commerce Law		Original Content	Source
1	Shopping online is risky because there is no strict cyber law to punish fraudsters. (Eg. privacy risk, quality risk etc.).	Shopping online is risky because of a lack of strict cyber laws in place to punish frauds and hackers.	Shahzad (2015)
2	Internet user's privacy is severely violated.	The privacy of Internet users is greatly violated.	Liu & Zhang (2007)
3	Despite all of today's security measures, internet shopping platforms are still not sufficiently protected.	Despite all the safety precautions in place today, Internet and e-mails are not safeguarded enough.	
4	As a consumer, my personal information can be disclosed by the seller without my consent.	Companies can disclose personal information if they deem it necessary.	

Section F: Hours Spent Online

Hours Spent Online	Original Content	Source

1	I used to go online to access the internet or the world wide web.	Ever go online to access to Internet or World Wide Web or send and receive email?	Pratt et al. (2010)
2	I spend more than 8 hours on the Internet per week.	How many hours each week would you say you spend on the Internet?	
3	There are risks when I spend time online. (Eg. social risk, financial risk etc.)	Spending time online and making purchases from websites increases the risk of being targeted by fraud.	
4	Spending more time online will increase the chance of risky situation. (Eg. social risk, financial risk etc.)	Amount of time spent online, which in turn increases likelihood of exposure to risky situations	Reyns (2011)
5	Spend time online without proper supervision will increase opportunities for crime. (Eg. In order to avoid crime, it is acceptable to be supervised when spending time online)	Criminal opportunities emerge when motivated offenders converge in time and space with suitable targets in environments lacking capable guardianship.	

Section G: Online Purchase Fraud

Online Purchase Fraud		**Original Content**	**Source**
1	I can identify the latest online purchase fraud. (Eg. Fake online shopping	There ever was a time you felt you were the subject of a consumer fraud attempt?	Pratt et al. (2010)

	app, fake advertisement etc.)		
2	I might not receive the products/services after I made online purchase.	You bought what you thought was a good deal, but you never received the goods/service or the goods/services turned out to be fake or non-existent.	*Survey on scams and fraud experienced by consumers - final report*. (2020)
3	I used to receive a fake product that I ordered online.		
4	I used to buy a product/service at a certain price but later being charge more.	You ordered free or relatively cheap products or services, but it turned out you had been tricked into a costly monthly subscription.	
5	I used to buy tickets for an event, concert or travel but it turned out the tickets were not genuine.	You bought tickets for an event, concert or travel but it turned out the tickets were not genuine and/or you never received them.	

Table: 3.1: Source of Questionnaire

1.4.2 Questionnaire Design

A cover page outlining the study's topic and a short justification for the purpose of conducting the survey are listed in research questionnaires, which is to investigate the factors of online purchase fraud in Malaysia. At the bottom of the cover page, instructions are provided to assist respondents fill out the survey. The following page is Personal Data Protection Statement

(PDPA), on which respondents grant permission and approval for the research to use the information they gave in the survey for academic reasons. Following that, there are a total of 38 questions distributed across Sections A through G. Section A contains questions on the respondents' demographic information, such as the gender, age, ethnic, state, educational qualifications, monthly income, and so on. The subtopics from Section B to Section G are the acknowledgement, consumer online shopping behaviour, e-commerce technology, the virtual quality of network, e-commerce law, hours spent online, and online purchase fraud (dependent variable). For the questions from Section B to Section G, the 5-point Likert scale is adopted to keep track of the respondents' level of response to the questions. For example, "1 = Strongly Disagree", "2 = Disagree", "3 = Neutral", "4 = Agree", and "5 = Strongly Agree".

1.4.3 Pilot Test

A pilot study is a pre-testing of the main study conducted with the purpose of improving the quality and efficiency of the research (Teijlingen & Hundley, 2002). The objective of pilot test is to enhance the viability of the study, reduce error, and assess the practicability of the questionnaire before the final survey questions are sent to actual respondent in order to gather actual and useful data (Albaity & Rahman, 2019). After getting the results from the pilot test, the researchers will be able to figure out what are the concerns of the survey and how to fix them. They will also be able to figure out which questions will be used in the real survey.

The previous researcher suggested using a sample size of 50 respondents for the pre-test (Su, Swanson & Chen, 2016). The pilot test for our study is conducted from 15 June 2022 to 21 June 2022, which is about one week. 50 sets of questionnaires were sent to 50 respondents which come from different state in Malaysia. Lastly, after collected primary data from 50

respondents, it will be measure using SPSS to examine for any discrepancies and ensure the questionnaire's accuracy and reliability.

1.5 Proposed Data Analysis Tool

According to Arora (2021), Data analysis is the systematic use of statistical and logical methods to explain the scope of the data, modularize the information structure, compress the data representation, demonstrate through pictures, tables, and graphs, and analyze statistical tendencies, probability data, and extract useful conclusions. In this research, SPSS Statistical Software will be used to analyze the data collected from the questionnaire. It helps this study to do data analysis, such as Reliability Test, Multicollinearity Test and Multiple Regression Analysis.

1.5.1 Descriptive Analysis

Descriptive analysis is the technique of summarizing or describing a data set using statistical methods (Bush, 2020). Descriptive analysis is also defined as descriptive analytics or descriptive statistics. Descriptive analysis can be classified into two types, which are measure of central tendency and measure of variability. However, measures of central tendency are usually to be used, such as mean, median, and mode (Hayes, 2022). The measurement in this study will include mean, standard deviation, frequency and percentage. furthermore, all the variables data will be converted and showed in table, pie chart and bar chart.

1.5.2 Scale Measurement

1.5.2.1 Reliability Test

The reliability test determines the validity and reliability of a scale through a series of tests. According to Livingston, Carlson, Bridgeman, Golub-Smith and Stone (2018), the reliability of test results throughout several

testing dates, various test versions, or various raters evaluating the participants' response is referred to as reliability test. The reliability of scale may be attribute to the freedom of random measurement error (Pallant, 2020). The reliability of scale can be measured in two ways, which are test-retest reliability and internal consistency. In this study we are going to use the internal consistency indicator and it is measured using Cronbach's coefficient alpha.

Table 3.2: "Cronbach's Alpha" Rule of Thumb

Cronbach's Alpha	**Level of Reliability**
$\alpha < 0.6$	Poor Reliability
$0.6 \leq \alpha \leq 0.7$	Fair Reliability
$0.7 \leq \alpha \leq 0.8$	Good Reliability
$0.8 \leq \alpha \leq 0.9$	Excellent Reliability

Source: Sekaran & Bougie (2016)

The table shows Cronbach's Alpha and level of reliability. Cronbach's Alpha determine the average correlation between the scale's component. Form values between 0 to 1, higher values reflecting more reliability. Different types of scales need various levels of reliability, according to Sekaran & Bougie (2016), a minimum value for level of reliability is 0.6. the level of reliability which less than 0.6 is consider poor reliability; 0.7 to 0.8 is good reliability and 0.8 to 0.9 is excellent.

1.5.2.2 Multicollinearity Test

According to Ali, Ali and Adan (2013), multicollinearity test is the condition whereby two independent variables have a strong correlation with one another. The variance inflation factor (VIF) is a tool used to measure multicollinearity test. The tolerance value and variance inflation factor (VIF) are compared to the needed value in order to perform multicollinearity

test (Pawirosumarto, Sarjana & Muchtar, 2017). Multicollinearity do not exists between the variables if the value of VIF falls between 1 to 5 (Shrestha, 2020). A tolerance close to 1 implies little multicollinearity, whereas a tolerance close to 0 indicates that multicollinearity could cause a concern (Senaviratna & Cooray, 2019).

1.5.2.3 Multiple Linear Regression Analysis

According to Aldrich (2018), multiple linear regression is applied when there are numerous independent variables and one dependent variable. The focus of multiple regression is on how the changes in independent variables affected dependent variables. Since there are five independent variables and one dependent variable, this analytic method may be used in this research.

The model is evaluating based on the Model Summary Table, and Coefficient Table. R-square and F-test are showed in the Model Summary Table. R-square indicates the total amount of variance in dependent variable that can be accounted for by all independent variables (Pallant, 2020). Using the F-test, we may determine if changes of model in the dependent variable, it can be explained significantly or not. The model can be defined as significant if the p-value of F-test is less than 10% (Pallant, 2020).

Model below shows the equation of multiple linear regression:

$$OPF_i = \beta_0 + \beta_1\, BEHAVIOR_i + \beta_2\, TECH_i + \beta_3\, LAW_i + \beta_4\, HOURS_i + u_i$$

Where, OPF_i = Online Purchase Fraud
$BEHAVIOR_i$ = Consumer Online Shopping Behaviour
$TECH_i$ = E-commerce Technology
LAW_i = E-commerce Law
$HOURS_i$ = Hours Spent Online
u_i = Error Term

This equation will be used in the Multiple Linear Regression Analysis for this study. The equation is stated as how does the independent variables on the right, affecting the dependent variable on the left, which is identical with the hypothesis in Chapter 2.

1.6 Construct Measurement

Steven's scale of measurement contains four categories which are nominal, ordinal, interval, and ratio. For the following study, only three of them will be used in the questionnaire which are nominal, interval, and ratio.

1.6.1 Nominal Scale

The nominal scale divides observations into categories depending on their equivalence. The numbers assigned to the categories are merely labels. Gender, eye colour, and race are examples of nominal scale data.

1.6.2 Ordinal Scale

Observations on the ordinal scale are sorted in order of magnitude. The numbers allocated to groups convey a "more than" relationship, but no indication of how much greater. Only the order is indicated by the numbers. Letter grades, rankings, and achievement are examples of ordinal scale measures (low, medium, high).

1.6.3 Interval Scale

Numbers are also used in interval scale data to indicate order and to represent a meaningful relative distance between places on the scale. There is no absolute zero on interval scales. The IQ standardized test is an example of an interval scale.

1.6.4 Ratio scale

A ratio scale, like a number scale, employs numbers to indicate order and represents a meaningful relative distance between the scale's points. There is an absolute zero on a ratio scale. Age and years of experience are two examples of ratio metrics.

Table 3.4: Summary of Construct Measurement of Survey Question

Section		Factor	Measurement scale	Likert Scale
A	Q1	Do you shop online	Nominal	-
	Q2	Gender	Nominal	-
	Q3	Age	Ratio	-
	Q4	Nationality	Nominal	
	Q5	Ethnic	Nominal	-
	Q6	State	Nominal	-
	Q7	Educational qualification	Nominal	-
	Q8	Employment status	Nominal	-
	Q9	Monthly allowance or salary	Ratio	-
	Q10	How often do you shop online?	Ratio	-
	Q11	Which online platform do you prefer?		-
B		Consumer Online Shopping Behaviour	Interval	1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree
C		E-commerce Technology	Interval	
D		The Virtual Quality of Network	Interval	
E		E-Commerce Law	Interval	
F		Hours Spent Online	Interval	
G		Online Purchase Fraud	Interval	

1.7 Conclusion

In conclusion, this chapter discussed how the research methodology has been conducted. All the process will be conducted in this research and used the SPSS software for analysis the data.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

The purpose for our research in this chapter is to carry out, analysis, summarize and interpret the data of the survey via google form online. After data collection, analysis will be done by using SPSS system. The result of the responses will be summarized and separate into the descriptive analysis, inferential analysis and multiple regression analysis in order to interpret our research data from the collected data.

4.1 Descriptive Analysis

Descriptive statistics is a data transformation that identifies and defines the characteristics of variables (Zikmund, Babin, Carr, & Griffin, 2009). It means giving information in a clear and fair manner. A descriptive coefficient is used to give an overview of a set of data that may represent the entire population or just a sample of it. In our research, there is eleven questions involved in the demographic part. All the variables data will be converted and shown in the pie chart, table and bar chart.

4.1.1 Demographic Profile of Respondents

Eleven demographic characteristics of interviewees will be discussed in this analysis, including: 1) do you shop online; 2) gender; 3) age group; 4) nationality; 5) ethnic; 6) state; 7) education qualification; 8) employment status 9) allowance or salary; 10) frequency of shop online; 11) preference of online shopping platform. The data are from Section A of the questionnaire survey and the results of all descriptive analysis will be discussed in the following subsections.

4.1.1.1 Do you shop online?

Table 4.1: Do you shop online

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	492	98.4	98.4	98.4
	No	8	1.6	1.6	100.0

	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.1: Do you shop online

Source: Developed from SPSS system

As shown in Table 4.1 and Figure 4.1, they show 492 respondents have shopped online and 8 respondents have never shopped online. There are 98.4% of respondents have shopped online and 1.6% of respondents have never shopped online. The result indicated that most people are shopping online.

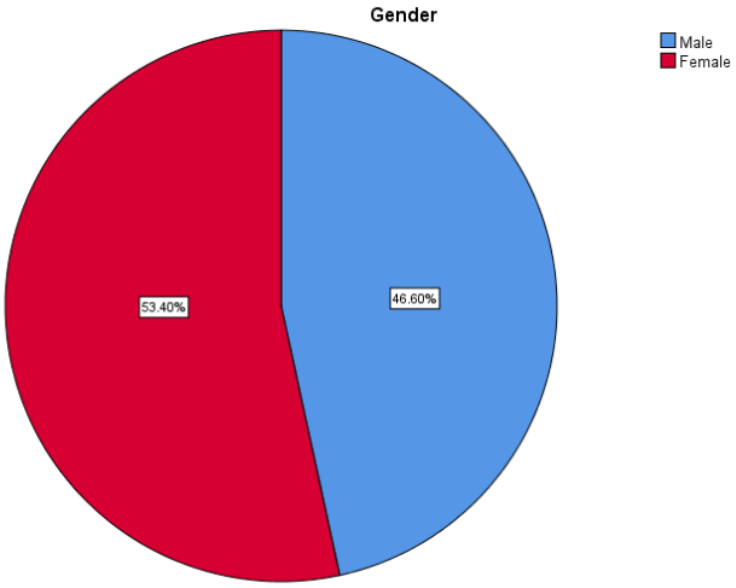
4.1.1.2 Gender

Table 4.2: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	233	46.6	46.6	46.6
	Female	267	53.4	53.4	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.2: Gender



Source: Developed from SPSS system

Table 4.2 and Figure 4.2 show that there are 233 male respondents and 267 female respondents in a total of 500 questionnaires collected from respondents. Males are 46.6 % and females are 53.4%. The data table provided above shows that the number of female respondents is slightly higher than male respondents.

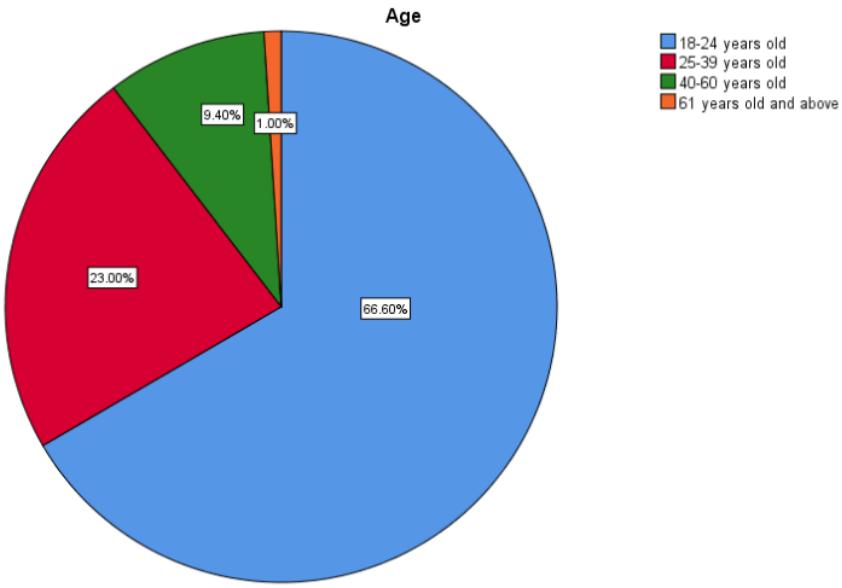
4.1.1.3 Age

Table 4.3: Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24 years old	333	66.6	66.6	66.6
	25-39 years old	115	23.0	23.0	89.6
	40-60 years old	47	9.4	9.4	99.0
	61 years old and above	5	1.0	1.0	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.3: Age



Source: Developed from SPSS system

Based on Table 4.3 and Figure 4.3, they indicate the number and percentage of respondents from various age groups that filled out the questionnaire for this research. According to the above result, this study included respondents from four different age ranges. Among the 500 respondents, 333respondents (66.6%) are aged between 18 to 24 years old which accounts the largest group for this research, followed by respondents who aged 25 to 39 years old have 115 respondents (23%). There were 47 respondents (9.4%) which were between 40 to 60 years old. Lastly, the oldest group of responders, with age of 61 and above, made up just 1% of the total.

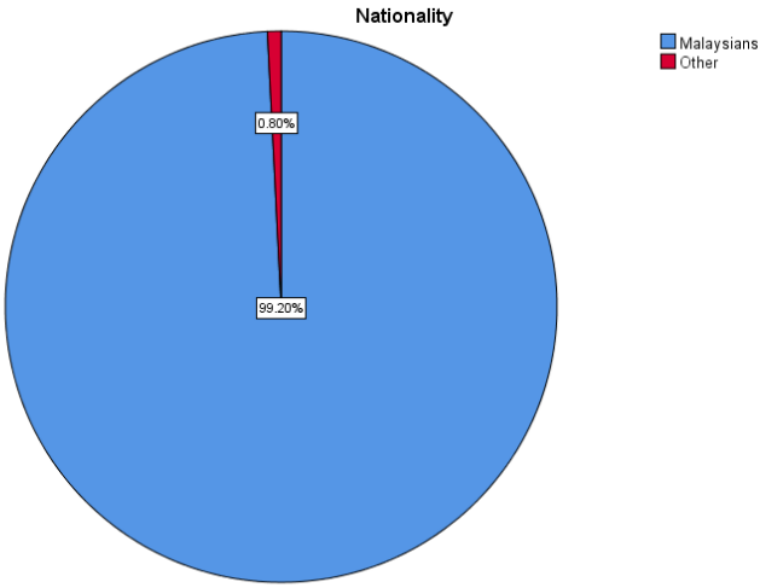
4.1.1.4 Nationality

Table 4.4: Nationality

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Malaysians	496	99.2	99.2	99.2
	Other	4	0.8	0.8	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.4: Nationality



Source: Developed from SPSS system

Based on Figure 4.4 that developed with Table 4.4, 496 respondents out of the total of 500 respondents were Malaysian (99.2%), 4 respondents were other nationalities (0.8%) such as Indonesia, China, and Singapore.

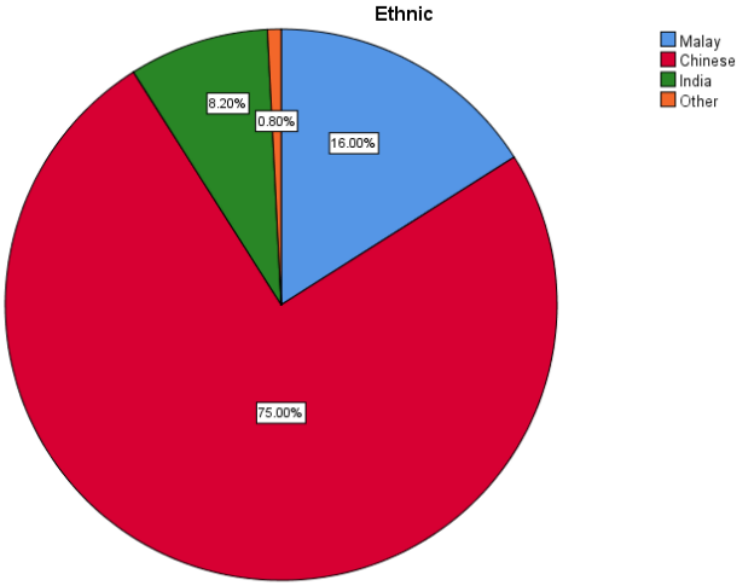
4.1.1.5 Ethnic

Table 4.5: Ethnic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Malay	80	16.0	16.0	16.0
	Chinese	375	75.0	75.0	91.0
	India	41	8.2	8.2	99.2
	Other	4	0.8	0.8	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.5: Ethnic



Source: Developed from SPSS system

Table 4.5 and Figure 4.5 show the percentage of respondents from various ethnic groups who participated in the online questionnaires. According to the data shown above, 375 of the total 500 respondents (75%) are Chinese, 80 Malay respondents (16%), 41 Indian respondents (8.2%) as well as 4 respondents (0.8%) are Bumiputera Sarawak, Siam, Indonesian and Eurasian. Based on the results above, most of the respondents of this research are Chinese respondents. Due to the respondents of the survey being mainly from urban centres in the Malaysia Peninsular west coast states/territory of Johor, Kuala Lumpur, Selangor, Perak and Penang and those having better IT infrastructure, many of the respondents are from Malaysian Chinese ethnic background.

4.1.1.6 State

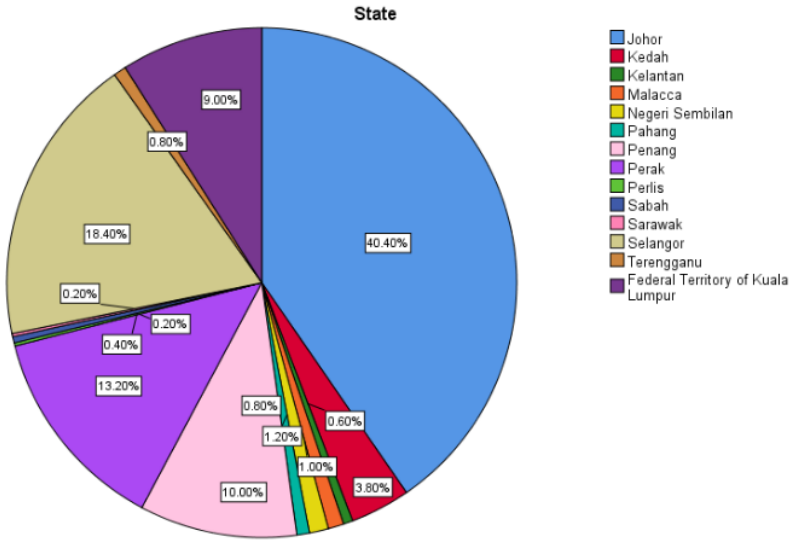
Table 4.6: State

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Johor	202	40.4	40.4	40.4
	Kedah	19	3.8	3.8	44.2
	Kelantan	3	0.6	0.6	44.8
	Malacca	5	1.0	1.0	45.8
	Negeri Sembilan	6	1.2	1.2	47.0
	Pahang	4	0.8	0.8	47.8
	Penang	50	10.0	10.0	57.8

	Perak	66	13.2	13.2	71.0
	Perlis	1	0.2	0.2	71.2
	Sabah	2	0.4	0.4	71.6
	Sarawak	1	0.2	0.2	71.8
	Selangor	92	18.4	18.4	90.2
	Terengganu	4	0.8	0.8	91.0
	Federal Territory of Kuala Lumpur	45	9.0	9.0	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.6: State



Source: Developed from SPSS system

Table 4.6 and Figure 4.6 show the percentage of respondents from various states in Malaysia who participated in the online questionnaires. From the data shown above, we may infer that 202 of the 500 respondents are located in Johor (40.4%), 92 respondents from Selangor (18.4%), 66 respondents from Perak (13.2%), 50 respondents from Penang (10%), 45 respondents from Federal Territory of Kuala Lumpur (9%), 19 respondents from Kedah (3.8%), 6 respondents from Negeri Sembilan (1.2%), 5 respondents from Malacca (1%), 4 respondents from Terengganu and Pahang respectively (0.8% for each), 3 respondents from Kelantan (0.6%), 2 respondents from Sabah (0.4%), and 1 respondents from Sarawak and Perlis respectively (0.2% for each). About 90% of respondents are from Johor, Kuala Lumpur, Selangor, Perak and Penang.

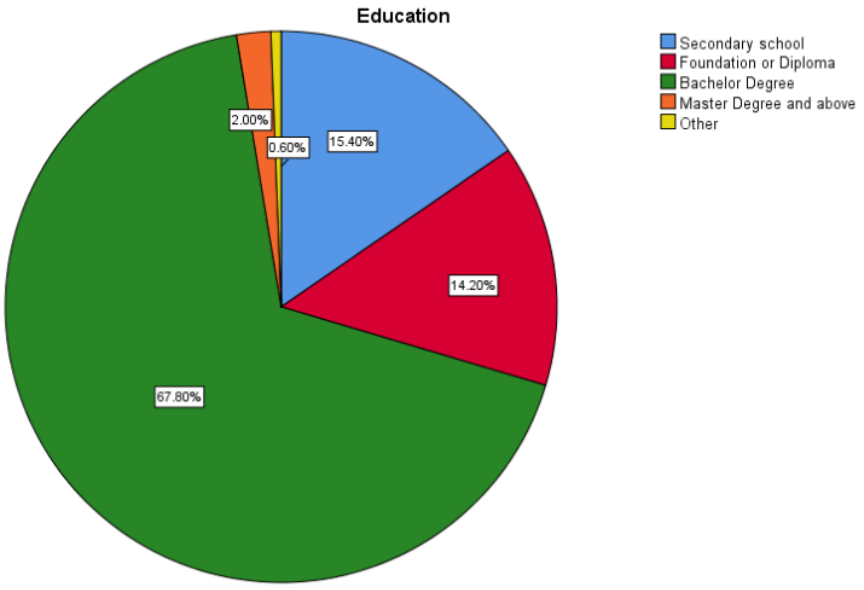
4.1.1.7 Education Qualification

Table 4.7: Education Qualification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary school	77	15.4	15.4	15.4
	Foundation or Diploma	71	14.2	14.2	29.6
	Bachelor Degree	339	67.8	67.8	97.4
	Master Degree and above	10	2.0	2.0	99.4
	Other	3	0.6	0.6	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.7: Education Qualification



Source: Developed from SPSS system

Above table and figure show the education qualification for the total of 500 respondents. The majority of respondents, which is 339 respondents (67.8 %) have a Bachelor's Degree, followed by 77 of respondents with Secondary School level (15.4%), 71 respondents with Foundation or Diploma (14.2%), 10 respondents with Master's Degree and above (2%), and 3 respondents (0.6%) with other qualifications such as STPM and Professional certification.

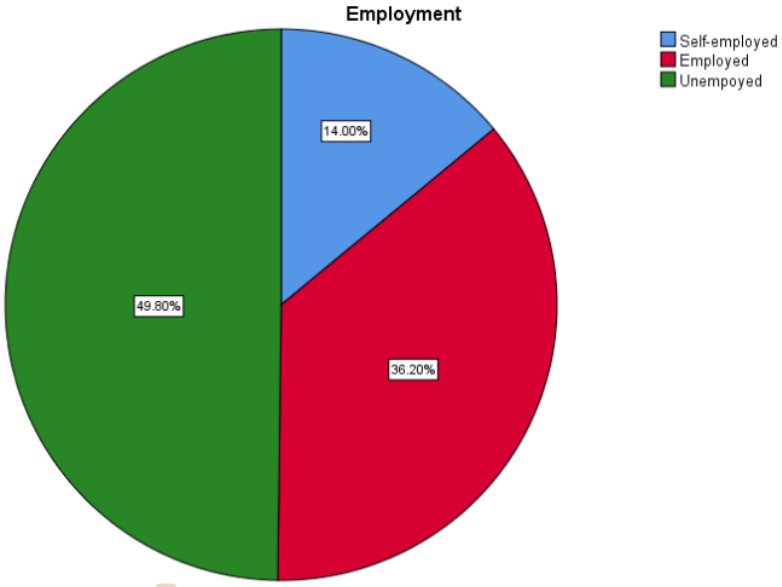
4.1.1.8 Employment Status

Table 4.8: Employment Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Self-employed	70	14.0	14.0	14.0
	Employed	181	36.2	36.2	50.2
	Unemployed	249	49.8	49.8	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.8: Employment Status



Source: Developed from SPSS system

Table 4.8 and Figure 4.8 show the employment status of respondents who participated in the questionnaires. Based on the results, there are 249 respondents who are unemployed (49.8%), 181 respondents who are employed (36.2%), and 70 respondents who are self-employed (14%).

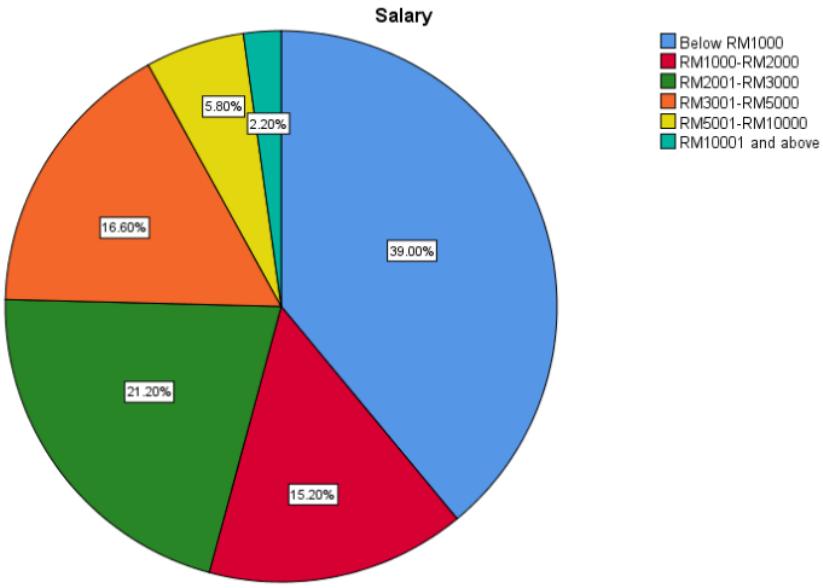
4.1.1.9 Allowance or Salary

Table 4.9: Allowance or Salary

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below RM1000	195	39.0	39.0	39.0
	RM1000-RM2000	76	15.2	15.2	54.2
	RM2001-RM3000	106	21.2	21.2	75.4
	RM3001-RM5000	83	16.6	16.6	92.0
	RM5001-RM10000	29	5.8	5.8	97.8
	RM10001 and above	11	2.2	2.2	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.9: Allowance or Salary



Source: Developed from SPSS system

As shown in Table 4.9 and Figure 4.9, there are 195 respondents who have monthly allowance or salary below RM1,000 (39%), 106 respondents (21.2%) who earn between RM2,001 and RM3,000, 83 respondents earn between RM3,001 and RM5,000 (16.6%), 76 respondents who earn between RM1,000 and RM2,000

(15.2%), 29 respondents who earn between RM5,001 and RM10,000 (5.8%) and 11 respondents who earn RM10,001 and above (2.2%).

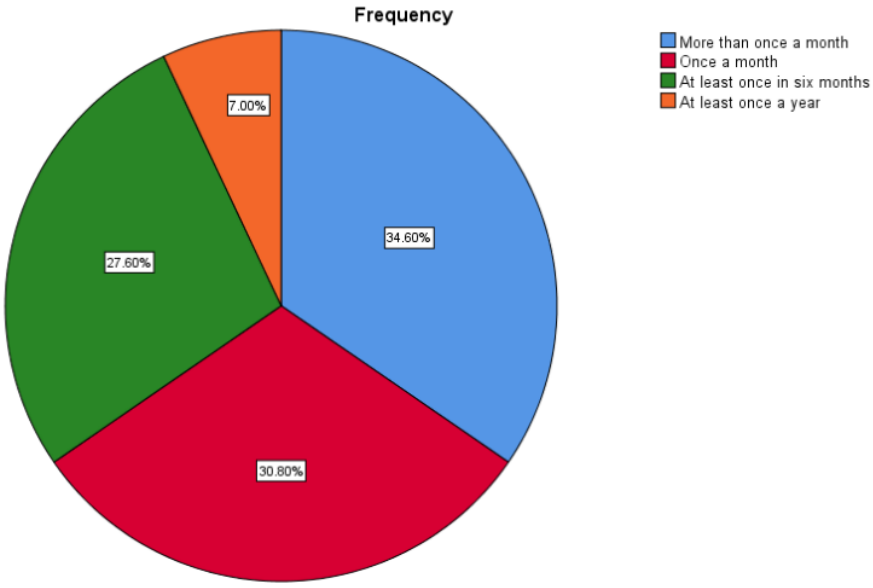
4.1.1.10 Frequency of shop online

Table 4.10: Frequency of shop online

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	More than once a month	173	34.6	34.6	34.6
	Once a month	154	30.8	30.8	65.4
	At least once in six months	138	27.6	27.6	93.0
	At least once a year	35	7.0	7.0	100.0
	Total	500	100.0	100.0	

Source: Developed from SPSS system

Figure 4.10: Frequency of shop online



Source: Developed from SPSS system

Above show the frequency of shopping online of respondents. Based on the results, there are 173 respondents who shop online more than once a month (34.6%), 154 respondents who shop online once a month (30.8%), 138 respondents who shop online at least once in six months (27.6%), and 35 respondents who shop online at least once a year (7.0%).

4.1.1.11 Preference of online shopping platform

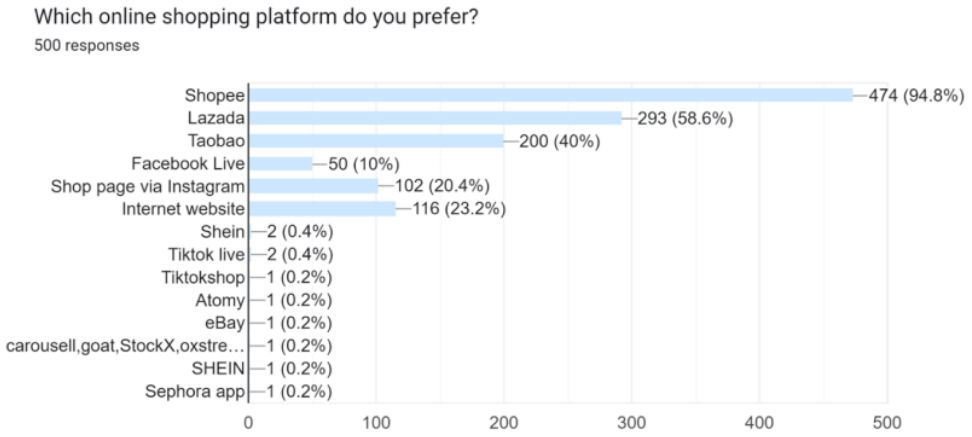
Table 4.11 Preference of online shopping platform

		Responses		
		N	Percent	Percent of Cases
Platform[a]	Shopee	474	38.0%	94.8%
	Lazada	294	23.6%	58.8%
	Taobao	200	16.1%	40.0%
	Facebook	50	4.0%	10.0%
	Instagram	102	8.2%	20.4%
	Website	116	9.3%	23.2%
	Other	10	0.8%	2.0%
Total		1246	100.0%	249.2%

a. Dichotomy group tabulated at value 1.

Source: Developed from SPSS system

Figure 4.11 Online shopping platform



Source: Developed from Google Form

Above show the online shopping platform preferred by respondents. Based on the results, there are 474 respondents who prefer Shopee (38%), 294 respondents who prefer Lazada (23.6%), 200 respondents who prefer Taobao (16.1%), 50 respondents who prefer Facebook Live (4.0%), 102 respondents who prefer shop page via Instagram (8.2%), 116 respondents who prefer Internet website (9.3%), and 10 respondents who prefer other online shopping platform (0.8%) such as Shein, Tiktok Live, Atomy and so on.

4.1.2 Central Tendencies Measurement of Construct

4.1.2.1 Consumer Online Shopping Behaviour

Table 4.1.2.1 Consumer Online Shopping Behaviour

No.	Statement	Mean	Standard Deviation	Mean Ranking
COSB 1	I choose online products based on the convenience of purchase.	4.4472	0.68684	2
COSB 2	I buy product from a well-designed online website.	4.2154	0.84086	3
COSB 3	I read reviews before buying a product online.	4.5894	0.70359	1

COSB 4	I choose fashion products online based on my lifestyles.	4.2012	0.89475	4

Table 4.1.2.1 shows how the respondents responded to 4 questions regarding consumer online shopping behaviour. The COSB3 whit the highest mean (4.5894), and its standard deviation of 0.70359 is the third highest. COSB1 has the lowest standard deviation (0.68684) and the second highest mean (4.4472). As for standard deviation, COSB2 ranks second, at 0.84086, and has the third-highest mean value, at 4.2154. The standard deviation is the highest (0.89475) for COSB4, yet its mean value is the lowest (4.2012).

4.1.2.2 E-commerce Technology

Table 4.1.2.2 E-commerce Technology

No.	Statement	Mean	Standard Deviation	Mean Ranking
ECT1	E-commerce systems are good in maintaining data accuracy.	4.0041	0.90032	1
ECT2	An order cannot be denied once it has been placed. (Eg. After the buyer places an order, the seller cannot reject the order)	3.5427	1.22608	4
ECT3	I think that most business websites know enough about technology to handle online transactions. (Eg. Business involve security technology to ensure the transaction safety)	3.9289	0.96845	2
ECT4	My financial information will be abused when I make online payments.	3.3537	1.07220	5
ECT5	I feel that my personal information provided to retailers has been disclosed without my consent.	3.6654	0.65214	3

According to the Table 4.1.2.2, there are 5 statements used in questionnaire to question respondents about the virtual quality of network. ECT1 has the highest value of mean of 4.0041, with standard deviation of 0.90032. The second highest is ECT3 with average of 3.9289 and standard deviation of 0.96845. Then, ECT5 is the third highest average score which is 3.6654, with the lowest standard deviation, 0.65214. The following is ECT2 which has mean value of 3.5427 and the highest standard deviation of 1.22608. Lastly, the lowest mean value is ECT4, which has mean value of 3.3537 and standard deviation value of 1.07220

4.1.2.3 The Virtual Quality of Network

Table 4.1.2.3 The Virtual Quality of Network

No.	Statement	Mean	Standard Deviation	Mean Ranking
VQN 1	Most e-commerce platforms provide enough information to evaluate a product.	3.8923	0.88584	4
VQN 2	I only shop online if the items are visually appealing.	3.9228	1.0021	3
VQN 3	I only shop online if the stores appear to be well-organized.	4.2033	0.86299	1
VQN 4	I only buy from internet retailers if the information is simple to understand. (Eg. If product information is confusing or difficult to determine, I would search another option.)	4.1565	0.89003	2

According to the Table 4.1.2.3, there are 4 statements were used in questionnaire to question respondents about the virtual quality of network. Mean is 4.2033 for VQN3, and the standard deviation is 0.86299, which are both the greatest and lowest respectively. The second highest mean and standard deviation, which are 4.1565 and 0.89003 respectively, belongs to VQN4. Then, in contrast to its third-highest mean score (3.9228), VQN2 has the biggest standard deviation (1.0021). VQN1 has the third largest standard deviation (0.88584) and the lowest mean (3.8923).

4.1.2.4 E-commerce Law

Table 4.1.2.4 E-commerce Law

No.	Statement	Mean	Standard Deviation	Mean Ranking
ECL1	Shopping online is risky because there is no strict cyber law to punish fraudsters. (Eg. Privacy risk, quality risk etc.)	1.9045	0.89637	4
ECL2	Internet user's privacy is severely violated.	2.2683	0.90775	2

ECL3	Despite all of today's security measures, internet shopping platforms are still not sufficiently protected.	1.9675	0.83639	3
ECL4	As a consumer, my personal information can be disclosed by the seller without my consent.	2.6199	1.31103	1

There are 4 statements were used in questionnaire to question respondents about e-commerce law as shown in Table 4.1.2.4. ECL4 have the highest mean and standard deviation with the value of 2.6199 and 1.31103 respectively. The second highest mean and standard deviation value is ECL2 with 2.2683 and 0.90775 each. The mean of ECL3 is 1.9675, which is third highest, and its standard deviation is 0.83639, which is the lowest. Lastly, the lowest mean is ECL1 with 1.9045 and it has third highest standard deviation value with 0.89637.

4.1.2.5 Hours Spent Online

Table 4.1.2.5 Hours Spent Online

No.	Statement	Mean	Standard Deviation	Mean Ranking
HSO1	I used to go online to access the internet or the world wide web.	4.25	0.82508	1
HSO2	I spend more than 8 hours on the Internet per week.	4.0915	1.14426	2
HSO3	There are risks when I spend time online. (Eg. Social risk, financial risk etc.)	3.9573	1.01326	3
HSO4	Spending more time online will increase the chance of risky situation. (Eg. Social risk, financial risk etc.)	3.7886	1.085	5
HSO5	Spend time online without proper supervision will increase opportunities for crime. (Eg. In order to avoid crime, it is acceptable to be supervised when spending time online)	3.8516	1.05082	4

Based on Table 4.1.2.5 it clearly shown the respondents responded to 5 questions regarding hours spent online. The standard deviation is lowest for HSO1, yet it has the highest mean, which is 4.25 and 0.82508 respectively. HSO2's mean value of

4.0915 ranks second highest, while its standard deviation of 1.14426 ranks highest. The third highest mean and the fourth highest standard deviation is HSO3 with 3.9573 and 1.01326. HSO5 have the fourth highest mean of 3.8516 but third highest standard deviation of 1.05082. The lowest mean is HSO4 with 3.7886 but the second highest standard deviation of 1.085.

4.1.2.6 Online Purchase Fraud

Table 4.1.2.6 Online Purchase Fraud

No.	Statement	Mean	Standard Deviation	Mean Ranking
OPF1	I can identify the latest online purchase fraud. (Eg. Fake online shopping app, fake advertisement etc.)	3.8211	0.99721	1
OPF2	I might not receive the products/services after I made online purchase.	3.5386	1.10568	2
OPF3	I used to receive a fake product that I ordered online.	3.0183	1.39305	4
OPF4	I used to buy tickets for an event, concert or travel but it turned out the tickets were not genuine.	2.7622	1.47565	5
OPF5	I used to buy a product/service at a certain price but later being charge more.	3.0996	1.36595	3

Table 4.1.2.6 clearly shown the respondents responded to 5 questions regarding the dependent variable which is online purchase fraud. Standard deviation is lowest at 0.99721 for OPF1, while mean is greatest at 3.8211. OPF2 has the fourth greatest standard deviation (1.10568) and the second highest mean (3.5386). OPF5 have the third highest mean and standard deviation with 3.0996 and 1.36595 respectively. The fourth highest average score is OPF3 with 3.0996 but the second highest standard deviation with 1.39305. The lowest mean is OPF4 with 2.7622 but the highest standard deviation with 1.47565.

4.2 Scale Measurement

In this research project, SPSS software has been used to test reliability in order to evaluate the dependent variable which is online purchase fraud and independent variable which are consumer online shopping behavior, e-commerce technology, the virtual quality of network, e-commerce law and hours spent online. The reliability test involves 500 participants.

4.2.1 Reliability Test

Cronbach's alpha has been used on reliability test in order to guarantee that the measurements include no errors and that all of the questionnaire's variables exhibit internal consistency. It is expressed between 0 and 1. When there is high reliability, the Cronbach's alpha value is close to 1. According to Sekaran & Bougie (2016), a minimum value for level of reliability is 0.6. the level of reliability which less than 0.6 is consider poor reliability; 0.7 to 0.8 is good reliability and 0.8 to 0.9 is excellent.

Table 4.2.1: Reliability Analysis Outcome

Variables	Topic	Number of items	Cronbach's Alpha	Results of reliability
Dependent variable	Online Purchase Fraud	5	0.774	Good
Independent variables	Consumer Online Shopping Behavior	4	0.648	Fair
Independent variables	E-commerce Technology	5	0.720	Good
Independent variables	The Virtual Quality of Network	4	0.653	Fair
Independent variables	E-commerce Law	4	0.623	Fair
Independent variables	Hours spent online	5	0.724	Good

Source: Data generated by SPSS Statistics, Version 25.0

Table 4.2.1 consists of the reliability result for all the variables. According to Sekaran & Bougie (2016), the level of reliability must be at least 0.6. The threshold for trustworthiness is set at 0.60. The reliability level goes from low (less than 0.6) through fair (0.6 to 0.7), good (0.7 to 0.8), and excellent (0.8 to 0.9).

Cronbach's alpha for each of the variables is more than 0.60. It also showed the level of internal consistency respectively for all the variables. The Cronbach's Alpha values for consumer online shopping behaviour, the virtual quality of network, and e-commerce law are 0.648, 0.653, and 0.623 respectively. Since their Cronbach's Alpha values are between 0.6 and 0.7, they are considered to have fair reliability. The Cronbach's Alpha for the dependent variable online purchase fraud was 0.774, 0.724 for the independent variable, hours spent online, and 0.720 for e-commerce technology. The value of Cronbach's Alpha for the three variables are greater than 0.7, which mean the three variables in this study are good reliability

Table 4.2.2: Reliability Analysis Outcome

Variables	Cronbach's Alpha
Online Purchase Fraud, Consumers Online Purchase Behavior, E-commerce Technology, The Virtual Quality of Network, E-commerce Law, and Hours Spent Online	0.773

Source: Data generated by SPSS Statistics, Version 25.0

Table 4.2.2 shows the Cronbach's alpha of combined 5 independent variables and dependent variable. The Cronbach's alpha of the combined variables is 0.773, which shows good reliability.

4.3 Multicollinearity Test

Table 4.3.1: Multicollinearity Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.173	.320		.540	.589		
	Consumer Online Shopping Behavior	-.198	.077	-.117	-2.582	.010	.680	1.470
	E-commerce Technology	.473	.065	.344	7.285	.000	.627	1.595
	The Virtual Quality of Network	-.030	.073	-.021	-.414	.679	.558	1.793
	E-commerce Law	.313	.058	.232	5.436	.000	.766	1.305
	Hours Spent Online	.280	.059	.214	4.754	.000	.686	1.457

a. Dependent Variable: OPF

Source: Data generated by SPSS Statistics, Version 25.0

Table 4.3.1 had showed the multicollinearity test for our study. If the variance inflation factor (VIF) is greater than 5 to 10 or the tolerance is less than 0.1 to 0.2, there is multicollinearity (Kim, 2019).

In this case, since the value of VIF of all variables are below 4 and the tolerance are above 0.25, multicollinearity does not exist in our study.

4.3.2 Multiple Linear Regression

Table 4.3.2.1 Model Summary

Model Summary			
R Square	Adjusted R Square	F-test	Probability of F test
0.321	0.314	46.049	0.000

Source: Data generated by SPSS Statistics, Version 25.0

Table 4.3.2.1 shows that the R square is 0.321, which indicates that the five independent variables can explain 32.1% of the variation in online purchase fraud. In this research, the F-value is 46.049 and the p-value is less than the significant level of 0.001. In this research, the F-value is 46.049 and the p-value is less than the significant level of 0.001. As a result, the model is appropriate for our research.

Table 4.3.2.2 Coefficients of variables

Variables	Coefficient	T-test	Probability for t-test
(Constant)	0.173	0.540	0.589
Consumer Online Shopping Behavior	-0.198	-2.582	0.010
E-commerce Technology	0.473	7.285	0.000
The Virtual Quality of Network	-0.030	-0.414	0.679
E-commerce Law	0.313	5.436	0.000
Hours Spent Online	0.280	4.754	0.000

Source: Data generated by SPSS Statistics, Version 25.0

Table 4.3.2.2 shows the p-value is lesser than 0.05 for consumer online shopping behavior, e-commerce technology, e-commerce law and hours spent online. As a result, the independent factors were shown to be significant in estimating online purchase fraud in Malaysia. The p-value for

the virtual quality of network is greater than 0.05 which indicates insignificance. Upon that, the linear equation is developed.:

Online Purchase Fraud = 0.173 - 0.198 Consumer Online Shopping Behavior + 0.473 E-commerce technology + 0.313 E-commerce Law + 0.280 Hours Spent Online

The linear equation above showed that there is a negative relationship between online purchase fraud and consumer online shopping behavior. This can be explained that for every increase in consumer online shopping behavior, online purchase fraud will decrease by 19.8%. There is a positive relationship between online purchase fraud and e-commerce technology, e-commerce law and hours spent online. This can be explained that for every increase in e-commerce technology, e-commerce law and hour spent online, online purchase fraud will increase by 47.3%, 31.3% and 28.0%.

4.4 Conclusion

In sum, we had completed the descriptive analysis, reliability test, multicollinearity test, and multiple linear regression analysis in chapter 4. For the descriptive analysis, we are using a pie chart and table to show the summary of our results of the questionnaire that we collected from our respondents. For reliability test, we test the reliability of all variables using Cronbach's Alpha in SPSS. Also, we had done the multicollinearity test by testing the VIF and tolerance value of the variables using SPSS. We had also used multiple linear regression analysis via SPSS in order to look for the relationship between the dependent variable and independent variable. The P-value, R value, R square value, and Beta value were generated in the multiple linear regression analysis. The outcome we have used in Chapter 4 will use to conclude and discuss in Chapter 5.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATION

4.0 Introduction

The data generated by SPSS in Chapter 4 will be summarized in Chapter 5 and followed by implication, limitation as well as recommendation. At last, a general conclusion will be discussed.

4.1 Statistical Analysis Summary

The target population for this study is Malaysian citizens who are 18 years old and above including Malay, Chinese, and Indian. Consumer online shopping behaviour, e-commerce technology, e-commerce law, and hours spent online have a significant relationship with online purchase fraud while the virtual quality of network has a negative and insignificant relationship with online purchase fraud. The result revealed that consumer online shopping behaviour, e-commerce technology, e-commerce law, and hours spent online are strong predictors of online purchase fraud while the virtual quality of network is not significant in measuring online purchase fraud.

Table 5.1 Summary of the Statistical Finding (Independent Variable)

Independent Variable	t-value	Coefficient	P-value	Result
Consumer Online Shopping Behaviour	-2.582	-0.198	0.010	Significant
E-commerce Technology	7.285	0.473	0.000	Significant

The Virtual Quality of Network	-0.414	-0.030	0.679	Insignificant
E-commerce Law	5.436	0.313	0.000	Significant
Hours Spent Online	4.754	0.280	0.000	Significant

4.2 Discussions of Major Findings

The aim of this study is to examine the factors contributing to online purchase fraud in Malaysia. This section outlines the study's key findings.

4.2.1 Consumer Online Shopping Behaviour and Online Purchase Fraud

This study's findings showed a negative and statistically significant relationship between online purchase fraud and consumer online shopping behaviours in Malaysia as the coefficient value is -0.198 and the p-value (0.010) is lower than 0.05. Therefore, the alternative hypothesis is acknowledge in this research. Consumer online shopping behaviour such as make online purchase based on convenience of purchase, well-designed online website, and reading reviews before purchase online helps in reducing online purchase fraud. The results show that Malaysian consumers are good at filtering fake reviews and buying cautiously on authentic websites. The more cautious consumers are in online purchasing, the fewer online purchase fraud cases.

4.2.2 E-commerce Technology and Online Purchase Fraud

The outcome from Chapter 4 shows a significant relationship between e-commerce technology and online purchase fraud because the p-value

(<0.000) is less than 0.05. Therefore, the alternative hypothesis is acknowledged in this study. The coefficient value of 0.473 indicates that there is a positive relationship between e-commerce technology and online purchase fraud. According to Online Trust Model, the more trust in the security of e-commerce technology (whether it is secure or not) by consumers, the more likely it is for fraudsters to take advantage of the technology's flaws to deceive consumers, so the chance of being victims of online purchase fraud rise.

4.2.3 The Virtual Quality of Network and Online Purchase Fraud

SPSS outcome indicates that there is an insignificant relationship between the virtual quality of network and online purchase fraud as the p-value (0.679) is greater than 0.05. This means that the virtual quality of network is not the main factor that contributing to online purchase fraud. Hence, the alternative hypothesis is not recognized in this study. The coefficient -0.414 indicates that there is a negative relationship between the virtual quality of network and online purchase fraud. This result is similar to the findings of Zhang et al (2008), which suggesting that the lower the quality of website design, the higher the probability of online purchase fraud.

4.2.4 E-commerce Law and Online Purchase Fraud

Based on the outcome in Chapter 4, it shows that there is a significant relationship between e-commerce law and online purchase fraud as the p-value (< 0.000) is lower than 0.05. Therefore, the alternative hypothesis is recognized in this study. The coefficient of 0.313 indicates that e-commerce law has a positive relationship with online purchase fraud. According to Md Pauzi, Zaini, & Azni (2021), although the government has passed several laws to safeguard the interests of consumers, these laws are ineffective if

customers are unaware of their legal rights and do not arm themselves with the required knowledge. It seems that most customers are unaware of the important things to consider before making a purchase while working with internet retailers. Additionally, individuals are ignorant of their legal options and rights in the event that they fall prey to online fraud. As a result, there is a positive relationship between e-commerce law and online purchase fraud.

4.2.5 Hours Spent Online and Online Purchase Fraud

The outcome in Chapter 4 shows that there is a significant relationship between hours spent online and online purchase fraud as the p-value (<0.000) is lower than 0.05. Therefore, the alternative hypothesis is recognized in this study. The coefficient of 0.280 indicates that hours spent online have a positive relationship with online purchase fraud. This suits the previous study from Pratt et al. (2010), and Reep-van Den Bergh & Junger (2018) in Chapter 2, suggesting that time spent online is contributing to Internet fraud.

4.3 Implication of Study

The practical and theoretical implications of this study will be discussed in this section. The implication of this study will explain the actions that can be taken by the government, parents, society, as well as the consumer itself, in order to avoid online purchase fraud based on the results acquired from Chapter 4.

4.3.1 Practical Implication

The research shows a negative and significant influence between consumer online shopping behaviour and online purchase fraud. The result indicates that good customers' online purchase behaviour such as purchase based on convenience of purchase, well-designed online website, and reading reviews before purchase online could help in reducing online purchase fraud. Thus, the government should give awareness to everyone to be a smart consumer while shopping online to avoid fraud. For example, the government could spread the information through social media, advertisement, newspaper and also radio, by telling them to shop with the trusted sites, and not click on the link in social media, email or message; instead, straight away buy on a trusted platform like Shopee or Lazada. Also, as a smart consumer, read the review of the goods before purchasing it.

Next, e-commerce technology is positive and significant to online purchase fraud. Nowadays, e-commerce technology is getting more advance and transformative. There are many online shopping platforms introduce their own e-wallet, like ShopeePay, GrabPay, and Lazada Wallet. The purpose of these e-wallet is give convinient to users to pay for goods that they would like to purchase without requiring bank cards or cash. In this case, most of the users would like to link their bank card to the e-wallet account, for the purpose of top-up e-wallet in a more convenient way without using online banking transactions and this incident give opportunity to the hackers to steal all the money in e-wallet. Therefore, government should hold a campaign to raise people’s awareness. The campaign can educate Malaysian citizens to protect their own privacy on social media and do not link cards as well as auto reload function on e-wallet. Social media is a treasure for cybercriminals to gather private data and utilise it to guess password make customised phishing emails, and develop other online frauds. They can also hack into an e-wallet and steal all the money in both the e-wallet and bank account.

Furthermore, virtual quality of network shows a negative and insignificant to online purchase fraud. Yet, in many cases, customers' impressions of a

website and even their online shopping behaviour will be influenced by the website's perceived features. the government should encourage consumer to purchase goods and services on authorised platform with authorised sellers provided by the platform. Also, there are a lot of cases regarding the users click on the link received from SMS and caused money in their bank has been stolen. Thus, the government should give awareness to the consumer through advertisement or social media to remind them not to click into the any links received from SMS, WhatsApp or any social media.

Besides, the e-commerce law also shows positive and significant to online purchase fraud. There have been many consumer protection laws approved by the government, but it was meaningless if consumers do not aware of their rights and do not protect themselves with legislation while facing fraud, the law is useless. Hence, consumers should take initiative to learn more about their legal rights, particularly their right to a fair decision, which includes their right to be heard in a consumer's forum and their right to get indemnity from the defaulting party. Also, in order to prevent more consumer to become victims of fraud in online shopping, MPTN and Ministry of Domestic Trade and Consumer Affairs (KDPNHEP) would collaborate to solve consumer concerns (Md Pauzi, Zaini & Azni, 2021).

Lastly, the hours spent online is positive and significant to online purchase fraud. People nowadays spend most of their time on social media, online shopping, games and many more. The more time they spend shopping online, the higher chances they might get into fraud. Parents and guardians play an important role in educating their children about online purchase fraud since they are young. Parents can educate their children the awareness of online purchase fraud by giving them an overview of online purchase fraud, and showing some examples of scam that target kids. Other than parents, education in school also important. The school educator can raise awareness through conducting an “online purchase fraud month”. Throughout the month, the school can hold some campaigns related to the topic such as, talk, essay competition, and poster design competition.

4.3.2 Theoretical Implication

Online Trust Model proposed that the variables, e-commerce technology, the virtual quality of network, and e-commerce law have positive impact on consumer fraud. From the findings, this theory can be used in the research since e-commerce technology, and e-commerce law have a positive relationship with online purchase fraud. However, the virtual quality of the network has a negative relationship with online purchase fraud and it is insignificant in explaining the relationship. This result indicates that the virtual quality of the network is not the main factor that contribute to online purchase fraud that is considered by consumers when they make online purchases. Another variable, consumer online shopping behaviour is used under Online Trust Model in the research to examine the relationship between the behaviour and online purchase fraud. The result shows the negative relationship between consumer online shopping behaviour and online purchase fraud and it is significant. This means that if consumers are cautious when shopping online, there will be less fraud. In conclusion, more specific variables should be used to improve the model when determining factors for online purchase fraud.

Next, Routine Activity Theory (RAT) is used in the research to explain the internet consumer fraud victimisation. In this research, the independent variable, which is hours spent online is used and the result is significant and positive relationship between hours spent online and online purchase fraud. This means that the more hours spent online, the greater the risk and leads to fraud. RAT can clearly explain the factor contributing to online purchase fraud.

4.4 Limitation of the Study

4.4.1 Limitation of Respondents' Demography

The primary data collection is used for this study via questionnaire. Qualitative data and quantitative data are the two overarching classifications that are used to further categorise the entirety of the data collected and analysed. Survey questionnaire is classified as quantitative data and a systematic questionnaire with closed-ended questions is an integral part of the quantitative research process. It leads to the constrained results that are stated in the research proposal. As a result, the findings cannot necessarily be taken as a broad representation of what actually took place. In addition, the researcher chooses which responses are available, so respondents have a limited number of possibilities to choose from (Chetty, 2016).

4.5 Recommendation for Future Studies

As the quantitative data collection method brought limitation to this study, adding qualitative data collection method is much recommended. The obtaining of qualitative data is an essential component of monitoring and evaluation since it enables future researchers to acquire a more nuanced understanding of a specific issue as well as a more human viewpoint on that issue. To gather qualitative data, future researchers may conduct some interviews with relevant questions. Interviews are simple to conduct and yield accurate findings in a short amount of time. The open-ended questions should be prepared for respondents to get the responses in their own words (Clements, 2021).

4.6 Conclusion

The purpose of this research is to analyse the factors contributing to online purchase fraud in Malaysia. SPSS Statistical Software analyses all the information gathered from the questionnaire through online surveys. The result indicates that the hypothesis for H_{A1}, H_{A2}, H_{A4}, H_{A5} is supported, while only H_{A3} is not supported.

However, all the independent variables are significant with online purchase fraud, except the virtual quality of network. In fact, the findings and implications of the study are obtained and properly discussed. Definitely, the study's thesis limitations are examined, and solid recommendations are given as references for future researchers. In a nutshell, this study might provide future researchers some frame on the factor contributing to online purchase fraud in Malaysia and also assist them in selecting respondents.

FACTOR CONTRIBUTING TO ONLINE PURCHASE FRAUD IN MALAYSIA

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